KNOWLEDGE, PARKS AND CULTURES

Transcultural exchange of knowledge in protected areas: Case studies from Austria and Nepal

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*“Nobody is monocultural” (*DEMORGON & MOLZ 1996*)*

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FOREWORD

"Standardisation" is one of the buzz words of globalization and it does not stop when it comes to conserving nature and protecting biodiversity. International organisations and global conventions provide labels for protection that result in globally accepted standards and frameworks for protected areas. This "standardised protection" almost automatically means/denotes a kind of streamlined basic understanding of what it is that should be protected. However, standardisation of conservation goals and practices can only be implemented when local particularities and the specific cultural contexts are taken into account.

This is the background of the book at hand. With their international MSc programme "Management of Protected Areas" launched in 2005, the authors offer a training programme for international professionals for the management and planning of protected areas that is based on rather a European perspective and expertise due to the personal and professional background of the authors. Participants of the programme not only work for European protected areas but also come from very different countries and areas around the globe. Sensibly, the authors ask about the cultural specifics and differences between managing protected areas in Europe and other regions of the world. How can expert knowledge be exchanged, what is needed and where are the limits to this kind of transcultural exchange? In their case study, they compare protected areas in Austria and Nepal and come to some very convincing basic assumptions that could enable transcultural exchange and can contribute to the standardisation of training professionals and exchange expert knowledge without neglecting the specific regional and cultural features. I hope the book will appeal to a broad audience since it – besides focus on protected areas – provides general concepts of mutual understanding and respect in transcultural contexts.

Heike Egner
Scientific director of the programme "Management of Protected Areas",
University of Klagenfurt, March 2013

FOREWORD

Protected area is an integral element of biodiversity conservation by maintaining habitats for species, ensuring ecological processes, and ecological integrity of the area. Providing vast array of goods and services, protected areas support livelihoods for about 1.1 billion people contributing to poverty reduction. Moreover, protected areas provide mitigation as well as adaptation responses to the potential negative impacts of climate change. Since the establishment of the first national park (Yellowstone, USA) in 1872, there are more than 159000 protected areas worldwide today. They are now an integral part of conservation and sustainable development contributing to the Millennium Development Goals. Advocating the significance of conservation for development, the Convention on Biological Diversity set a target to increase the protected areas coverage to at least 17 percent of the global terrestrial surface.

The global conventions and agreements provide overarching principles for conservation and management of biodiversity for sustainable development. Under these principles, national and local actions are set to protect and utilize rich biodiversity.

In Nepal, conservation initiatives started with the establishment of Chitwan National Park, the country's first national park, in 1973. There are now 31 protected areas of different categories covering an area of 34,186.62 sq. km (around 23.23 % of the total area of the country). This means that Nepal is putting an immense effort in conserving its rich biodiversity and supporting livelihoods of people. The country is well known for its efforts in conserving globally threatened species including Rhinoceros and Royal Bengal Tiger as well as applying integrated conservation and development program for supporting people's livelihoods. The community forestry and buffer zones are examples resembling the integration of conservation and supporting livelihoods in the country.

However, certain limitations including the few trained staff, limited technology, and funding are some factors limiting the effective management of protected areas in the country. Several national and international education and capacity building programs are underway to build capacities of human resources and share knowledge on good practices. International exchange should be further promoted to exchange knowledge between international and national level considering the culture of each locality. Taking this into consideration, the study conducted in Austria and Nepal focusing on knowledge barriers, organizational framework on successful exchange of knowledge, and cultural specifics/differences on manage-

ment of protected areas was a timely initiative which is very comprehensive and provides principles and recommendations for a successful transcultural knowledge exchange on protected areas management. The framework provided is highly applicable at national and international levels including Nepal. It will help build capacity of human resources and contribute to effective management of protected areas globally. I believe this publication will be of good use to a diverse audience.

Krishna Chandra Paudel, PhD
Secretary, Ministry of Forests and Soil Conservation
Government of Nepal
Kathmandu, March 2013

CONTENTS

EXECUTIVE SUMMARY

The number and extent of protected areas worldwide has increased dramatically over the past century. By 2011, 177 000 protected areas covered a total of about 23 million square kilometres of land and sea (BERTZKY et al. 2012).

Protected areas are widely recognized as a major tool for the conservation of species and ecosystems. Additionally, they help to safeguard natural resources and areas of cultural importance which local communities and indigenous peoples depend on (BIP 2010). Consequently, protected areas are a cornerstone of sustainable development. Protected areas managed to integrate development into conservation. Protected area management bodies generate, document, apply and share knowledge of sustainability all over the world. Besides protected areas, there is hardly any other institution worldwide which is able to accumulate such an amount of specific knowledge of sustainable processes. Due to the combination of global knowledge and its practical application in local contexts, transculturality can be considered a constitutive element of protected area management.

International organisations and conventions provide a globally accepted framework and standards for protected area management facilitating mutual understanding amongst conservationists worldwide. Additionally, they try to share tools and spread best practice examples throughout the world. However, the success of complex processes such as a transfer of knowledge and experience highly depends on considering the respective cultural backgrounds.

The international MSc programme "Management of Protected Areas" in Klagenfurt (Austria) contributes to the education of highly qualified professionals for protected area management at international level. Its content is structured by *"Fields of Activity"* and provides a comprehensive basis for a sustainable management of protected areas. The content is based on European experiences and perspectives. Nonetheless, in each round of the course, participants from outside Europe (e.g. Asia, Africa and Latin America) take part. Thus, the course facilitates the exchange of knowledge of professionals from different parts of the world.

Assuming a strong cultural component of protected area management and thinking of a culturally diverse world, the question arises whether the concept of

this master programme is equally appropriate for the management of protected areas in other cultures and other parts of the world. Can the programme possibly serve as a model structure for similar international programmes? Which adaptations have to be made? Which prerequisites are needed to instigate a successful international exchange? Which barriers inhibit an exchange across cultural borders? This book seeks answers to these questions by taking the examples of Austria and Nepal. Thereby, it tries to contribute to the discussion on developing global training and education schemes for protected area managers.

A framework for evaluating the transcultural transferability and necessary adaptations is developed and applied. Four protected areas (Chitwan National Park, Annapurna Conservation Area in Nepal, Hohe Tauern National Park (Carinthian part) and Donau-Auen National Park in Austria) were chosen for this study. In a first step, the concept of culture of Tylor is used to analyse the general cultural context of Austria and Nepal.

In a further step, the organisational knowledge of all case study sites and its significance for an exchange of knowledge is evaluated by means of a knowledge assessment, based on the model of Intellectual Capital Reporting of Austrian Universities. Different cultural specifications of the respective *"Fields of Activity"* of the Klagenfurt Master Programme are evaluated in the case study sites by interviewing protected area professionals and local representatives.

Experts, professionals and students of the Master Programme and alumni have frequently been involved to discuss selected findings as well as conclusions and recommendations.

Austria and Nepal apparently have a different cultural, political, and economic background. However, the findings of this study indicate that both countries share a similar vision of conserving biodiversity. The knowledge assessments carried out reveal that protected area management bodies face similar challenges and have similar goals and tasks. From a general point of view, the proposed and investigated structure is indeed applied in a similar way. However, the more detailed and operational knowledge is, the more differences are observed. Consequently, it shows that each field of activity has globally applied contents but also contents adapted to suit local conditions. Some aspects of protected area management are still completely different. The most striking differences are related to extensive law enforcement activities, the importance of wildlife management and the role of protected area management in poverty alleviation in Nepal. Two major categories of differences in application and content are identified through two major causes. Differences occur due to the natural environment (e.g. wildlife, topographical features and climate) and due to cultural differences (activities which affect the lives of people or which are defined by society such as governance models). Thus, differences in management are not inherently cultural.

Based on these findings, the organisational framework for a transcultural knowledge exchange in the field of protected area management is discussed and general principles are presented. In a discussion process which involved experts from both countries, the importance of a personalized exchange was outlined and characteristics of exchangeable knowledge were elaborated. Exchange should focus on the level of competences and be based on case studies. Special attention is drawn to the role of cultural translators who are considered an essential part for every complex or enduring exchange activity.

In general, a global basic understanding on protected areas amongst professionals prevails. Apparently, international frameworks and categories are giving rise to a global protected area *"sub-culture"*. This may provide a basis for global knowledge exchange. However, international exchange in the field of protected areas (e.g. through joint education programmes) goes far beyond a mere exchange of knowledge. It additionally serves as an inspiring input for innovation as well as for building-up an international network to instigate future cooperation and mutual understanding. The importance of intercultural issues in communication and cooperation is still underestimated. Exchange of knowledge is not only limited to the contents but rather to the design of the communication process.

This study shows that the proposed and investigated structure provides a promising starting point for an international training scheme applicable in different cultural contexts as it proved to be applicable and relevant in Austria as well as in Nepal. However, a successful transfer of this knowledge depends on an adequate adaptation of individual contents. Therefore, an approach for categorizing the contents of individual Fields of Activity is derived from the findings referring to the scope and type of content. In general, the topic of gender and knowledge management proves to be relevant for most fields of activity but has been addressed inadequately so far. It should be integrated into the European concept as well.

The conclusions and principles for a successful transcultural knowledge exchange are summarized in the *"Charta of Klagenfurt"*. Several recommendations for a transcultural exchange and improving knowledge exchange in protected areas are expressed.

The framework developed in the course of the study provides an approach of how to evaluate, how to adapt and how to organise an exchange of knowledge. The results are useful for everyone in international and intercultural cooperation.

The Charta of Klagenfurt

Preamble

In a globalized world, exchange of knowledge across cultural borders is an essential feature. Particularly in the field of protected areas, international exchange is fundamental as nature is not confined by man-made borders. Similarly, protected area professionals have to permanently cross their cultural borders in order to meet the great challenges of the present, such as climate change, biodiversity loss or depletion of natural resources.
Thus, generally accepted principles are needed as understanding human diversity leads to a better understanding of biodiversity.

Justification

(1) Global challenges can only be met by global collaboration.
(2) International actions have local implications, and local actions have international implications.
(3) Transcultural work and coproduction of knowledge is the most promising way to generate new and innovative knowledge as heterogeneous groups show better results.
(4) Understanding of cross-cultural aspects is important for securing biodiversity and leads to a better management of protected areas.
(5) Transcultural exchange of knowledge is the basis for a better mutual understanding between people of different cultural backgrounds.

Basic principles

(6) Exchange has to happen in both ways: Only the exchange benefiting all parties is a good exchange.
(7) Mutual respect, trust and equal partnerships are the fundamental principles for exchange processes.
(8) Transcultural knowledge exchange has to focus on the process, not on the solutions.
(9) Methods have to be adequate for the respective cultural context and have to be mutually agreed upon.
(10) The principle "Do with the people not for the people" shall be considered.
(11) Diversity in society has to be reflected in the process of knowledge exchange.
(12) Different ways of thinking have to be recognized and accepted.

Indispensable Prerequisites

(13) Every exchange activity should be able to answer the following questions:
- i. Why shall this knowledge be exchanged?
- ii. What kind of knowledge should be exchanged?
- iii. Who are partners and who benefits from this exchange?
- v. Are there sufficient resources to successfully realize an exchange?
- vi. What happens with the results of the exchange? Who has access to them?
- vii. Is there a mutual agreement on the framework, goals, targets, roles and fixed benefits?
- viii. Is equal access for all social groups assured in the exchange process?
- ix. What are possible impacts or repercussions of the knowledge exchange?

Scope

(14) This charter shall apply for all professionals, researchers, consultants and administrative staff involved in international and intercultural knowledge exchange activities.

General recommendations for a transcultural exchange of knowledge

(a) Use cultural translators;
(b) Respect transcultural principles;
(c) Apply a framework for transcultural exchange;
(d) Put attention not only to content, but also to the process and its evaluation;
(e) Use informal settings;

General recommendations for knowledge transfer in protected areas

(f) Improve and increase focus on knowledge management in protected areas;
(g) Enhance diversity in protected-area management;
(h) Be aware of and address intercultural issues;
(i) Make use of modern information technologies and share them

Recommendations for a transcultural training/education for protected areas

(j) Use the 27 Fields of Activities (FoAs) as a starting point for a comprehensive structure;
(k) Find the right scope for a knowledge exchange;
(l) Focus on skills and competences;
(m) Find the right mix between personal and indirect exchange;
(n) Use case studies for applied knowledge;
(o) Be aware of the networking aspect of international training;

1 INTRODUCTION, INTENT AND STRUCTURE OF THE BOOK

The number of protected areas has been increasing almost exponentially for the last one hundred years. Contemporary protected areas go far beyond conservation only. They are often in charge of regional development or of conducting applied research. They are expected to provide environmental education and to strengthen complete regions. Due to a large diversity of tasks, different disciplines have to be integrated, new and interdisciplinary approaches have to be developed and tested in practice. Consequently, very innovative knowledge is often created. Protected area managements can therefore be considered knowledge-based organisations.

However, due to the close linking with a concrete and defined space, this knowledge is subject to strong variation due to natural conditions and the culture of people living in and around the protected area. They are embedded in national systems which additionally shape the priorities and the legal framework of protected areas.

These issues make it a huge challenge to find common approaches which can be exchanged beyond a particular culture. There have been numerous efforts from international organisations to set standards and find a common understanding. More recently, the focus has been on developing common training standards. What is fundamental knowledge for protected area specialists or managers? At which level should it be exchanged? Are there or can there be common global training standards to improve the performance of protected area management?

The international master programme "Management of Protected Areas" at the University of Klagenfurt was established in 2005 to educate and train protected area professionals from all over the world. Numerous international graduates emphasized the applicability and the benefits of this master programme. The curriculum is based on 27 so-called *Fields of Activity (FoA),* which cover all aspects and tasks of protected area management. The FoAs are founded on the principles of sustainability considering ecological as well as socio-economic aspects of protected area management.

However, the contents of the course are based on a rather European perspective. The question arises whether these contents are equally beneficial for protected area managers of other cultures and in which way contents might require adaptation.

Consequently, this book tries to analyse the relevance and transferability of the Fields of Activity and the course contents to other cultures, links it with cultural influences and tries to deduct guidelines and recommendations for a transcultural exchange of protected area knowledge. It furthermore contributes to the global

discussion about homogenous standards for training and exchange of specific knowledge without neglecting individual cultural features.

1.1 Research questions and basic assumptions

The book and the research are guided by four research questions which are discussed along all chapters. They are related to two large fields: the transferability of protected area management approaches across cultural borders and the organisational setting and design of a knowledge exchange process across cultures.

The complex question of how to exchange sustainability knowledge between different cultures shall be answered by analysing whether the structure and content of the 27 Fields of Activity provide an appropriate framework for the transcultural exchange of knowledge of protected area management. Worldwide, the management of protected areas is linked to the attitudes, values and social norms of the local, regional, national and international stakeholders involved. Hence, a detailed analysis of the cultural context of the respective Fields of Activity in PA management seems indispensable and has not been realised so far. Being aware of the cultural differentiation of standardised activities involved in the management of protected areas may facilitate the knowledge transfer between countries as different as Austria and Nepal.

The research questions are as follows:

RQ1: Are the 27 Fields of Activity relevant for the management of protected areas in different cultures?

RQ2: What are cultural specifics and differences between managing a protected area in Europe and in Asia? Which contents have to be adapted, added or removed accordingly to successfully be transferred to different cultures?

RQ3: What knowledge barriers are to be found and how can knowledge flow be facilitated?

RQ4: What is considered to be the best organisational framework for a successful exchange of knowledge of protected area management?

Several basic assumptions were accompanying the complete research process, and the discussion of those assumptions is reflected along all chapters.

- Protected area managements are knowledge-based organisations.
- Protected area managements are permanently dealing with issues related to sustainability.
- Transculturality is a constitutive element of protected area management, its tasks and processes.

1.2 The MSc Programme "Management of Protected Areas"

In cooperation with international institutions such as IUCN, WWF, CBD, EUROPARC, RAMSAR, UNESCO and prominent protected areas, the University of Klagenfurt and E.C.O. Institute of Ecology designed the international MSc programme "Management of Protected Areas" (MPA). It is embedded in the international network of institutions working in the field of biodiversity conservation and protected areas (Figure 1). The programme is supposed to meet the needs of participants working in companies and institutions in the area of nature and environmental conservation and policy. It tries to combine classical academic knowledge with practical expertise and the implicit knowledge of its diverse participants. This should lead to a more effective transfer of knowledge on the level of competences.

Protected Areas (PA) are embedded in a societal context and supposed to serve society. They have to be managed adaptively in a long-term perspective by multiskilled individuals. The MSc programme provides the educational background and a comprehensive "toolbox" for these professionals. The participants are from several European countries as well as from developing countries (e.g. Armenia, Nepal, Uganda, Malaysia and Ecuador). Numerous internationally recognized experts are commissioned as lecturers for the programme.

The learning goals are:

- Provision of an excellent and comprehensive understanding of the aims and roles of Protected Areas in relation to the conservation of biodiversity and (integrated) regional development.
- Provision of detailed knowledge to apply the full range of tools available for the Management of Protected Areas.
- Developing the ability to analyse and solve problems encountered when establishing, planning and managing protected areas, to conduct inter- and transdisciplinary dialogues with all stakeholders and to develop and implement appropriate integrated solutions.
- Developing hard and soft skills to create mutual benefits for nature conservation and for the local population. Skills should allow to follow the aim of sustainable regional development in peripheral regions as well as in developing countries.

Several "generations" of graduates are active in the alumni network, a platform for a long-term international exchange of protected area professionals.

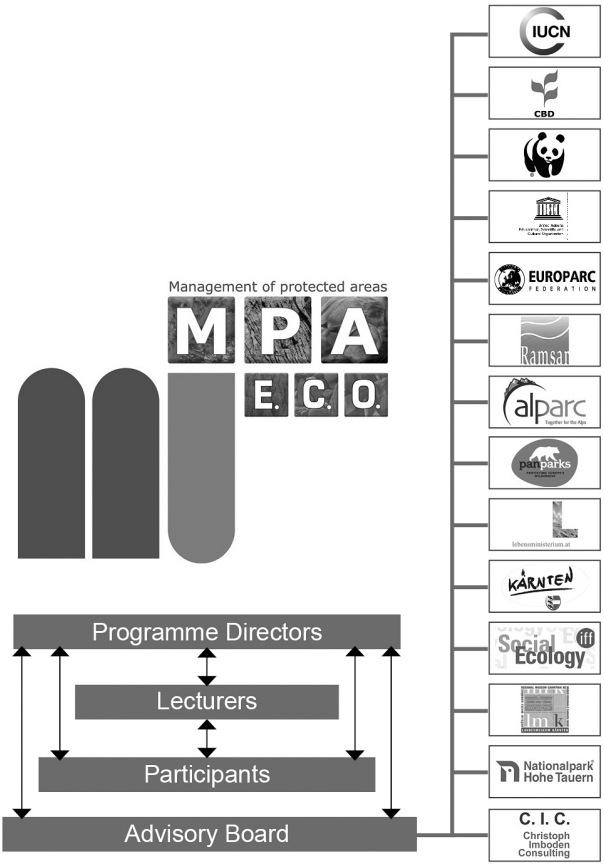

Figure 1: Institutional setting of the MPA programme in Klagenfurt

1.3 Structure of the current volume

This book provides an up-to-date overview of the topic followed by a description of methods applied, an extensive empirical part and a concluding part presenting recommendations for a transcultural exchange of knowledge *("The Charta of Klagenfurt"*).

Chapter 2 provides a comprehensive overview of and introduction to knowledge of protected area management bodies. The cultural context protected areas are

embedded in knowledge exchange and transfer processes of protected areas on a national and international scale.

Chapter 3 outlines the general and methodological approach used and explains the newly developed tools or less common methods in detail.

Chapter 4 presents an overview of the case study sites analysed in this book.

Chapter 5 analyses case studies from Austria and Nepal and outlines common and different features of protected area management. Additionally, it takes the cultural background into account by analysing the respective national cultural features and their significance for protected areas.

The end of chapter four is dedicated to the overall meaning of the results of the case studies for an international exchange of protected area knowledge by presenting general features and prerequisites for an international and intercultural exchange. The Fields of Activity are characterised and implications for their transferability in terms of type of knowledge and cultural sensitivity are outlined.

Chapter 6 sketches the most important conclusions and presents guidelines and recommendations to optimize the exchange of knowledge in the field of protected area management. Additionally, its potential contributions to the global efforts to develop global training structures are discussed.

Chapter 7 contains references, acronyms and abbreviations as well as detailed information on workshops and interviewees. The last chapter provides basic information on the authors of this book.

2 SUSTAINABILITY, CULTURE AND KNOWLEDGE

The following four subchapters will introduce the reader to the concepts of sustainability, knowledge, culture and knowledge transfer. In the last chapter, these concepts are interlinked and related to an intercultural exchange of knowledge in the field of protected area management.

2.1 Sustainability and protected areas

The term sustainability has certainly become a buzzword during the last few years (GROBER 2010) but its actual meaning is not always evident. Understanding sustainability knowledge primarily requires a comprehensive understanding of the term sustainability. Therefore, in short, we summarise the history of the term, explain the most common theoretical approaches and create a direct link from sustainability to protected areas.

2.1.1 Definition of sustainability

Carl von Carlowitz first mentioned the term sustainability as a concept of forestry in 1713. He was working on the "sustainable use of forests" to counteract the decline in forest coverage in the 18th century. Ever since, the term has closely been linked with the "preservation of natural resources for the generation coming."

Several milestones in the 20th century shaped the understanding of knowledge (HÜBNER 2012). A starting point was the publication of *"Silent Spring"* by Rachel Carson in 1962, which drew the attention of the public to the impacts of industrial development. As a result of the report *"The limits of growth"* (MEADOWS et al. 1972) and the oil crises in the 1970s, a resource component was added to the understanding of sustainability.

In 1980, sustainability appeared in the field of protected area management for the first time when the "World Conservation Strategy" introduced a "sustainability concept" (IUCN/UNEP/WWF 1980).

The most common definition of sustainability was presented in 1987 in the report of the World Commission on Environment and Development (also known as the Brundtland Report), which defined sustainability as *"development that meets the needs of the present without compromising the ability of future generations to*

meet their own needs" (WCED 1987). This report integrated the term "justice" into the understanding of sustainability.

The Rio Declaration of the Earth Summit in Rio de Janeiro in 1992 was focusing on the precautionary principle and defined a right for sustainable development. In the course of the 1990s, climate change gained importance in the sustainable development discourse.

By now, the term sustainability has conquered all aspects of human society although its meaning can be interpreted in a very broad sense. Sustainability is part of almost every superior strategy starting from the municipality level (Agenda 21 processes) and national strategies (e.g. Austrian Strategy for Sustainable Development) reaching to international treaties and conventions (e.g. Rio Declaration, European Strategy for Sustainable Development, Convention on Biodiversity).

In 2001, Sustainability Science emerged as a new academic discipline (KATES et al. 2001). It is an inter- and transdisciplinary field of research, seeking permanent discourse with the public to address the new challenges of the 21st century (HÜBNER 2012).

2.1.2 Sustainability models

The triangle model is the most frequently used model to explain sustainability. It was strongly shaped by the World Bank (SERAGELDIN 1994) and refers to three equally ranked dimensions: Ecology, Economy and Society (Figure 2). According to this model, sustainable development activities shall equally take into account all three dimensions. These dimensions are often also called the pillars of sustainability.

The integrative "*sustainability egg*" model is less known. It was simultaneously developed in the field of regional development (BUSCH-LÜTY 1995) and in the field of nature conservation (IUCN 1994 in: GUIJT & MOISEEV 2001; IDRC 1997). The model takes into account the interdependence of all dimensions and therefore provides a more integrative approach towards sustainability. Economy is seen as part of the social system. The natural environment or global ecosystem is of superior priority because it represents the basis of every human activity (BUSCH-LÜTY 1995). Sustainability and stability are achieved as long as none of the inner systems outgrows the outer system. This reveals limits of growth, whereas the sustainability triangle suggests that eternal growth is possible (HELLEIN 2010).

The philosophy behind the "sustainability egg" is in accordance with objectives and visions of protected areas: The ecological dimension sets the frame. Within this frame, societal and economical goals are pursued as long as they do not contradict ecological goals. Economy or society cannot outgrow the ecological system. Hence, this model represents an understanding of sustainability also shared by IUCN.

Figure 2: The sustainability triangle and sustainability egg
Authors' draft based on Tremmel (2003) and IUCN (1994)

The effort to adequately address all dimensions may create conflicts, which becomes visible in the everyday work of protected area managements. The dealing with these issues forces the management to find new solutions. Consequently, this leads to sustainable innovations in many protected areas (JUNGMEIER 2012).

2.1.3 Sustainability and gender

Sustainability and gender mainstreaming are closely interwoven issues. The definition in the Brundtland report demands not only intergenerational justice but also intra-generational justice (HAUFF 1987). This explicitly addresses the justice between all social groups, in particular minorities and women (VINZ 2005). Consequently, Agenda 21 also draws special attention to the roles of different social groups in sustainable development and their involvement.

VINZ (2005) reasons that in developing countries where traditional distribution of roles prevails women are often particularly affected by the consequences of an unsustainable use of resources (e.g. water fetching, fuel wood gathering). Marginalised social groups are often also economically marginalized. Accordingly, they often depend more on the use of natural resources and show different needs.

If taking the demand for intra-generational justice serious, the involvement of all social groups is an indispensable prerequisite for sustainable development. It should form an integral part throughout all sectors (VINZ 2005).

In 2003, the World Parks Congress was dedicated to the topic "Benefits beyond boundaries" (IUCN 2005). The proceedings of this congress since then have acknowledged the veritable role of gender equity in the management and conservation of protected areas. Gender equity is mentioned as an important emerging issue for the 21st century to achieve equitable benefit sharing and more effective governance systems. It is an important cross-cutting theme to reach sustainable develop-

ment in protected areas. However, whereas gender is explicitly addressed, other aspects of diversity (e.g. age, different social groups, cultures, ethnic groups or professionals with a more diverse background) are not really addressed.

2.1.4 Sustainability and protected areas

Almost all protected areas somehow address or try to address sustainability. Particularly, at the local level protected areas play an important role for implementing sustainable development. Biosphere Reserves, for instance, are considered to explicitly be *"model regions for sustainable development" (*UNESCO 1996*)*. In biosphere reserves, environmental conservation, regional development and the improvement of the socio-cultural system shall equally be guaranteed.

According to chapter 15 of Agenda 21, biodiversity is considered to be the basis for sustainable development. Climate change, depletion of natural resources, loss of biodiversity, water scarcity and rapid population growth are among the major challenges for mankind. Hence, new, more sustainable approaches have to be found and to be tested in practice.

Modern protected areas are regarded to be model regions for sustainable development. IUCN (2005) defines protected areas as cornerstones of sustainable development. As a positive example, they shall stimulate and activate even surrounding areas. The PAN Parks Foundation (Protected Area Network), for instance, seeks to integrate wilderness development and regional development through sustainable tourism and certified wilderness areas (PAN PARKS 2007).

Protected areas can possibly represent a bridge needed between the theoretical discussion and practical implementation of sustainability. These institutions are able to apply theoretical approaches in practice. However, diverging interests of local stakeholders force the management to find viable and innovative solutions to take all interests into account. Thus, management bodies often have a large amount of knowledge about practical and theoretical implementation of sustainable development. They are drivers for innovation and sustainability particularly in rural areas (JUNGMEIER 2012).The achievements of protected area management units can often be considered achievements for a more sustainable society (IUCN 2005). To share this knowledge and the experiences of individual protected areas, a worldwide network tries to develop and maintain efficient structures and databases.

In the field of development cooperation, protected areas are often subject to projects to instigate sustainable development (e.g. LANGE et al. 2012; LANGE & JUNGMEIER 2011). Efficient protected area managements and protected area systems are considered important for a long-term sustainable development and, thus, frequently subject of development projects (e.g. ARPA- Amazon Region Protected Areas; SPDASE – Sustainable development of the protected area system of Ethiopia) or support short- and long-term training in the field of protected areas (e.g. MSc Programme Management of Protected Areas in Klagenfurt or Madrid).

2.2 Knowledge and protected areas

Knowledge can be considered the most fundamental resource for a society. The ability to deal with local stakeholders, to develop programmes, to realise and plan measures and to link theory and practice are all considered knowledge-based activities. Hence, knowledge and its management are of great importance for protected area management bodies. Unlike material resources, "knowledge" shows some unique features such as:

- Using the resource of knowledge does not consume it
- Sharing knowledge does not reduce it
- Knowledge can be increased on its own terms
- Knowledge cannot be passed instantaneously

2.2.1 Definition and introduction to knowledge

The Greek philosopher Plato provided one of the first and still famous definitions of knowledge when he stated that *"knowledge is justified true belief."* Ever since, the concept of knowledge has been a fundamental issue for generations of philosophers and thinkers. However, the rather philosophical approach to knowledge is difficult to apply for knowledge processes in organisations like protected area management units. The following definition is helpful for a better understanding:

"*Knowledge encompasses the entity of skills and abilities, which individuals use for the solution of problems. This encompasses theoretical knowledge as well as rules of everyday life and guidelines. Knowledge is based on data and information. However, contrary to data and information, knowledge is always attached to persons" (*PROBST et al. 2006*).*

This definition comes close to the understanding of knowledge in the context of this study. However, a wider definition might be more appropriate because knowledge is not only confined to the ability to solve problems but also to the ability of accomplishing different tasks and dealing with different situations.

In the case of protected areas, this knowledge encompasses the knowledge of the protected area region, knowledge of local culture and local people as well as knowledge of natural processes, biodiversity, management processes and tools and their application. The combination of theoretical knowledge and information with its immediate application in reality makes knowledge of protected areas particularly valuable.

The increasing importance of knowledge

The European society developed from a society dominated by agriculture to an industry-based economy, and further to a knowledge-based society. Labour and

land have constantly lost economic importance over the last 150 years, whereas the value of knowledge has rapidly increased as factor for production *(*Figure 3*)*.

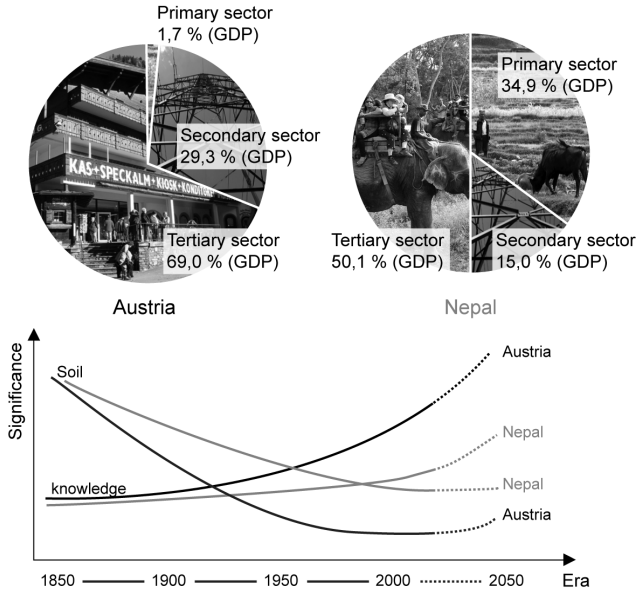

Figure 3: Knowledge society in Austria and Nepal
Authors' draft based on Weiss (2005)

Knowledge plays an increasingly important role in our everyday lives. The knowledge of mankind grows exponentially and doubles every four years. However, this also means that knowledge becomes outdated more quickly. SCHÜPPEL (1996) already realised this process in the mid-90s when the author defined the half-life of knowledge (Figure 4). The spreading of the internet and the fast development of technology might even have accelerated this process.

With this obviously outdated figure, we would like to underline the fact that society and also protected areas have to focus a more comprehensive understanding of different tasks rather than on simple fact knowledge. Due to a rapid development of technologies, after some years, knowledge gained in school is outdated. Static knowledge is not sufficient anymore; people rather have to constantly acquire new abilities and competences.

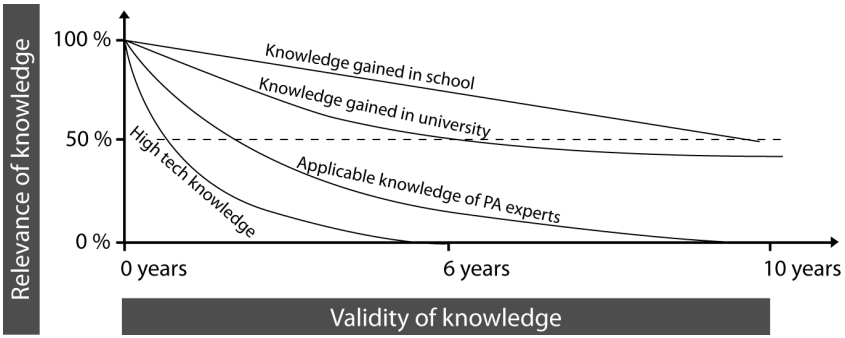

Figure 4: The half-life of knowledge
Authors' draft based on Schüppel (1996)

2.2.2 Categorization of knowledge

Given the fact that knowledge as a term is rather diffuse, there is a need to define different types of knowledge and ways of categorizing knowledge (RABRENOVIC 2001). Figure 5 provides an overview of frequently used types of knowledge and their characteristic features.

Implicit and explicit knowledge

The differentiation between implicit (tacit) and explicit knowledge is very common. Tacit knowledge is always subjective and bound to individuals. It is the knowledge a person has acquired in the course of his or her life and encompasses the entity of experiences and know-how (e.g. dealing with specific situations or reaction strategies) which is influenced by education, personal experiences and social or cultural context. However, tacit knowledge often is just there – and the people are not even aware of this type of knowledge, which makes it difficult to exchange it. A successful way of transferring implicit knowledge is the tutor-apprentice relationship or, more generally, the transfer of knowledge by transferring people (e.g. from an old to a new branch, see SANCHEZ 2004). Basically, tacit knowledge is a knowledge which leaves an organisation every day when the person holding this knowledge goes home from work.

Explicit knowledge, on the contrary, is tangible. It is a more or less objective and available knowledge. It is codified and can be spread rather easily because the context is made explicit and becomes documented. This kind of knowledge is found in publications, databases or documents. According to some authors, in western societies, explicit knowledge is ranked higher than implicit knowledge because it is scientifically sound, logic and objective (YANOW 2004). According to YANOW (2004), this seems to be the prevalent attitude of most organisations which

prefer theoretical knowledge to local contextual, tacit knowledge, especially if tacit knowledge is found at lower hierarchical levels.

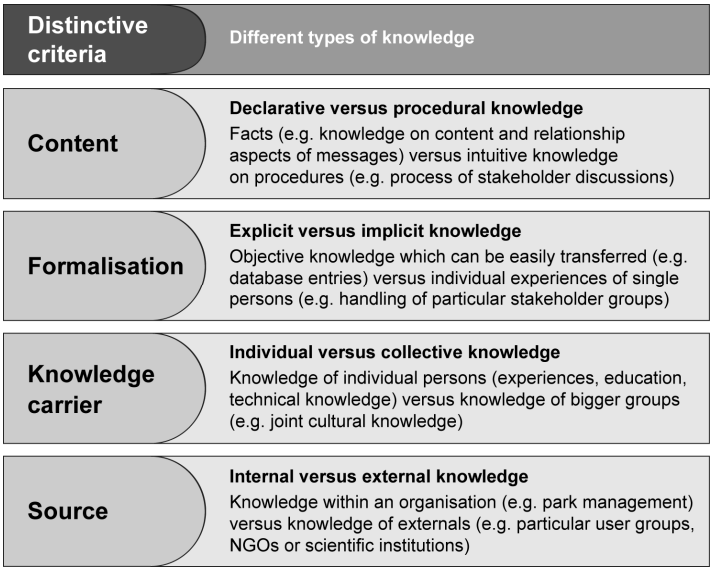

Figure 5: Types of knowledge and their characteristics
Authors' draft based on Rabrenovic (2001)

Individual and collective knowledge

Individual knowledge is always bound to individual persons. It is the entity of tacit and explicit knowledge of a person. The individual knowledge of an entity's members forms the fundamental knowledge resource of every organisation. However, it is also the knowledge that is lost if the person leaves the organisation (e.g. retirement).

Collective knowledge is less volatile. The total knowledge of an organisation is more than just the aggregation of the individual knowledge of its staff. Collective knowledge is not bound to persons but to organisations or enterprises. It is knowledge of how things are done, organisational structures and procedures as well as digital artefacts such as weblogs, Wikis or intranet (KIMMERLE et al. 2010).

Internal and external knowledge

The entity of individual and collective knowledge of an organisation is considered internal knowledge. This knowledge is continuously available in an organisation. Furthermore, there is still more existing knowledge of the organisation which is internally available. Especially in the field of protected areas, a lot of knowledge

is not directly available to the management. Local experts and residents dispose of a large amount of knowledge of the region (e.g. traditional land-use techniques, local history). Numerous protected area management bodies work closely together with NGOs, political institutions, research institutions and consultants. The knowledge they have of a protected area is not as easily accessible for the management as internal knowledge. This underlines the important role of networks and umbrella organisations as they may support the access to external knowledge.

Declarative and procedural knowledge

This differentiation refers to the content of knowledge. Declarative knowledge is basically knowledge of facts (e.g. *"I know that this tree is named Pinus cembra.").* Procedural knowledge refers to the knowledge of processes and of how handle things (e.g. *"I know how to plan and implement an action plan for alpine pastures.").* People often dispose of a lot of procedural knowledge they are not even aware of (e.g. driving a bike).

Multidimensional knowledge

Knowledge can never be assigned to a single type of knowledge. Taking a look at the *"knowledge cube"* (MITTELMANN 1999 CIT. IN SCHMEICHEL. 2003, P. 31), it can be seen that knowledge types can be combined in any way. The implicit-explicit part describes in which form the knowledge is present, the collective-individual perspective describes who has this knowledge and the internal-external dimension describes the location of this knowledge (Figure 6).

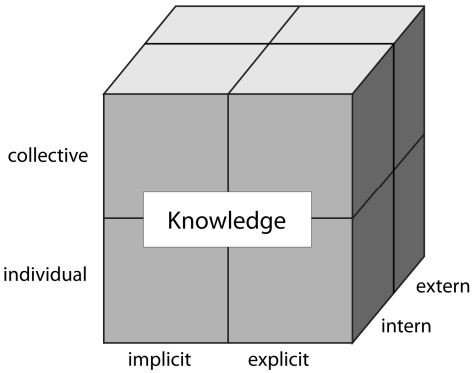

Figure 6: Knowledge cube
Authors' draft based on Mittelmann (1999, cit. in Schmeichel 2003)

When analysing the existing knowledge of organisations, this cube may facilitate the categorization of knowledge for a better understanding, how to access it, where to find it and how to share it.

2.2.3 Information and knowledge

Information and knowledge are terms that are often used as synonyms. The "knowledge ladder" (NORTH 2011) differentiates between knowledge, information and competence (Figure 7). Competence is considered the highest level.

According to AUER (2007), the educational system provides knowledge only up to the "knowledge level." A higher level of knowledge can only be achieved if knowledge is combined with practical experience. Similarly, knowledge and information are considered explicit and easier to share, whereas the higher levels which need practical experience are considered to be implicit.

The knowledge ladder can also be applied to the tasks of protected area management bodies (Figure 7). The Fields of Activity as defined in chapter 2.5 can be considered competences because they go well beyond the explicit knowledge level. They require the combination of explicit knowledge, practical experience and individual expertise.

						competence	Comprehensive knowledge of the development, preparation and realization of a mangement plan for an endangered species
					actions	plus procedure	Realization of planned actions; e.g. the protection of a breeding habitats at risk
				know-how	plus motivation		Technical, organizational and individual knowledge about the practical implementation; e.g. the application of different tools
			knowledge	plus application			Root cause analysis and development of actions and measures; e.g. regulations, change in land use, reintroduction of species
		information	plus context, experiences, expectations				Analytical combination and evaluation of the data, e.g.: determining the state of preservation, preparation of time series
	data	plus meaning					Systematic aggregation of raw data; e.g. Inventory of breeding birds, grid or habitat mapping
signal	plus syntax						Documentation of individual information, e.g. proof of breeding of a specific species, location, photo-documentation
Observation of an animal at a specific place	Linking data with other observations and documented locations	Vulnerability, range of species	Combining with existing knowledge about habitat requirements	Knowledge about actions and measures for the improvement of habitat	Coordination, involvement and support of stakeholders	Knowledge about the realization of action plans and measures	For Example

Figure 7: Knowledge ladder – Practical example
Development of a species-based management plan (FoA-11)
Authors' draft based on North (1998)

2.2.4 Knowledge, gender and diversity

Knowledge is strongly bound to persons and is closely linked with their origin, previous experiences, values, lifestyles and priorities (GRASENICK 2012). Consequently, different social groups as well as women and men have been acquiring different skills and varying knowledge. In a society turning into a knowledge-based society, managers and researchers are increasingly aware of this. The field of "diversity management" tries to provide tools to guide companies and organisations to make use of this knowledge and emphasises the value of the knowledge of different social groups. Diversity management theory emphasises that *"the insights, skills, and experiences employees have developed as members of various cultural identity groups are potentially valuable resources."* Diversity is considered a *"resource for learning and change"* (ELY & THOMAS 2001).

The Fields of Activity for protected areas (Chapter 2.5) show that many of the diverse tasks of protected areas could make use of different perspectives of different social groups and improve the planning and management of protected areas. Figure 8 provides a general overview of all FoAs, for which increased consideration of gender and diversity is assumed to be necessary and beneficial.

Especially in developing countries, there is often a traditional division of everyday activities among women and men and different social groups resulting in different implicit knowledge based on their everyday activities and different needs (VINZ 2005; KHADKA & VERMA 2012; CHETTRI et al. 2012). Women, for instance, are often in charge of fetching water, of maintaining a garden or collect medicinal herbs, which are issues possibly important for protected area management (e.g. water issues, regional development, traditional varieties of plants, sustainable resource use). A similar knowledge division applies to different social, often marginalised groups according to different ethnic or social groups with a varying economic profile (e.g. low and high economic profile people). All these groups have different needs and living environments resulting in different knowledge which can be valuable for protected area management.

An increasing diversity of tasks in protected area management needs a large diversity of competencies and social backgrounds requiring the involvement of more different social groups (KHADKA & VERMA 2012).

Field of Activity	Fundamental Not relevant	Details
Development of Idea & Vision		Integration of ideas and perspectives of all social groups
Feasibility Check		Technical step
Communication & Participation I		Broad participation process including all social groups
Incorporation into PA-System		Technical step
Basic planning phase		
Planning Handbook		Planning process requires adressing of all groups
Communication & Participation II		Addressing all relevant social groups, selection of tools
Basic investigation		Technical step
Implementation Planning		Technical step
Detailed planning phase		
Designation & Establishment		Technical step
Mission statement/basic concepts		Integration of ideas and perspectives of all social groups
Ecosystem-based management plans		Social groups are differently affected by management
Design of economic programs		Defines who benefits, who is addressed and supported and how
Specific planning		Technical step
Implementation Phase - Internal processes		
Personnel/Organizational development		Critical issue: Diversity in the composition of staff and advisory boards, equal treatment
Evaluating management effectiveness		Technical step
Financing		Technical issue, but critical issue when it comes to the distribution of resources
Impact assessment and limitation		Technical issue
Data & information management		Adequate tools, methods and access for all social groups
Implementation Phase - External processes		
Research setting and monitoring		Technical issue, but critical when defining content and priorities in research (e.g. addressing gender/diversity issues in PA, support of socio-economic studies)
Commmunication & Participation III		Critical issue, equal participation has to be ensured, but mostly is not in reality
Development of protected area region		Critical issue: Who gets supported, what is focused on, which stakeholders are favoured, who obtains resources?
Co-operation design		Medium important, related to institutional cooperation, but critical when it comes to involvement of organisations representing marginalized groups
Information, education, interpretation		Critical issue, requiring diversity-sensitive information and education, education main issue for marginalisation
Visitor management and infrastructure		Very important: different social groups prefer different offers and may require different infrastructure
Marketing & public relations		Medium important
Law enforcement		Medium important
Conservation measures		Social groups may be differently affected because they have different tasks; marginalised groups are more dependent on natural resources

Figure 8: Importance of diversity for Fields of Activity
Expert assessment; points = main focus; line = range of relevance

2.2.5 Knowledge processes

NONAKA & TAKEUCHI (1995) developed a model explaining knowledge processes and interdependencies between implicit and explicit knowledge (Figure 8). It tries to explore the processes how individuals and groups transform and share different types of knowledge.

According to Nonaka and Takeuchi, there are four relevant processes of transforming and sharing knowledge:

- *Socialisation (tacit to tacit knowledge)* refers to the direct exchange of knowledge between the members of an organisation through social interaction. It involves sharing experiences with others, observation, imitation or just coffee talk. The best example might be the tutor-apprentice relationship.
- *Externalization (tacit to explicit knowledge)* refers to the documentation and codification of individual tacit knowledge mainly through dialogue or written documents. Individuals are able to articulate their knowledge through models or analogies in a way that others can understand it. By doing this, the individual knowledge is made available to other members of an organisation.
- *Combination (explicit to explicit knowledge)* refers to the linking of different externalized knowledge to more complex structures (e.g. databases, books…). The combination and synthesis of before unrelated knowledge may support the creation of new knowledge.
- *Internalization (explicit to tacit knowledge)* often refers to what is meant by "learning by doing." This process occurs through diffusing and embedding new knowledge and finally becomes part of the tacit knowledge of individuals. Henceforward, knowledge is used, extended and recombined with existing tacit knowledge of individuals.

This is the most frequently applied theory in the field of knowledge management. However, it is strongly influenced by managerial literature and there are some critics because this model is said to simplify the complex process of externalization of knowledge (EHMS 2010). The interaction between protected area staff, external organisations, local organisations and local residents displays all of the above mentioned processes as defined by NONAKA & TAKEUCHI (1995).

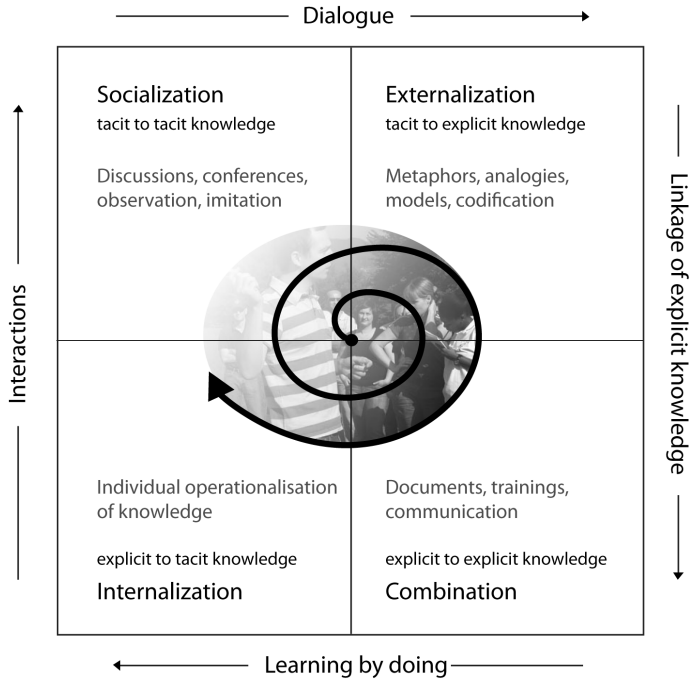

Figure 9: Knowledge spiral
Authors' draft based on Nonaka and Takeuchi (1995)

2.2.6 Categorization of knowledge of protected areas

Protected area management is basically knowledge work, always related to some dimension of sustainability. Knowledge-based processes are the basis for the work of protected areas.

The multitude of different tasks of protected areas requires an equal multitude of knowledge. Thus, many protected areas generate, apply, transfer and store knowledge which is mostly directly linked with sustainable development. There is no other institution worldwide which has such an amount of specific sustainability knowledge even though a protected area is not inherently sustainable.
Sustainability knowledge in protected areas is present at two different levels:

- Knowledge of the protected area management body. This is that kind of knowledge which is needed for sustainable development of the region and the successful management of the area. Basically, this can be considered internal knowledge.

- Knowledge of the protected area region in the sense of "Learning Regions" (MADER & MARCHNER 2009). This is the entity of knowledge which is present in the protected area region. For protected area management bodies, this knowledge is not completely available and can be considered as part of external knowledge.

This study focuses on internal knowledge of protected areas and in particular on organisational knowledge of the management bodies which are represented by 27 Fields of Activity (FoAs). Knowledge of the region is absolutely relevant for protected areas but hardly tangible and not topic of this publication.

MADER & MARCHNER (2009) describe several core processes when dealing with knowledge: 1.) Identification of knowledge needed 2.) Acquisition of knowledge 3.) Generation of knowledge 4.) Use or application of knowledge 5.) Storage of knowledge. These basic processes can also be found in most protected areas.

Generation of sustainability knowledge: Although not explicitly defined, one of the major activities of protected areas is the accumulation and generation of knowledge.

The most prominent knowledge performance of protected areas is the combination and synthesis of knowledge of sometimes very distant knowledge fields. This does not only refer to different disciplines but also to different types of knowledge (e.g. combination of implicit regional knowledge with explicit academic knowledge). Protected areas are exposed to different life worlds, which leads to the creation of innovative approaches. Knowledge of sustainability can be generated in several ways:

- *The synthesis of practical know-how or experiences and of theoretical, academic and scientific knowledge:* Protected area management bodies adapt theoretical knowledge to comply with local conditions. Through involvement of local stakeholders and the practical application of theoretical approaches, new knowledge is created.
- *The synthesis of local knowledge with international and global experiences:* Protected area management bodies interact with international organisations (e.g. IUCN, WWF, UNESCO), international conventions (e.g. CITES, CBD) and other protected areas. Knowledge generated on a local level is connected with experiences from other regions creating internationally available meta-knowledge. Some international programmes such as the UNESCO MaB-Programme or WCMC try to instigate and manage such exchange processes.
- *The synthesis of "old" and "new" knowledge:* Protected area management bodies sometimes rediscover traditional and almost forgotten local knowledge and use it in a new context (e.g. marketing and promotion of non-timber-

forest products (NTFP) or using old production techniques and tools for developing attractions for tourists).

- *The synthesis of knowledge of different disciplines and subjects (inter- or transdisciplinary synthesis):* Protected area managements fulfil a bridging function in the region and work together with people from different disciplines. Good examples are tested approaches for ecosystem-service payment, the realisation of ecotourism projects or the marketing of organic agricultural products, which all combine ecology with economy.

Consequently, protected area management activities complies with the "*mode"* science, a new way of producing knowledge as proposed by GIBBONS et al. (1994). According to BRANDNER et al. (2006), this is *"application-oriented, transdisciplinary, heterogeneous und antihierarchic."* Short-term research teams from different disciplines work together with practitioners on a specific problem. Thus, the knowledge-generating process becomes reflexive and accountable to society. Problem statements deal with everyday issues (BRANDNER et al. 2006).

Application of sustainability knowledge: Protected area management bodies are direct users of the gained knowledge. New knowledge is created out of practical considerations and immediately tested in reality. If new theoretical knowledge is integrated into management plans, measures, projects or services, it is immediately visible whether it works or not. Working in and for a protected area is a permanent way of putting theory into practice.

Transfer of sustainability knowledge: One of the major functions of many protected areas is the provision of environmental education offers for visitors, schools and other stakeholder groups.

Thus, the management bodies sometimes serve a regional education institutions and fulfil the role of a "bridging organisation" because they transfer knowledge from outside the region (e.g. university cooperation, cooperation with government or other protected areas) into the region and may even transfer it to local residents (e.g. by events presenting best practice examples for regional development). The other way round, protected areas increase their regionally adapted knowledge every day and work together with local residents who may share their regional knowledge. This specifically regional knowledge is shared with other protected areas or organisations outside the protected area region (e.g. reports, studies, conferences).

Documentation and archiving of sustainability knowledge: Most protected areas dispose of an at least minimal documentation of their areas. They also frequently publish reports on measures, activities, actions and basic data. This documentation performance is often defined by guidelines and somehow standardised (e.g. IUCN

reporting, Natura 2000). Many regions try to preserve knowledge of a region actively (in the sense of MADER & MARCHNER (2009): select, save, update) by establishing libraries, databases or archives for photos or documents.

2.2.7 Knowledge of protected areas as sustainability knowledge

In the preceding chapters it has become obvious that what most of the work-protected area management units do is almost always knowledge-based and somehow connected with sustainability issues.

Concluding the first chapters, we assume that protected areas are not always sustainable in practice but their vision and objectives are closely related to sustainability. Protected areas prioritise nature conservation, which seems contradictory to the idea of three equal pillars of the sustainability triangle. However, if thinking of the sustainability egg model, the objectives of protected areas are in accordance with sustainability.

The fields of activity as sustainability knowledge

The Fields of Activity form the basic structure of the MSc. Programme "Management of Protected Areas" in Klagenfurt and were developed in an EU-funded project (JUNGMEIER & VELIK 2005). The Fields of Activity (FoA) are arranged in a life cycle explaining the genesis of a protected area and its management in three major phases and encompasses 27 different FoAs (chapter 2.5). Basically, the Fields of Activity represent a set of skills, tasks and competences which are considered to be necessary for a comprehensive protected area management and for sustainable protected area planning (GETZNER et al. 2010). As they equally address ecological, economic and socio-cultural issues, the management of a protected area achieving to address these issues can be considered sustainable.

2.3 Culture and protected areas

Protected areas are cultural achievements. They are man-made institutions shaping and preserving natural and semi-natural areas. The management has to adapt to the local situation as well as to the natural environment. Consequently, dealing with protected areas means dealing with different cultures, different approaches and attitudes, different values and norms and different objectives. There is an inseparable relation between protected areas and local cultures, which inspire and influence each other.

However, international frameworks (e.g. IUCN-management guidelines) provide globally valid, common aspects of protected area management, which are usually adapted to the national or local context (differing interpretation, approaches, understandings or particular categories). Consequently, protected area systems are complex, multidimensional and open systems with no clear system-boundaries. Various cultures shape the work of protected areas at different scopes.

2.3.1 Definition of culture

The term culture is derived from the Latin words *"cultura"* (agriculture, cultivation, tilling) or *"colere"* (inhabit, till, cultivate).The meaning of the word culture is closely related to farming (HAMMEL 2007).

The long history of this term resulted in constantly changing and adapting definitions of culture depending on the respective period of time or discipline. In 1952, Kroeber and Kluckholm found 175 definitions of culture (HAMMEL 2007). Depending on context and specific objectives, it can be useful to develop an appropriate definition of culture (HAUSER & BANSE 2010). Defining culture is so challenging because of its paradox characteristics (DEMORGON & MOLZ 1996):

- Continuity and change: Culture preserves and upholds cultural heritage and traditions, whilst new influences, techniques and practices are constantly integrated.
- Standardisation and differentiation: Culture describes a common set of values, norms and behaviours but there are also individual variations and subcultures.
- Openness and boundaries: Cultures are open to other cultures, whilst also forming a boundary of a community and defining group belonging.

According to BOLTON (1997) there are three fundamental approaches to culture:

- Materialistic cultural theories referring to artefacts and visible achievements of a culture (cultural landscapes, architecture)

- Mentalistic cultural theories referring to norms, values, and traditions
- Functionalistic cultural theories referring to: ways of communicating

The complexity and multidimensionality of culture requires an integrative approach and combination of these mentioned approaches (BOLTEN 1997). HAUSER & BANSE (2010) emphasise that culture is an evolutionary process of social groups to improve life and survival by adapting to the environment (nature, economy, society), which comes close to the broader vision of protected areas.

Consequently, culture is understood in a way as defined by NÜNNING (2009), who stated that culture is *"the world and its spiritual or material goods and products which are created by man through adapting and shaping nature by means of structured processes and techniques."* Similarly, Edward Burnett Tylor (1832–1917) defined culture as *"…that complex whole which includes knowledge, belief, art, morals, law, costumes, and any other capabilities and habits acquired by man as a member of society"* (HAMMEL 2007). This comprehensive understanding of culture integrates ways of living, such as traditions or customs, ideological or normative prerequisites as well as artificial products and artefacts like buildings or anthropogenic landscape elements.

However, addressing transcultural exchange issues requires a more functionalistic understanding of culture as proposed by Hofstede, who defines culture as *"the collective programming of the mind, which differentiates the members of a group or category from people of another group"* (HOFSTEDE & HOFSTEDE 2006). This approach sees culture as a set of shared characteristics of groups and emphasises the role of differences and communalities for communication between different cultures, which is fundamental for understanding knowledge exchange of protected area professionals of differing cultural backgrounds.

2.3.2 Theoretical approaches to culture

According to FISCHER & FURRER-KÜTTEL (2009), culture is a complex multidimensional and heterogeneous phenomenon. It consists of multiple layers which keep interacting and are interdependent. Consequently, each individual is member of various cultures (e.g. national culture, belonging to certain social or ethnic groups). Individuals are never monocultural (DEMORGON & MOLZ 1996).

The iceberg model

HALL (1976) developed the iceberg model to illustrate this multidimensionality (Figure 10). According to Hall, culture consists of a visible and tangible part (language, customs, clothing, music, food…) and a larger, invisible and intangible part (norms, values, basic assumptions).

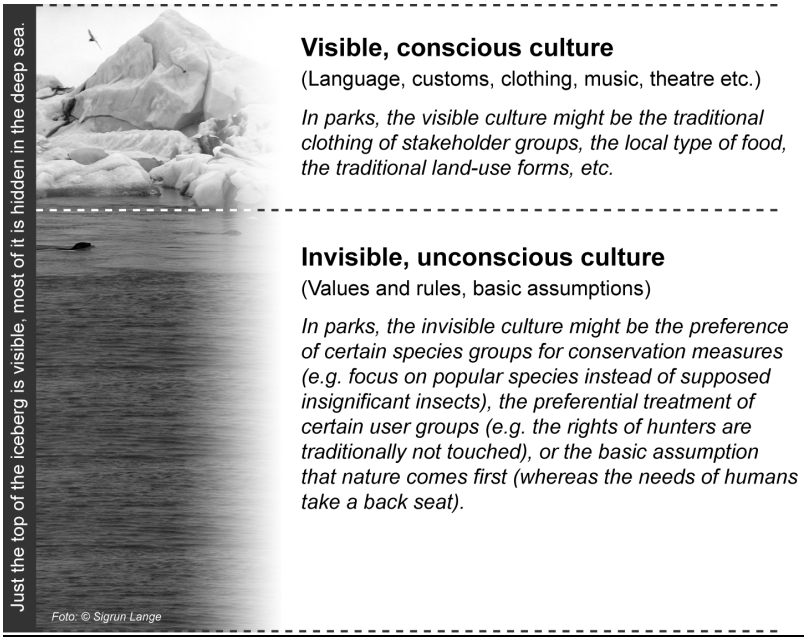

Figure 10: Iceberg model
Authors' draft based on Hall (1976)

This model shows that only parts of a culture are visible. By superficial observation only, no understanding of cultural characteristics is possible.

Another model for the illustration of cultural complexity is the culture "onion" provided by SPENCER-OATEY (2000 cit. in DAHL 2000). Additionally, this model takes the interconnectedness and multidimensionality of culture into account by creating several layers. Each layer determines the characteristics of the following layer. Basic assumptions and values form the inner core of every culture. These values define social norms, attitudes and moral concepts. Social, economic and political systems form the next layer and are based on the moral concepts of the underlying layer. The outer layer finally displays the visible parts of society like products, artefacts, behaviours or traditions.

According to SPENCER-OATEY (2000 cit. in DAHL 2000), this represents an important foundation for intercultural communication. She points out that the underlying layers of this model do not only characterise a culture but provide the basis for the interpretation of information. Culture does not only have a behavioural role but also an interpretive role (DAHL 2000).

Communication as fundamental feature for characterising culture

Cultural dimensions serve to identify and compare culture-specific thought patterns in order to enable a process of self-reflection, understand cultural characteristics and improve intercultural communication. This may raise the awareness for cultural differences and communalities.

However, there are a few basic limitations of these dimensions that should be considered beforehand. There is always the risk of stereotyping a culture and the risk of developing a homogenous and static view on culture (FISCHER & FURRER-KÜTTEL 2009). Every comparison of cultures requires stereotyping. If working with cultural dimensions, people have to be extremely cautious and very aware of this phenomenon (BOLTEN 1997). Dimensions mostly refer to national cultures.

The cultural dimensions of Hofstede

The Dutch anthropologist Geert Hofstede provides a frequently used approach to culture. He identified five cultural dimensions which he considers fundamental to understand and compare different cultural groups (HOFSTEDE 1998; 2012).

1. Power distance defines the extent to which the less powerful members of organisations and institutions (e.g. the relationship between staff and director of a PA) accept and expect that power is distributed unequally. A high power distance is an indicator for hierarchical structures where decisions are usually made top-down. Low power distance indicates that a culture is characterised by flat hierarchies and participative decision-making structures.

2. Uncertainty avoidance refers to the willingness of a group to take risks and to leave one's personal feel-good zone. A high density of state regulations and security measures are usually an indicator for high uncertainty avoidance. A practical consequence of high uncertainty avoidance is a strong opposition against changes. These cultures also tend to have a large set of regulations and a strong bureaucracy.

3. Individualism and Collectivism refer to the preference of cultures to take care of themselves and their close family members. In collective systems, a tight social network exists in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioned loyalty. In individualistic systems, however, people are fully responsible for their own lives. They tend to refer to *"me"* whereas collectivist cultures preferably use *"we"*.

4. Masculinity and Femininity describe several characteristics which Hofstede calls either masculine or feminine. Competitive societies based on personal achievements, heroism or material rewards for success are considered more masculine. Societies that prefer cooperation, consensus-based decision and modesty and tend to care about the quality of their lives are considered to be more feminine.

5. Long-term orientation is an amendment to the original four dimensions and refers to the time-related orientation of cultures. Long-term oriented cultures think on the long-term benefits and implications of decisions. Objectives are pursued persistently and short-term needs of individuals are given less priority.

Next to Hofstede, there are other frameworks providing cultural dimensions which partly overlap with the cultural dimensions of Hofstede. These concepts were not observed for this research. According to Hall (HALL & HALL 1990), communication is the fundamental characteristic of culture. Hall distinguishes four different communication types of which two are outlined as follows:

The differentiation between *"high context and low context cultures"* is considered important. Context refers to information which has to be attached to a message by the receiver to understand the meaning. Arabic or Asian cultures for instance are societies usually based on close family relationships. Members of these cultures tend to send only little information in an explicit (spoken) way because the receiver has all the relevant context information. For outsiders, it is difficult to decipher the meaning of the explicit message. "Western" cultures are considered low-context cultures in which people tend to separate personal and professional relationships. Receivers of a message expect to obtain all necessary background information along with the basic message.

The differentiation between *"polychronic and monochronic cultures"* refers to a different understanding of time. Monochronic cultures (e.g. European cultures) tend to do one thing at a time whereas polychronic cultures (most other cultures) focus on multiple handling of different tasks simultaneously.

TROMPENAARS (1993) developed a model consisting of seven cultural dimensions which partly overlap with the dimensions of Hall or Hofstede. However, the differentiation between *"neutral and emotional cultures"* (refers to the extent of which feelings are openly expressed) and between *"defuse and specific cultures"* (refers to preferences for straightforward or indirect communication styles). He also differentiates cultures by the way of how a social standing is defined in a culture (by birth, origin or the environment like caste systems or by, individual achievements like in the USA). Another cultural feature is *"Human-nature relationship"*, which defines how cultures deal with their natural surroundings (control nature or be part of nature).

The seven (+1) dimensions of Tylor

Edward Burnett Tylor (1832–1917) distinguished seven different dimensions which try to define the characteristics of a (nation-based) culture (HAMMEL 2007). This concept is strongly based on a national paradigm. However, reinterpreting his definition allows explaining much of the cultural influence on existing protected area systems because they also have mostly national borders as major system boundaries. However, local culture still remains included.

Additionally, an eighth dimension taking diversity and gender aspects and handling of different social groups into account was considered useful by the authors (Figure 11) because they of the importance of this topic in the context of protected areas (Chapter 2.2.4). All cultural dimensions are strongly interwoven affecting and may not be seen independently.

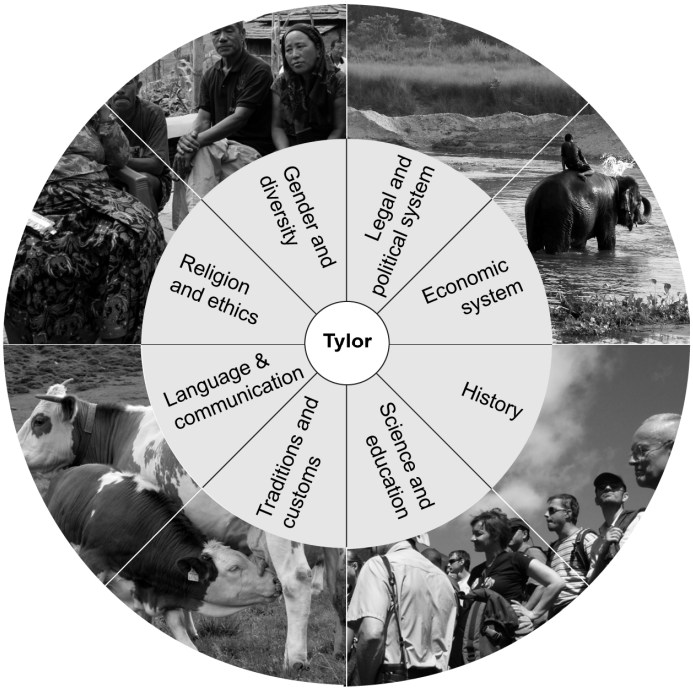

Figure 11: Cultural dimensions according to Tylor
Authors' draft based on Fischer & Furrer-Küttel (2007)

Dimension 1: Political and legal system

The political system of a country strongly shapes the national protected area system and comprises specific cultural elements.

The legal system is based on values, norms and beliefs of society which have been written down in the course of time. Laws shall provide a stable and predictable environment for society. Contrary to norms and traditions, laws can be enforced by the executive branch. However, even existing laws are often not executed or ignored. Protected areas are usually defined by national legislation.

The recognition of the legal philosophy, the congruence of written and common law and the common definition of property are important issues for protected area management bodies. They may vary significantly from culture to culture (e.g. the

definition of property in western societies according to which each piece of land is owned by someone contrasting nomadic societies with no clear land ownership structures).

Dimension 2: National and regional history

For protected areas, not only the national history is of specific relevance but also the history of people in the protected area region as they have been – and still are – forming the area. The long history of shaping cultural landscapes shapes regional identities as well (e.g. rice terraces on the Philippines, Ifugao, alpine pastures in the Hohe Tauern National Park). Many people-park conflicts are rooted in the past.

Dimension 3: Economic system

In the context of protected areas, the regional economy is of major importance. Predominant economic activities are crucial for understanding regional implications of protected area work. Primary-sector related activities and dependencies directly affect the work of a protected area management and its relationship with the local population. In western societies, only few people are directly engaged in farming because of a long process of intensification agricultural production. However, land is often used for recreation (e.g. skiing and hiking infrastructure). In developing countries, a large percentage of the population has to make a living directly of the land they use. This requires a fundamentally different approach to protected area management. The local availability of communication infrastructure and built infrastructure is closely interlinked with regional economic activities.

Dimension 4: Science and education

Science and education form the intellectual capital of a country. Educational systems vary a lot throughout the world although there are some efforts to define homogenous educational standards (e.g. the Bologna process and the ECTS-system in the European Union). The educational system determines which careers students can aspire and how accessible education is for people from different social groups.

Basic indicators for education standards for countries are usually the illiteracy rate or the percentage of university graduates. This is important for protected areas. Literacy rate may determine the methods, which can be used to involve local people, how information has to be designed to reach local people and which activities have to be realised (e.g. education programmes).

Dimension 5: Customs and traditions

Local or regional customs, typical dresses and traditions are the visible part of a culture. During numerous generations, traditions have been developed by human societies and the local practices and habits of individuals. They represent the collective memory and knowledge of a society. Traditions, festivals and ceremonies are closely interlinked with local history and religion. They are often influenced by a natural surrounding or climate (e.g. Thanksgiving after harvest).

Everyday habits may vary a lot between different cultures. This dimension also refers to different lifestyles and different ways to accomplish tasks and to deal with challenges. It is essential for protected area managements to know and understand the traditions and lifestyle of the local communities as thoroughly as possible.

Dimension 6: Religion, ethics and philosophy

Religion and philosophy are fundamental issues for cultures because they determine values and cultural norms. These issues define what is considered right or wrong and influence every aspect of culture in an often intangible way (Box 1).

Many cultures have distinctive and special places in their natural surrounding which have a superior spiritual meaning. There are holy forests that may not be entered. Distinctive mountain peaks are often considered as the home of gods (e.g. Mount Everest/Sagarmatha and Machapuchare in Nepal, Kaylash in Tibet). The climbing of such peaks may have been prohibited until today.

Box 1: How different religions view nature

Religion may even define the understanding of nature. Many animist religions consider nature as their gods (e.g. trees, animals). The Old Testament expresses a certain understanding of nature, *"And God blessed them, and God said unto them, be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth" (Genesis 1: 27-28).*

The Quran contains no direct reference to the view on nature in Islam. However, FARUQI (2007) states that *"the purpose of nature is for man to study nature in order to discover God and to use nature for the benefit of mankind."* This view is an interpretation of the idea that 'man' was placed on earth as God's representative (FARUQI 2007). In general, interpretations of Muslim scholars may vary strongly.

Contrary to these rather anthropocentric worldviews, Buddhism and Hinduism teach respect for all living things. Buddhism considers the act of killing for whatever reason unwholesome. Hindus believe that all things and beings are divine manifestations and interconnected. All things have a soul. Human beings cannot be seen separately from nature. Natural forces which influence everyday life are also considered divine manifestations. Hinduism promotes living in harmony with all living things as they are divine and part of the reincarnation cycle. Religious convictions may constitute a fundamentally different understanding of nature. This may have implications for work in protected areas in terms of local acceptance of measures or regulations set by the management.

Philosophy influences and determines basic paradigms of a society. The idea of permanent (economic) growth to increase the wealth of societies can be considered a basic philosophy or paradigm in western societies. Even though this belief in growth is sometimes criticized (e.g. "The limits of growth", MEADOWS et al. 1972), it influences and shapes politics and society. There are also societies or

cultures aspiring equilibrium (e.g. Yin and Yang philosophy in China symbolizing interdependence and equilibrium, Gross National Happiness Index in Bhutan).

Dimension 7: Language and communication style

Worldwide, there are more than 7000 different languages. Communication and language form the base for the interaction between individual members of a culture. It is not only the words or expressions used; moreover, language transports values, norms and basic world views. HALL (1959) focuses on communication by stating that for him *"communication IS culture."*

Communication and language are a basic element of protected area work because protected area management always has to do with people.

Dimension 8: Gender & Diversity

Every culture has its own approach to the distribution of roles between woman and man and between different social groups. Societies develop their own systems of social differentiation (e.g. caste system in Hindu societies, clearly assigned tasks for each member of a community). In the course of the last years, increasing attention was drawn to gender and diversity related. The annually published Global Gender Gap Report analyses the situation of women with regards to unequal access to economic resources, education, health services and power (WORLD ECONOMIC FORUM 2011).

Gender and diversity as issues are directly linked with the distribution of resources, access to education, political participation, values and norms of a societies, education and religion. All these issues also have implications for the work in protected areas. The importance of gender and diversity for protected areas with regard to knowledge and to sustainable development was already outlined in previous sections (Chapter 2.1.3 and Chapter 2.2.4). Especially different ethnic groups developed characteristic decision-making processes and political institutions (e.g. matrilineal societies like the Minangkabau in Indonesia or tribal elders as local leaders). In multi-ethnic countries, the dealing with different ethnic groups is a fundamental question (KHADKA & VERMA 2012). It is solved differently by each culture.

2.3.3 The cultural context of protected areas

Going beyond a nation- or ethnicity-bound understanding of culture, every person, organisation, ethnic group, professional or social group is part of several cultures at different levels (HOFSTEDE 1997; HOFSTEDE & HOFSTEDE 2006; WELSCH 1999). Globalisation and modern means of communication result in a permanent exchange of ideas, people, concepts and worldviews across the world. Thus, WELSCH (1999) proposes a concept of *"transculturality"* to seek an explanation

for the interaction between a number of ways of life and cultures which interpenetrate and emerge from one another in a process of hybridisation.

International organisations like IUCN or WWF are active around the globe and permanently integrate new ideas of conservation. Hence, the global protected area network and community might be considered a transcultural network.

The cultural layer model for protected areas presented in Figure 12 is based on the combination of the approaches by Tylor and Welsch. It illustrates the transcultural interdependency of a protected area-culture system. All layers are permanently interacting and exchange values, ideas and norms.

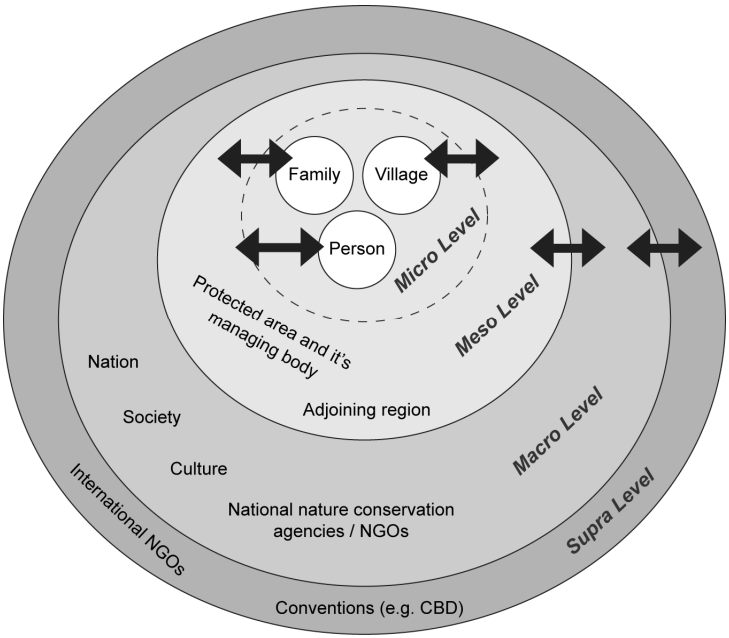

Figure 12: Protected areas in a cultural layer system
Authors' draft

2.3.3.1 Microscopic level – Culture at individual level

Any cultural activity is based on the actions and values of individuals. They form the smallest entity of each "culture" on a higher hierarchical position. In the cultural context of a protected area (Figure 12), not only individual persons but also families, clans and village communities form the microscopic layer. Characteristics, values and norms of local cultures are usually visible in the strategy, management plan or types of action taken in protected areas.

Observable elements of local cultures

Considering the iceberg model, the individual cultures feature some visible characteristics and a lot of intangible or invisible characteristics. Whereas invisible features can only be perceived if there is a fundamental understanding for the respective culture, visible features at the individual culture level can be

- traditional costumes
- seating arrangements during meetings
- local language and communication style
- traditional land-use patterns
- local food
- architectural style and characteristic use of materials

2.3.3.2 Mesoscopic level – The protected area as culture

The organisational culture of protected areas forms a kind of culture in itself, which is influenced by all other layers. International and national guidelines, conventions, laws or directives represent the frame for protected area management work and define long-term development or protection goals. The protected area management units usually have a common understanding of regional development, nature conservation or management of natural resources. They share common values which may be considered a protected area management culture. The protected area staff members, partly originating in the region, partly coming from abroad, have their own values, norms and technical backgrounds which are integrated into the ongoing management and planning.

Observable elements of protected area culture

- Internal guidelines, how to deal with specific issues
- Uniforms
- Contents and structure of the management plans
- Available type of literature at the management
- Number and type of active co-operations
- Corporate design and identity
- Design of the visitor centre
- Signposts and condition of trails
- Number and background of staff
- Office buildings

2.3.3.3 Macroscopic level – The national culture

The layer above the microscopic and macroscopic level is the national culture. The country's borders are considered as a cultural boundary because usually countries have a common (official) language, consistent administrative units, a joint (conservation) policy and a homogenous legal framework. The macroscopic level

may also be seen from other perspectives (e.g. based on religion, topographical or historical features).

The national culture defines the legal and administrative framework as well as national strategies and programmes. These can be considered the expression of a national culture with underlying values, norms and beliefs, (usually) shared by the majority of the citizens. This has consequences for protected areas as it defines their budget and their objectives and provides the legal and administrative frame. In a functioning system, the protected area management implements national directives, evaluates the outcome and reports back to the national level leading to a system of permanent evaluation and learning.

Observable elements of the national culture

- Content of national legislation for nature conservation
- Contents of national programmes and strategies (biodiversity strategies, e.g. Nationalparks Austria strategy)
- Amount of funding for protected areas
- Background and number of staff of the ministry
- Corporate identity, self-presentation of respective ministries or responsible institutions
- Office buildings and equipment

2.3.3.4 Suprascopic level –Global culture

Especially in developing countries, international organisations and NGOs are very active. In Nepal, there is a long tradition starting back in the 60s when development aid and cooperation started. Since then, a tremendous amount of money, people, ideas and values have been exchanged or transferred. The motives and objectives for development aid have changed in the course of time, which is well-documented by several studies in the field of development theory (e.g. ACHARYA 2004; ACHARYA & KOIRALA 2011; TIWARI 2007).

These activities have had a tremendous influence on all levels of cultures around the globe. Ideas have been imported, people have become educated, money has been invested and infrastructure has been built. The development of protected areas was often initiated and accompanied by international organisations that introduced their ideology and organisational culture.

In terms of protected areas, international organisations like IUCN, WWF or UNESCO provide the overall framework for protected areas. International conventions like CITES define certain national legal actions. The role of international organisations is a double-edged role. On the one hand, international ideas may not be shared by all countries or be inappropriate in some regions. On the other hand, they provide information, education, infrastructure, innovative ideas and methods

to improve protected area work. These differences can trigger innovation when international and local approaches are combined (JUNGMEIER 2012).

Whereas developing countries are influenced by international organisations and NGOs, European protected areas are additionally influenced by the requirements and structural funds of the European Union (e.g. Life+, Interreg).

Observable elements of the culture of international organisations

- The philosophy and priorities of international organisations active in a country visible in a Mission statement
- Number and type of projects realised and funded
- The ratio of national and international staff working in a country
- The content of strategies and programmes

2.4 Transfer and exchange of knowledge

This chapter outlines approaches and methods for exchanging this knowledge between regions, countries and organisations as well as between organisations with a different cultural background with specific regard to protected areas.

Many approaches in this field originated in economic sciences, in knowledge management and in organisational development. Due to that fact, the protected area network basically consists of organisations we chose to focus on this organisational approach.

2.4.1 Definition of knowledge exchange and knowledge transfer

The term "knowledge exchange" refers particularly to the communicative exchange of knowledge between individuals, teams or organisations. The term exchange implies that the knowledge flow is realised at least in two or more directions (GRANDTNER 2007). Exchange of knowledge also involves the transportation of values and attitudes of the sender. Mutual understanding is considered fundamental for a successful knowledge exchange. If this mutual understanding cannot be reached, knowledge transfer is likely to fail or to be simple exchange of information (EPPLER & REINHARD 2004).

As soon as the information is embedded into the individual context and can be linked with personal experiences, information becomes knowledge.

Especially in organisations, the exchange of knowledge is fundamental

- to preserve the knowledge of individuals for the organisation
- to make knowledge available for other members of an organisation
- to stimulate the synthesis of new knowledge by re-combining knowledge.

KEPKE & SCHULDES (2006) differ between "transferable" and "intransferable" knowledge. Explicit knowledge is transferable already by definition. The transferability of implicit knowledge is trickier and not as easy to accomplish.

The *Fields of Activity* are considered explicit knowledge of protected areas and therefore transferable. However, the content of several *Fields of Activity* refers to implicit knowledge and, thus, deserves further attention.

Knowledge can be exchanged by face-to-face communication or by written means. According to THIEL (2002), face-to-face knowledge exchange can transport considerably more knowledge, whereas written communication (e.g. email) is a rather strongly codified exchange and resembles pure information exchange.

CUMMINGS (2003) provides a comprehensive report on knowledge exchange in organisations and refers to five primary contexts which can affect the success of a knowledge exchange process.

- Relationship between source and recipient
- Form and location of the knowledge
- Source's knowledge sharing capability
- Recipient's learning predisposition
- The broader environment in which the sharing occurs.

2.4.2 Categorization types of knowledge exchange

LEHNER (2009) describes four levels of knowledge exchange which strongly refer to companies but are equally relevant for organisations such as protected area management bodies.

Intentional vs. unintentional knowledge exchange: This strongly refers to companies. Intentional knowledge exchange is the process of sharing certain knowledge with cooperation partners (e.g. by realising a joint project). Unintentional knowledge exchange (transfer) can occur by product imitation, reverse engineering and the headhunting of key staff.

Internal vs. External knowledge exchange: Knowledge exchange can occur within an organisation or between organisations.

National vs. International knowledge exchange: National knowledge exchange and transfer occur within the borders of a country (e.g. a cooperation between two national parks of the same country or cooperation with a national NGO). International knowledge exchange occurs between organisations of different countries.

Horizontal vs. vertical knowledge exchange: Knowledge exchange occurring within the same hierarchical level of an organisation is considered horizontal exchange (e.g. interaction of two rangers of a national park). Vertical exchange describes the process of exchange of different hierarchical levels (e.g. ranger-management interaction or directorate-management interaction).

2.4.3 Barriers inhibiting the exchange of knowledge

Knowledge barriers within or between organisations can tremendously affect the success of exchanging knowledge (SCHÜPPEL 1996). It is indispensable to address and to identify knowledge barriers before starting the exchange process. SCHÜPPEL (1996) identifies four different knowledge barriers:

Individual knowledge barriers refer to abilities and attitudes of individual persons. Typical individual barriers are the recipient's learning predisposition, the source's knowledge-sharing capability or the refusal to share individual knowledge if a loss of individual power is considered (e.g. unwillingness to share results of research with other colleagues) (CUMMINGS, 2003).

Collective knowledge barriers are barriers related to interpersonal communication. CUMMINGS (2003) also outlines the importance of the relationship between the source and the recipient (e.g. different knowledge background of sender and receiver leads to misunderstandings).

Organisational knowledge barriers: Existing hierarchical levels or structures as well as power relations or internal rules may inhibit the exchange of knowledge within an organisation (e.g. lack of opportunities for rangers to share their practical experiences with the management).

Systemic knowledge barriers are relevant if there is no sufficient communication or information infrastructure available (e.g. no meeting place for staff to communicate, different schedules so that people never meet…).

Additional cultural knowledge barriers as defined by BURES (2003) have to be taken into account. This barrier can have various causes such as language differences, different world views, norms, values or communication rules (e.g. international consultants try to develop a management plan but do not understand culture-specific priorities).

Gender-related knowledge barriers are not to be found in literature but can be relevant. It is impossible to relate this barrier exclusively to any of the above mentioned barriers because it can occur at any level (e.g. the refusal to communicate with women, the exclusion of women in terms of access to information, rules that discriminate women in organisations). However, this is also true for marginalised social groups (e.g. ethnic minorities, younger people, and people with a different professional background or origin).

Deliberately installed barriers are not mentioned in literature but considered fundamental. Knowledge barriers are often desired by institutions. Internal knowledge should remain within the organisation (e.g. company secrets, confidential information). Censorship may apply in certain countries which can also be considered a desired knowledge barrier.

2.4.4 Models for exchange of knowledge

According to KROGH & KÖHNE (1998 CIT. IN LEHNER 2009), every knowledge exchange process passes three different phases (Figure 13).

During the *"Initial phase"* the type and content of the knowledge that is to be exchanged is defined. The content should be analysed in terms of transferability and potentially necessary adaptations. Additionally, the sources for this knowledge and the resources available are checked thoroughly.

The second phase, the *"knowledge flowing phase"*, is the most critical phase because it is influenced by a large variety of different factors. The most common means for exchanging knowledge are formal or informal interaction and communication. Personal contacts, mutual understanding and informal opportunities to exchange knowledge are most important for the exchange of implicit knowledge.

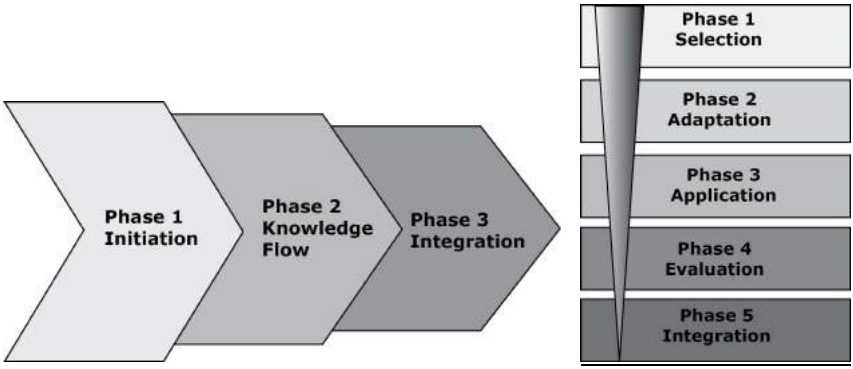

Figure 13: Two different models for knowledge transfer
Three-phase model for transferring knowledge based on Krogh & Köhne (1998) and five-phase model for intercultural exchange or transfer of knowledge based on Fan (1998)
Authors' draft based on Krogh & Köhne (1998) and Fan (1998)

The *Integration* of the new knowledge is the last step of a knowledge transfer. During this phase, the new knowledge is integrated into the experiences and existing knowledge of the receiver to become applicable knowledge. This phase depends on the personal abilities of the receiver to absorb, integrate and apply new knowledge. The appropriate design of the previous phases is a basic requirement for a successful integration phase and consequently deserves special attention.

INKPEN & CROSSAN (1995) propose three major mechanisms for organisations to spread knowledge within an organisation:

1. *Key personalities and opinion leaders:* If key personalities of an organisation are part of the knowledge exchange, these persons may serve as role models within their organisation. If they apply new knowledge, they inspire their colleagues to adopt this new knowledge as well.

2. *Mutual trust and understanding:* If there is a cordial relationship and mutual trust between the sender and the receiver, the integrating effect can happen completely on its own.

3. *Organisational structures:* New knowledge can be integrated into the organisational structures. Hence, it is incorporated into the old system and available to every member of the organisation.

Whereas the model of KROGH & KÖHNE used a general model applicable especially within homogenous organisations, FAN (1998) adds a cultural component and extends the transfer process from a three- to a five-step process. FAN (1998) investigated the transferability of western management concepts to China and defined five phases of a knowledge transfer:

1.) Selection of the knowledge supposed to be transferred
2.) Adaptation of this knowledge to the new cultural context
3.) Application of the new knowledge in the new cultural context
4.) Evaluation of the applicability of the new knowledge
5.) Integration of the knowledge into existing knowledge. The knowledge is fully applicable in the cultural context and can be combined with local knowledge.

FAN (1998) identifies three types of knowledge relevant for knowledge exchange showing different features:

- *Core layer knowledg*e representing basic assumptions and fundamental principles of the management (e.g. globally shared conservation values).
- *Middle layer knowledge* consists of knowledge about concepts, models and theories (e.g. Fields of Activities, Integrated conservation and development programme (ICDP), local product branding in Europe).
- *Out-layer knowledge* is related to methods and techniques applied by the management (e.g. workshop planning, stakeholder involvement; habitat mapping). However, the out layer is special in the case of protected area management as there are globally similar methods of natural sciences but also globally very different methods in the field of social sciences.

2.4.5 Knowledge exchange in protected areas

Protected area management bodies are knowledge-based and often academic organisations and knowledge exchange is a basic aspect of their work.

There is a permanent horizontal and vertical exchange of knowledge. Figure 14 provides a schematic overview of the knowledge exchange system of protected areas. The type and content of knowledge exchanged in protected areas strongly depends on the sender-receiver relationship. If the staff members interact with local residents, mostly practical knowledge and experiences are shared. Often it is less an exchange of knowledge but more a one-way information transfer.

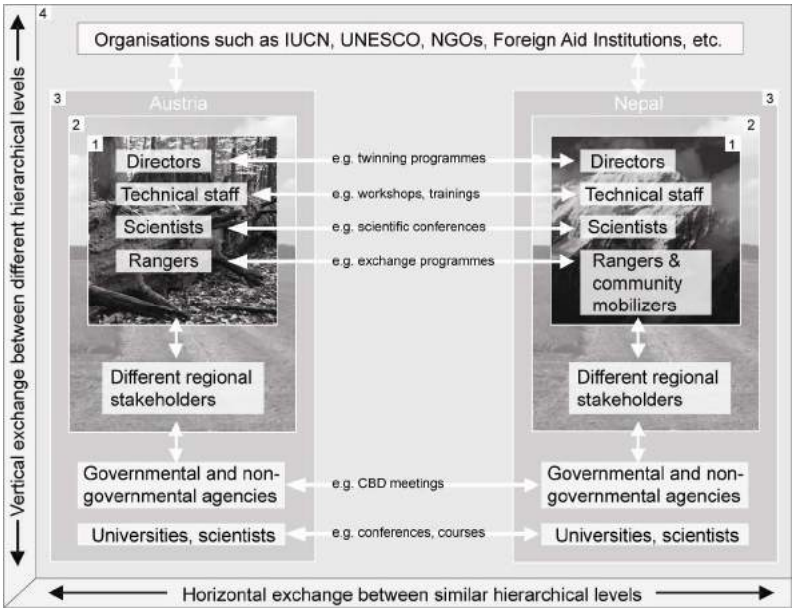

Figure 14: System of knowledge exchange for protected areas
Horizontal and vertical exchange on internal, local, national and international levels
Authors' draft

The exchange with other protected areas and umbrella organisations focuses more on the exchange of experiences, best practice examples, the discussion of concrete problems or general strategies and the exchange of scientific results.

Considering the exchange of knowledge between two countries and protected areas such as Austria and Nepal, the exchange is likely to occur on three levels:

On *the level of protected area management*, protected area management bodies can cooperate with each other directly (e.g. joint projects, staff exchange, excursions, symposia, partnership). A unique feature of international cooperation of protected areas is the case of transboundary protected areas stretching across national borders. As natural environments often do not comply with national borders, there is an increasing number of transboundary protected areas (227 in 2007, UNEP/WCMC 2007). They provide valuable experiences for a transcultural exchange of knowledge and guidelines for successful cooperation of parks (EUROPARC FEDERATION 2010).

On the level of persons and institutions associated with protected areas, many protected areas cooperate with external organisations or experts (e.g. consultants, NGOs, universities). This facilitates indirect knowledge exchange because experts and external organisations may spread and use their knowledge they exchanged with a specific protected area. A joint education and personal relationships can also be considered important for knowledge exchange at this level.

The level of impersonal explicit knowledge exchange refers to the exchange of explicit knowledge of protected areas through generally available sources such as literature, database information or publications. At this level, knowledge exchange already develops more towards an exchange of information and personal contact is no more related to the exchange.

2.5 The FoAs as a means of transcultural exchange

The 27 Fields of Activity (FoA) were originally developed during an international project in Central Europe (JUNGMEIER & VELIK 2005). Furthermore, they form the basic structure of the MSc programme "Management of Protected Areas" at the University of Klagenfurt. This structure is supposed to cover the whole process from the first idea of establishing a protected area to the ongoing adaptive management (Figure 15). The following section outlines the general content of each of the fields of activity as presented by GETZNER et al. (2010). The two *Fields of Activity "Law enforcement"* and *"Conservation Measures"* were later on added to the structure.

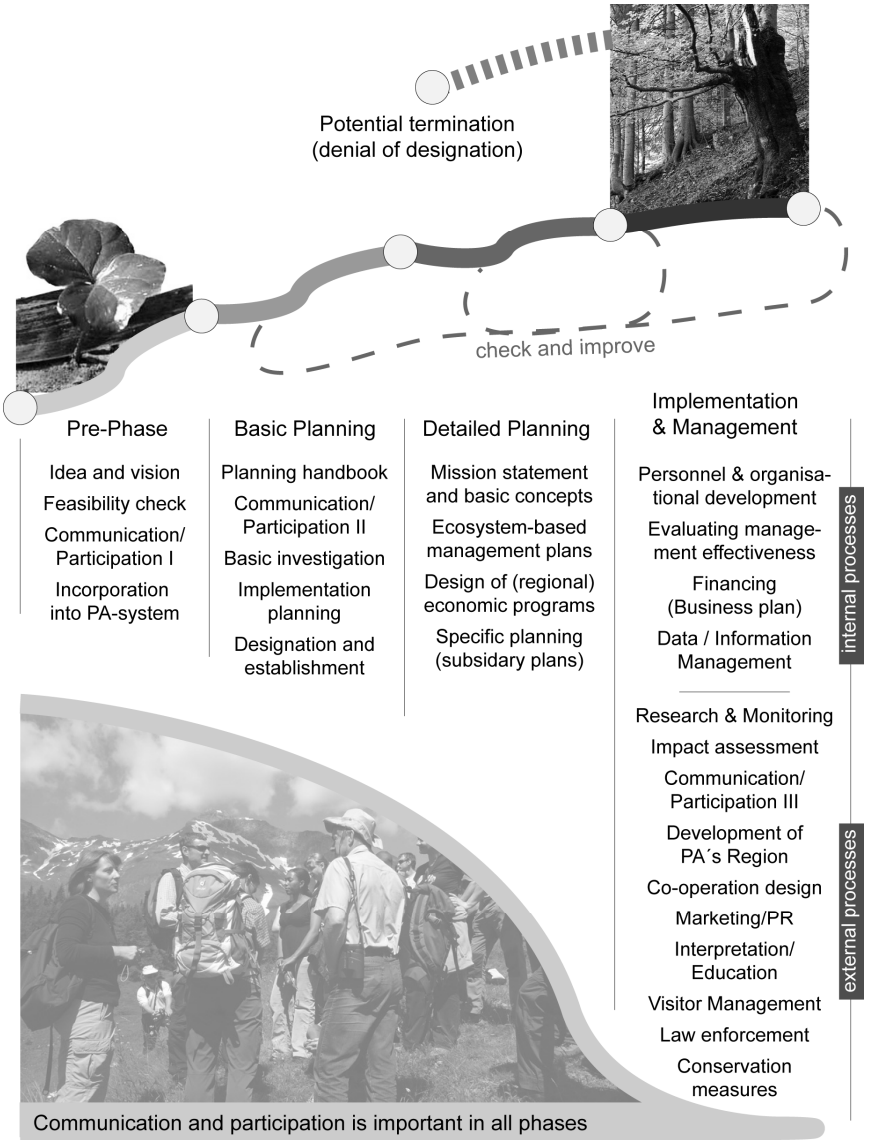

Figure 15: Life cycle of a protected area
Authors' draft based on Getzner et al. (2010)

Pre-phase

FoA-1: Development of Idea and Vision. The idea of establishing a protected area is often raised and developed by a limited number of people (stakeholders) dedicated to the conservation of biodiversity. By involving all relevant stakeholders, a broader vision has to be agreed upon in an extensive process of discussion and debate.

FoA-2: Feasibility Check. Once the vision of developing a protected area is clear, the feasibility of its implementation is analysed by focusing on the regional situation in spatial, socio-cultural and economic dimensions. Potential problems or risks are identified and balanced with the opportunities for the region stemming from the potential establishment of a protected area.

FoA-3: Communication and Participation I. Previously identified stakeholders are informed in an appropriate way and have the chance to become involved in the further planning process. Already at this stage, it is also crucial to involve potential opponents of the prospective protected area.

FoA-4: Incorporation into Protected Area-Systems. The site to be developed as a protected area is envisioned to fit into the existing national (and international) protected areas system. Core functions and unique attributes of the intended protected area are identified.

Basic planning phase

FoA-5: Planning Handbook. The basic planning processes of a protected area are set up as precisely as possible in order to avoid misunderstandings, mistrust or potential flaws which consequences may multiply during the further planning and management of the site. The "road map" for the whole process can nevertheless differ considerably according to environmental, economic or legal conditions of a particular region, and has, of course, to be adapted to changes in the relevant frameworks.

FoA-6: Communication and Participation II. Involving a wide range of stakeholders allows for a better understanding of the potential resistance and generally also increases the acceptance of the protected area. Key players are identified, regularly informed and invited to contribute to the planning of the protected area.

FoA-7: Basic Investigation. All kinds of data and information are collected for the planning process, such as ecological and economic data, GIS (Geographical Information System) and remote sensing data.

FoA-8: Implementation Planning. The implementation plan contains all basic information required for the (legal) designation of the protected area, for instance, fixed boundaries, proper zoning and a defined organisational structure. The implementation plan also has to correspond to the legal frameworks and the international requirements of the chosen protected area's category.

FoA-9: Designation and Establishment. The (legal, official) designation is the final act of the basic planning process. After a successful application, the new protected area is nominated by national or European legislation and/or an international organisation (e.g. UNESCO, Ramsar Convention). The establishment includes the formal (legal) set-up of the protected area (e.g. legal and organisational implementation).

Detailed planning phase

FoA-10: Mission Statement and Basic Concepts. Once a protected area is designated, it has to be pointed out what it stands for. A mission statement highlights the core values and objectives of the site in a few words. A corporate identity is developed to express and promote the mission of the protected area.

FoA-11: Ecosystem-based Management Plan. An ecosystem-based management plan indicates how the habitats and species in the protected area can be used, developed and managed in order to achieve the conservation objectives. A monitoring system is established to measure the effectiveness of all management activities.

FoA-12: (Regional) Economic Programmes. Nature conservation does not necessarily prevent economic development. In contrast, protected areas often stimulate regional economic development as the PA frequently attracts tourists and provides a platform for presenting, promoting and selling regional products and services.

FoA-13: Specific Planning (Subsidiary Plans). Certain issues such as public and private transport and waste (water) treatment may affect a protected area. They are taken into account when planning and managing the site.

Implementation and management phase

FoA-14: Personnel & Organisational Development. A particular type of organisation (e.g. limited company, government body or authority, community or NGO based management) and professional staff are chosen to form the managing structures of the protected area. Specific emphasis is on the management of change from organisational as well as economic and ecological viewpoints.

FoA-15: Evaluating Management Effectiveness. The whole process of establishing a protected area is monitored and evaluated, from site-based actions to broad political and policy reviews. SMART (specific, measurable, achievable, relevant, time-bound) indicators have to be defined and can easily be monitored.

FoA-16: Financing (Business Plan). Financing is one of the major concerns of protected areas. The expected earnings and expenditures are usually presented and forecast in a business plan. When planning the financial component of the protected area's business plan, the benefits the park brings to its customers (e.g. local and regional stakeholders, visitors) are to be considered. Innovative ways of funding are discussed and developed. A good mixture of funding sources can substantially widen the financial opportunities and independence for a protected area (financial sustainability of protected areas).

FoA-17: Impact Assessment and Limitation. Protected areas may be affected by other infrastructure projects such as road construction, electricity production, industrial or housing development. In such cases, public authorities and, often, legal regulations, require an assessment of the environmental impacts on the ecological system of the park. Park staff may offer to pre-check a planned project. Therefore, clear procedures for impact assessment have to be established to ensure transparency and completeness of potential impact assessment processes.

FoA-18: Data and Information Management. An ICT (Information and Communication Technology) system is developed according to the specific needs of the park in order to collect, store, control and disseminate information and data relevant to the protected area.

FoA-19: Research Setting and Monitoring. It is generally advisable to prepare an overview of the research already available or still required by the protected area. A long-term monitoring programme is set up.

FoA-20: Communication and Participation III. All relevant stakeholders are permanently involved in the ongoing management activities (participatory management). However, a clear differentiation is made between decision-making, controlling, consulting bodies and informative groups of stakeholders. Differentiated technical information is provided for stakeholders, decision-makers and the public.

FoA-21: Development of Protected Area Region. Developing the region of a protected area means that there will most likely be a need to adjust or develop regional strategies, policies, programmes and guidelines with the focus on social, economic and ecological sustainable development.

FoA-22: Cooperation Design. For the long-term benefit of the protected area, a strategic network is created with regional, national and international partner-ships including, for instance, individuals, NGOs, governmental institutions, international bodies and umbrella organisations.

FoA-23: Information, Interpretation & Education. With few exceptions, protected areas have the task of educating and raising public awareness regarding nature, ecology, sustainability and related issues. The core messages and target groups are clarified in order to plan and manage all educational and information activities.

FoA-24: Visitors, Services & Infrastructure. Visitor management, which includes regular ways of collecting feedback and opinions of the PA's customers, is one of the main tasks of PA management. The needs of visitors, local tenants and residents are equally considered. A well-balanced range of infrastructure and an adequate visitor programmes has to be provided. The behaviour, activities and spatial distribution of visitors as well as the feedback mentioned above is recorded for strategic purposes.

FoA-25: Marketing and Public Relations. A professional marketing approach comprises several key elements, like client analysis, product definition, development and contribution, competition evaluation, strategic partnerships, campaigns and advertising. Protected areas can be promoted as a regional or even national "brand."

FoA-26: Law enforcement. Complying with all legal requirements of protected areas (e.g. acceptance of no-take zones, prohibition of hunting) is one of the key factors for success. Thus, different forms of law enforcement have to be applied to prevent people from violating the rules.

FoA-27: Conservation measures. Preserving biodiversity and natural ecosystems is the main concern of all protected areas. Thus, particular conservation measures (e.g. species conservation programmes, habitat conservation) have to be performed in the ongoing management.

FoA-28: Termination. Sometimes specific circumstances (e.g. politics, infrastructure projects) may require or suggest removing a protected area and to annihilate a conservation status.

2.5.1 Forming principles for the management of protected areas

Besides the FoAs, there are several principles which shape and influence all Fields of Activity and cannot be assigned to a certain FoA (JUNGMEIER 2010). GETZNER & JUNGMEIER (2009) postulate protected area management as a new interdisciplinary scientific discipline, which is shaped by the eight "forming principles:"

1. *Sustainable development*
2. *Inter- and transdisciplinarity*
3. *Internationality and global challenges*
4. *Long-term and intergenerational perspective*
5. *Benefit sharing*
6. *Communication, participation and good governance*
7. *Ecological and economic effectiveness*
8. *Innovation*

3 APPLIED METHODS

The following chapter provides an overview of the project and the methods applied. The knowledge assessment for protected areas and the fingerprinting method are explained in detail because they have been specifically developed for the project. The project approach was structured as follows:

- The theoretical part involved a literature review with the aim of linking the question of how to exchange sustainability knowledge across different cultures to the broad field of protected area management.
- To answer the research questions, a set of various methods was developed and applied.
- Field work was carried out to analyse four selected case study sites. Data collection consisted of focus group discussions, semi-structured interviews, expert interviews and workshops.
- Finally, the research questions were answered according to the results of the field work and discussed and interpreted during a transdisciplinary discourse.

Figure 16 provides an overview of the general approach and procedure of the project.

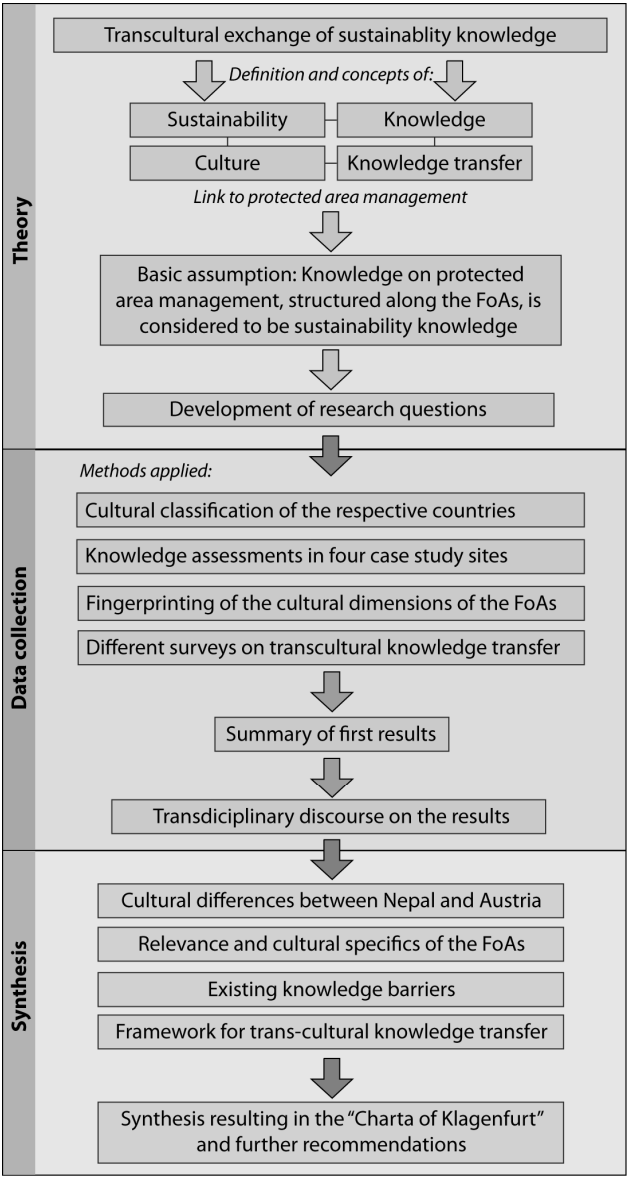

Figure 16: Project and research design
Authors' draft

3.1 Framework for a transcultural exchange of knowledge

Based on the models for knowledge transfer of FAN (1998) and KROGH & KÖHNE (1998), an integrative, extended framework was developed converting the above mentioned models for transferring knowledge into a framework for deliberately exchanging knowledge including a cultural component (Figure 17). According to this framework, a transcultural knowledge exchange follows seven steps of which four depend on expertise and overall setting and three depend on individual characteristics of the persons involved. According to the research questions, the model refers to the exchange of the FoAs.

Phase 1: Selection

In a first step, the general relevance of the contents has to be screened and general contents not covered have to be found. By realising workshops, questionnaires and case studies, a list of a relevant FoAs is derived in a first step (Chapter 5.2).

Phase 2: Adaptation

In a second step, the detailed contents of the FoAs have to be categorised, adapted, changed or removed to suit the new situation. Contents can be categorized as globally, regionally and nationally relevant contents as well as culture-bound and skill-bound knowledge. This is the most complex step and it cannot be accomplished without extensive cooperation of representatives of the respective cultures involved in the process.

Methods of this phase are for instance workshops, questionnaires, case studies and an analysis of the cultural context (e.g. according to Tylor, Chapter 5.1). As a result, there are fully adapted FoAs suitable for the cultural context (Chapter 5.3).

Phase 3: Flow

To successfully transfer the desired knowledge, it must be embedded in the right organisational setting which has to address the needs of the targeted groups. If the knowledge flow occurs across cultural boundaries, the selection of appropriate methods is crucial. Appropriate methods are stakeholder and organisational analyses to determine the appropriate organisational setting. Method selection can be based on experiences of professionals working in intercultural education (Chapter 5.5). The cultural dimensions of Hofstede give a first hint which methods are appropriate (Chapter 5.5.1). After preparing contents, the organisational setting and methods, the actual flow can start.

The following phases refer to processes realised by persons who have obtained this new knowledge. This process cannot be influenced but it strongly depends on the adequate design of the first three phases.

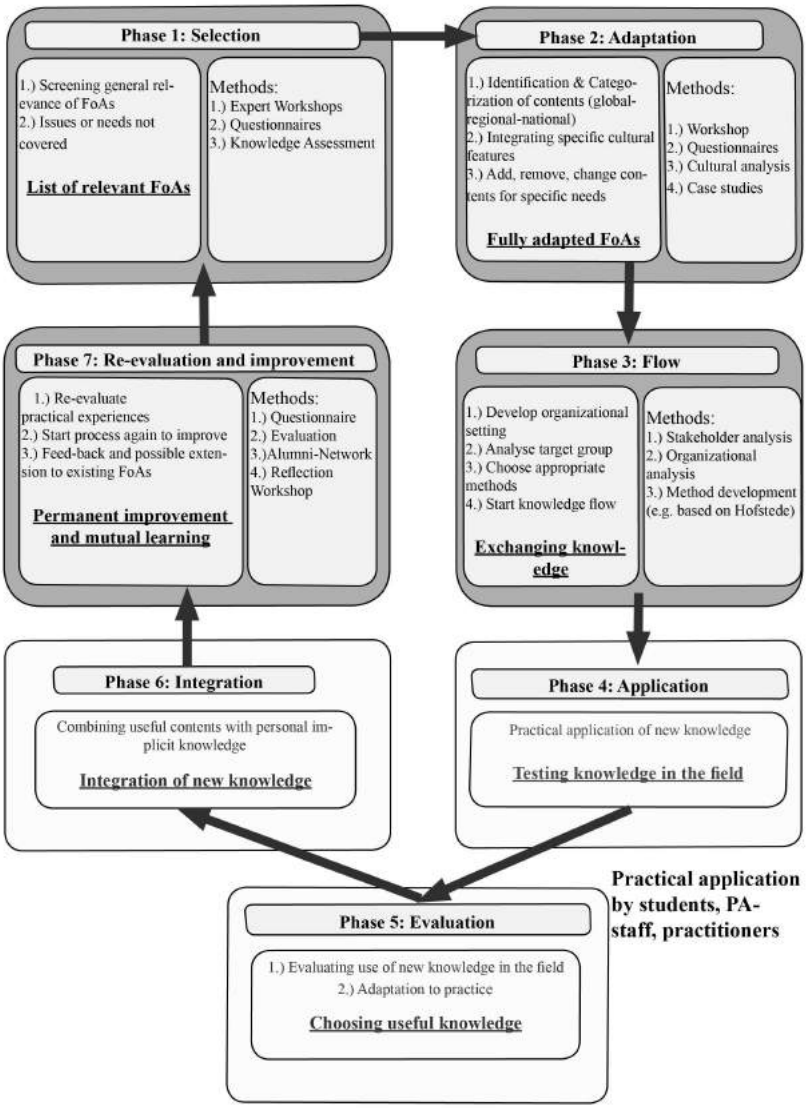

Figure 17: Seven-phase model for transcultural exchange of knowledge
Authors' draft based on Fan (1998) and Krogh & Köhne (1998)

Phase 4: Application

After having obtained new and theoretical knowledge, it is put into practice and tested in the new cultural context, for instance, by participants of a specific training or by alumni of a master programme.

Phase 5: Evaluation

In a further step, the applicability of the new knowledge is evaluated. Useless knowledge is ignored and the rest of the knowledge is adapted to the new context.

Phase 6: Integration

In a last step, the knowledge is combined with existing knowledge and becomes applicable.

Phase 7: Re-evaluation and improvement

This phase is an extension to existing models and crucial for accomplishing an exchange of knowledge. The newly integrated and adapted knowledge, which is already tested in practice, can be used to improve and re-evaluate the first three phases. The combination of new knowledge might even improve the original FoAs. This step can be accomplished by evaluations, survey and exchange through alumni networks (chapter 5.5.6).

3.2 Knowledge assessment in four case study sites

"Intellectual Capital Reporting" (ICR) was developed in Sweden in the 90s. Experts and enterprises recognized that knowledge of enterprises was not included in conventional methods for assessing available assets. The fundamental role of knowledge for the future development of enterprises and society was acknowledged. By applying the method of intellectual capital reporting, a new tool for a comprehensive assessment was introduced (RENZL et al. 2006). This tool should enable the documentation and evaluation of intangible and tangible assets and the values created like an increase of knowledge (ARC 2001).

According to new regulations in 2002, Austrian universities are obliged to yearly present intellectual capital reports to document their knowledge performance (RENZL et al. 2006; ÖRK 2003).

3.2.1 Knowledge assessment for protected areas

Protected area management units are knowledge-based organisations and their success cannot be defined by an increase in monetary values but by rather intangible results (e.g. successes in conservation, improved environmental awareness). Protected areas usually have high intellectual capital and accumulate knowledge by generating, applying, documenting and disseminating knowledge related to protected areas and sustainable development in a broader sense.

Assessing the intellectual capital provides an opportunity for protected areas to gain a comprehensive and unconventional overview of their resources. It should illustrate the amount and localisation of existing knowledge (in this case FoAs).

3.2.2 The ICR-model adapted for protected areas

The model of the Danube University Krems (KOCH & PIRCHER 2004; KOCH 2009) was strongly modified to fit the special needs of the project and the characteristics of protected areas (Figure 18).

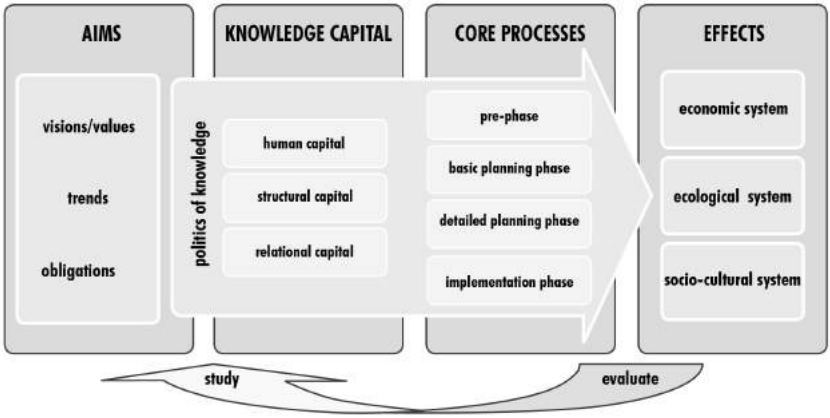

Figure 18: Knowledge assessment for protected areas
Authors' draft based on Koch (2009)

Aims, a vision and basic values are fundamental for protected areas. Concrete objectives are derived from the overall vision and goals. Success can only be measured by referring to the overall goals of an organisation. Protected areas also have to fulfil certain tasks, which are not defined by the protected area itself but by umbrella organisations (e.g. IUCN, ALPARC), conventions (e.g. CBD, RAMSAR, Alpine Convention) or international organisations (e.g. UNESCO). An analysis of the management strategy of the protected areas by applying the *"fingerprint of intervention"* (JUNGMEIER et al. 2011; JUNGMEIER et al. 2009) supplements this section.

Knowledge capital as shown in Figure 18 is the available knowledge basis to fulfil the tasks and reach the goals defined in the aims section. Usually, there are three different types of knowledge capital, namely human, structural and relational capital (NORTH 2011; SVEIBY 1998 in RENZL et al. 2006).

Human capital: According to WEISS (2005), this is the *"combination of the knowledge of members of an organisation."* It is the entity of competences, abilities, motivation and aptitude to learn from the staff (KOCH & PIRCHER 2004).
Protected area management bodies dispose of often highly qualified staff with comprehensive knowledge and abilities in the field of sustainable development. Scientific research is often considered a major task which is also supported by the protected area staff. Contemporary protected area management requires a wide range of different competencies which are almost all somehow related to sustainable development.

However, considerable effort is put into establishing networks of knowledge and specific education programmes (e.g. WPCA, CBD) to make use of this large amount of knowledge.

Structural capital is *"knowledge which is to be found in the organizational structure, in processes and the culture of the organization"* (WEISS 2005). It refers to the structures the staff needs to fulfil its tasks. Structures that persist also without human presence (e.g. documents, documented procedures, buildings, libraries) are considered to be structural capital (KOCH & PIRCHER 2004).

Protected areas dispose of extensive structural capital like visitor centres, research facilities, office space as well as libraries, digital archives or documented processes (e.g. corporate design or organisational charts).

Relational capital refers to the *"relations to partners, clients, experts or the public"* (WEISS 2005) as well as cooperation and partnerships with other organisations (KOCH & PIRCHER 2004).

Contemporary protected area management bodies cooperate intensively with local partners, institutions, society, educational institutions, NGOs and regional economy. They are often central interfaces in local networks and because of their interdisciplinarity, they are in touch with organisations of different fields. All these organisations keep interacting and exchanging knowledge which is mostly related to sustainable development issues.

Core processes are those processes which represent the main task of an organisation (e.g. doing research and teaching at universities) (KOCH & PIRCHER 2004). Core processes are the *"work"* that has to be done by means of the available knowledge capital. It is the work that serves to achieve the set objectives.

As seen in chapter 2.5, the fields of activity represent a comprehensive set of tasks and competences which are fundamental for protected areas. Consequently, the fields of activity are seen as core processes of protected areas. The assessment of the FoAs is rather complex and was already tested in previous research (JUNGMEIER & VELIK 2005).

Effects: According to JUNGMEIER (2012), an action set by protected area management bodies is considered an intervention in the system of the protected area region. Consequently, the work and the activities realised on behalf of the fields of activity have certain effects on the protected area region. Basically, protected areas influence the 1.) economic, 2.) ecological and the 3.) socio-cultural systems of the region. These effects can be positive or negative, often also depending on the goals of the respective protected area.

3.2.3 Realisation of knowledge assessments

The knowledge assessment for protected areas was realised in the four case study areas in Austria and Nepal. The main elements of the process were a workshop with several members of the protected area staff, focus group discussions and accompanying interviews conducted prior to the workshop.

The knowledge assessment workshop took four to six hours of intensive work. To take intercultural issues into account, Nepalese partners participated in the organisation and realisation of the workshops in Nepal. Afterwards, intercultural issues were discussed in a reflection process and interpreted accordingly.

Evaluation of the method

A knowledge assessment is able to provide a comprehensive overview of the work of protected area managements. Within Austria, the results are comparable. However, some limitations for transcultural comparisons were observed:

- The structure of knowledge assessment was difficult to realise for the Annapurna Conservation Area because of its decentralized organisation, the sharing of tasks and extensive community involvement.
- The assessment of structural resources was based on estimates of the staff. Hence, an individual and cultural bias and subjective assessments are likely.
- The core process assessment allows for an overall comparison between protected areas. However, a detailed assessment of individual *Fields of Activity* might be able to increase the informative value of this section. This would exponentially increase the individual workload and was therefore not realised in this project.

3.2.4 The four case study sites

Protected area management encompasses all aspects of the protected area region. Each protected area is unique and shaped by local culture, traditions and its natural surroundings. Four individual case studies were analysed (Figure 19).

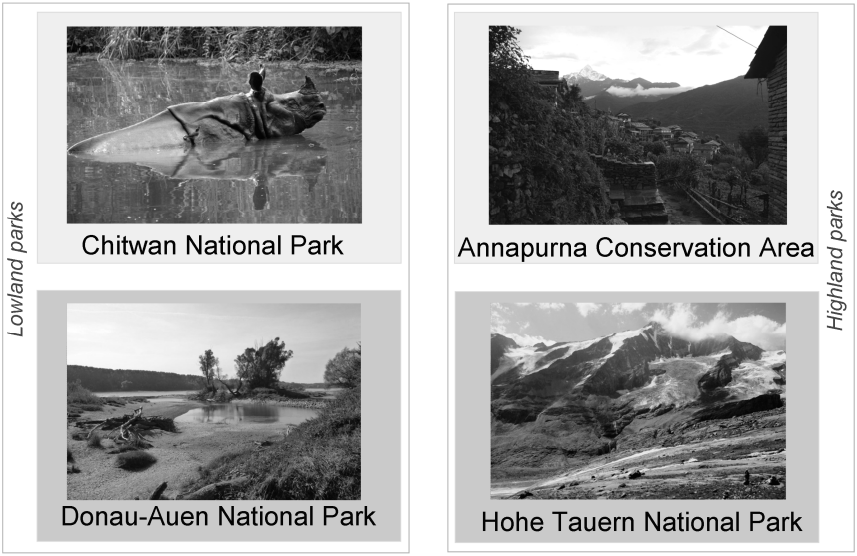

Figure 19: Selected case study sites in Austria and Nepal

The case study locations were chosen to represent the characteristic features of the protected area management system in the respective area and facilitate a comprehensive insight into protected area work. Three criteria determined the election of the case study sites:

- Criterion 1: Natural environment: Nepal and Austria are both characterised by mountainous and lowland landscapes. This results in different challenges for the management and in different knowledge. Annapurna Conservation Area and Hohe Tauern National Park are mountainous parks located in the Himalayas and in the Alps, whereas Donau-Auen National Park and Chitwan National Park are located in the lowlands of Austria and Nepal.
- Criterion 2: Objectives and goals (management system): The environment and the protected area category determine goals and objectives of a protected area reaching from regional development and nature conservation to environmental education and recreation. Annapurna Conservation Area focuses on livelihood aspects, Chitwan National Park on wildlife conservation, Donau-Auen National Park on conservation of riverine landscapes and Hohe Tauern National Park on conservation, on the development of the region and on tourism.

- Criterion 3: Cultural diversity is particularly important in Nepal as it is a multi-ethnic country. Chitwan National Park and Annapurna are inhabited by different ethnic groups and cultures. In Austria, Hohe Tauern National Park is located in a rather remote and traditional region, whereas Donau-Auen National Park is located in a more urban setting.

3.3 Fingerprinting the cultural dimensions of the FoAs

A cultural characterization of the individual Fields of Activity is required to assess whether and how cultural aspects affect everyday work of protected areas in different cultural settings. However, when talking about cultures, there is always stereotyping as it seems a necessary approximation to describe certain features. The authors are well aware of this phenomenon.

The cultural approach of Tylor (chapter 2.3.2) was considered the best suiting approach to characterise the Fields of Activity because it focuses on how things are, whereas other cultural approaches are strongly defined by how things are done.

By linking the individual Fields of Activity with the cultural dimensions of Tylor, a cultural profile was developed, which is shown in a radar chart (e.g. Figure 20). The more cultural influence on the contents of a Field of Activity is expected, the more difficulties are expected for the transcultural exchange of the respective knowledge.

After developing the fingerprinting tool, international alumni of the MPA-programme in Klagenfurt (N=25) realised an initial assessment of the cultural dimensions for each FoA in a survey. The results of this assessment were used in further steps for discussion with Austrian and Nepalese experts and gradually adapted in multiple steps.

The final radar charts outline a schematic overview of how strong individual FoAs are shaped by culture and by which elements of culture. Assessing cultural influence on individual aspects of protected area management can only be schematic because the full complexity of culture can never be fully displayed. It has to be kept in mind that culture is a dynamic concept likely to change over time.

In a further step, international students of the MPA-programme in Klagenfurt completed an assignment in the course of the first run of the newly established module *"Group dynamics and intercultural competences."* Following a semi-structured guideline, the students prepared a report on a protected area in their home countries to afterwards compare and discuss the results in class. These results contributed and supported the process of determining the cultural dimensions of the FoAs.

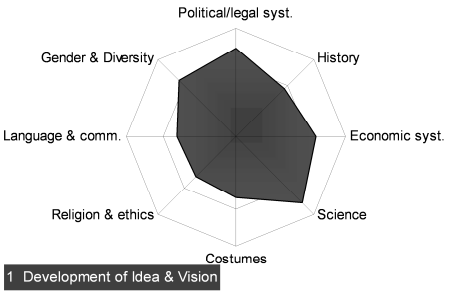

Figure 20: Cultural profile of FoA-1 Development of Idea and Vision Alumni and Student survey (N=25)

3.3.1 The 5-R Method

To investigate the role of different and marginalised social groups in the protected area management systems of Nepal and Austria, we chose the 5-R method as proposed by GRASENICK (2012), which is an extension of the 4-R method (VERLOO & ROGGEBAND 1996; NAYLON & WEBER 2000). This method was developed by Swedish authorities to analyse gender and diversity issues in organisations (FÖRSTER et al. 2011).

The following part explains the 5 R, what they mean and how to collect the information needed as proposed by GRASENICK (2012) and VERLOO & ROGGEBAND (1996). The method is used to structure and analyse the gender and diversity dimension, which was added as an eighth cultural dimension to the analysis of the cultural context. Results of the interviews, workshops, discussions and observations regarding gender and diversity issues were structured accordingly. Several expert workshops contributed to the reflection on the results and their meaning for diversity issues in protected area management.

1 – Reflection: The first R stands for reflection and refers to a reflection process of the staff with regards to the current situation in the organisation in terms of homogeneity and diversity. It should provide an overview of to which extent persons in the organisation are aware of unequal representation. It serves both as an awareness raising tool and as a method to document the perception of gender and diversity issues within the organisation.

Protected area management bodies are often dominated by men. It is still unclear how protected area managers perceive this issue and whether the gender debate has arrived in this field yet.

2 – Representation stands for the actual representation of different social groups in protected areas. This is a simple "how many of this group and how many

of the other group are represented at certain levels." It serves to gain an insight into the gender distribution at all levels of the decision-making process (e.g. among decision-makers, staff, board members, technical staff etc.) (JÄMSTÖD 2007).

Protected area management bodies fulfil a wide range of tasks affecting the livelihoods of local residents. Equal representation in decision-making bodies is considered essential for successful protected area management.

3 – Resources: This part tries to answer the question of the allocation and distribution of resources by gender. Resources encompass not only financial resources but also access to knowledge, training, mobility, power, internal and external networks and time.

4 – Realia: This step tries to analyse why the situation is as it is and who has the power to influence it. Representation and resources are about quantity. Who has access to what? Realia are the qualitative substance of an activity (JÄMSTÖD 2007). Visible patterns of distribution of resources and representation are analysed.

5 – Rights: This section analyses the legal framework and whether all social groups have the same formal rights within the organisation. Basically, discrimination due to group specific features (e.g. caste, origin, language, political orientation) is forbidden. However, discrimination still exists in practice as frequent discussions about quota and new laws show. Thus it is worth to take a look at the legal situation.

3.4 Survey of transcultural knowledge exchange

3.4.1 Interviews

The results presented in chapter 5 are largely based on semi-structured interviews as proposed by FLICK et al. (2009). The interviews were kept as open as possible.

Selection and number of interview partners

In total, 21 semi-structured interviews were realised in Austria and Nepal. Most of the interviews were recorded, transcribed and interpreted accordingly.

Most of the interviews were conducted in Nepal as the Austrian situation was already rather well-covered.

The selection of the interview partners was based on the cultural layer model (Figure 12). We covered the perspectives of all layers to gain a comprehensive overview. Additionally, we tried to base the selection of interviewees on the diversity wheel (LODEN & ROSENER 1991, modified by JUNGMEIER et al. 2009) to cover the perspectives of different social groups. This proved to be rather difficult as most positions in Nepal were held by male persons of the ruling castes.

In Nepal, interviews included high-level government staff at DNPWC, representatives of the most relevant NGOs at a national level such as WWF and NTNC,

representatives of international organisations (IUCN), international experts and management staff of the protected areas and local residents of the case study areas. In Austria, most information was collected during the workshops and in collaboration with the MPA programme. Additionally, an interview with an expert from Vienna on international master programmes was realised to integrate transcultural teaching experiences from other international master programmes.

Content and interview guideline

Interviews in the protected areas mainly focused on everyday management and implications of protected area management to outline the most relevant practical issues in protected area management and to determine cultural differences and commonalities between the systems in Austria and Nepal. Expert interviews focused on obtaining practical information about the exchange of knowledge (e.g. organisational and financial setting, successful intercultural communication and teaching methods).

Realisation of the interviews

The interviews in Nepal were all realised by an Austro-Nepalese team, one male and one female person. Most of the interviews were held in English. Some interviews had to be held in Nepali but were translated and transcribed afterwards.

However, critical issues were often not recorded and only discussed in an informal setting. Sometimes the contents were even contradicting statements made during the formal interview situation. The contents of these discussions were documented afterwards but are not part of the transcribed interviews. Due to their often fundamentally important content, the results of informal discussion were nonetheless integrated.

3.4.2 Survey among students of the MPA course

A short survey among former and current students of the Management of protected areas master programme in Klagenfurt was realised to evaluate the relevance and effects of this programme. Out of 65 (former or current) students, 25 participated in the survey resulting in a response rate of 39 per cent.

The questionnaire was kept short and consisted of six questions addressing different issues concerning the process of exchanging knowledge in an international setting and the relevance of the knowledge provided by the FoAs for their home countries:

- Please mention three lecturers from whom you benefited most and specify why the knowledge transfer and exchange of experiences was so effective in these cases.
- In general, what was more beneficial for you, the exchange with your MPA colleagues during the modules or the presentations of the lecturers?

- Was the MPA study helpful for your professional career? In what respect?
- Can you describe a situation in which the knowledge gained in the MPA-Programme was helpful for you?
- Please outline the three most useful subjects of the MPA-Programme.
- Please outline the three least useful subjects of the MPA-Programme.

The results of this survey contribute to the discussion about transcultural exchange of knowledge in the field of protected area management. The results are discussed in detail in chapter 5.5.

3.5 Transdisciplinary discourse

According to KASTENHOFER (2009), the addressed field of research is complex and requires in-situ observations as well as a multiple set of different methods to compensate rather weak evidence power. The involvement of a wide range of experts from science and practice is indispensable. The research team consisted of two male and two female experts from three different countries with external experts for knowledge management, diversity management and intercultural issues who permanently accompanied the research process.

Consequently, a permanent exchange and discussion and reflection process involving students and alumni of the international master programme "Management of protected areas" in Klagenfurt, lecturers from the master programme, practitioners such as protected area managers, experts for diversity and knowledge management as well as consultants working in the field of protected area management took place.

Figure 21 provides an overview of specific events which were realised in the transdisciplinary and transcultural discourse and went beyond the above mentioned permanent reflection and discussion process. The schematic overview shows that perspectives from practice, science and theory were permanently integrated and cross-checked.

The realisation of a pilot module, "Group dynamics and intercultural competences," in the course of the project put the results of the project into immediate practice. Experiences and reflection of the first run of this lecture are a central aspect of the results section.

From the beginning, international students and alumni of the international master programme *"Management of Protected Areas"* in Klagenfurt were frequently involved in the research process. An international master programme represents a manifestation of transculturality according to the understanding of WELSCH (1999) because experiences from different cultures hybridize and inspire other students. Results and approaches were discussed with international students and lecturers.

Many assumptions and results were directly related to experiences with international students and the participants served as a permanent *"sounding board"* to reflect on their own perspectives.

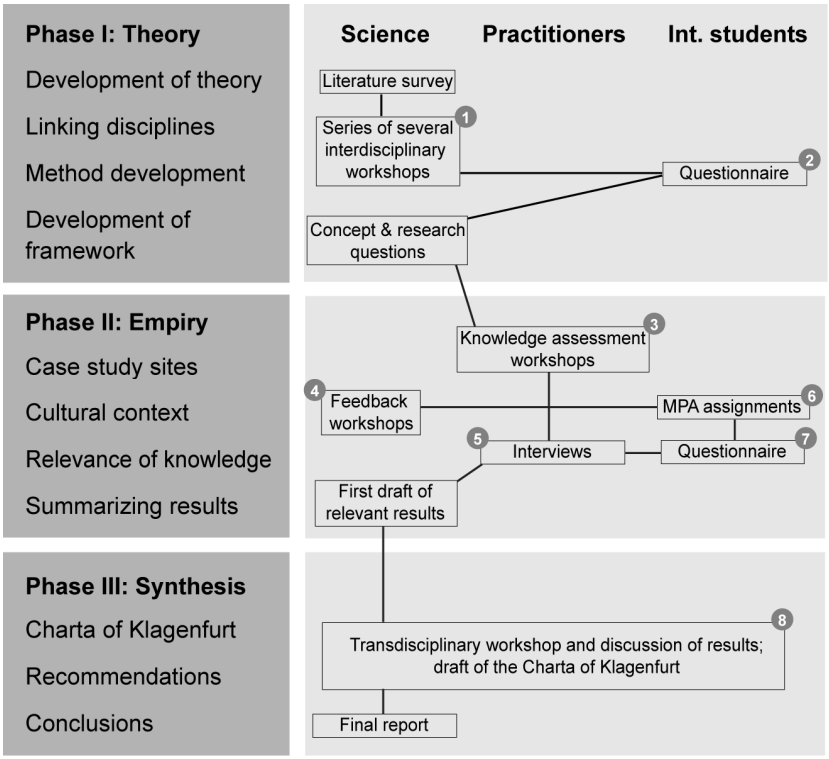

Figure 21: Transdisciplinary discourse (schematic overview)
1 (workshop series scientists; 5 persons (3 female), Austria), 2 (questionnaire, 25 students/alumni of MPA), 3 (4 case studies (workshop series with 28 professionals (9 female)); 4 (feedback workshops with scientists; 6 persons (3 female); 5 (18 interviews in Austria and Nepal), 6 (seminar works (13 students: 7 female, 7 countries), 2 lecturers); 7 (questionnaire: 25 students/alumni of MPA); 8 (final workshop (11 scientists and professionals; 5 countries, 3 lecturers);

In the last phase of the project, an international and transdisciplinary workshop was held involving experts from various scientific fields, practitioners from protected areas, consultants, students, alumni and lecturers of the MPA-programme. Final recommendations and key findings were discussed critically.

The conclusions drawn during this workshop represent an integral part of the synthesis section. The *"Charta of Klagenfurt"* was drafted and discussed, which should represent a general guideline for transcultural exchange of knowledge (chapter 6.3).

4 THE CASE STUDY SITES

4.1 Chitwan National Park, Nepal

Chitwan National Park (CNP, former Royal Chitwan National Park, IUCN Cat. II) is a lowland national park in the Inner Terai located at the foot of the Himalayas along the Indian border in south-central Nepal (Figure 23). The Narayani-Rapti river system forms the northern border of the national park towards human settlements.

Chitwan NP was established in Nepal in 1973. The area was selected because it had already been a royal hunting reserve and a gazetted deer reserve before (Mahendra Deer Reserve, 1965). The land was government-owned and declared a National Park by the former HM King Mahendra. The park was almost immediately acknowledged by IUCN. In 1984, world heritage status was granted.

The park stretches across 932 km² and is surrounded by a buffer zone covering an additional area of 750 km², which was established in 1996. Nowadays, the park and its wildlife are one of the most famous tourism destinations in Nepal because of the park's abundant wildlife, interesting local culture and easy accessibility.

Figure 22: Chitwan National Park impressions
View from Sauraha; Rhinoceros cooling down in a pond inside the National Park; Huber (2012)

Adjacent to CNP, the Parsa Wildlife Reserve and the Valmiki National Park are located on the other side of the Indian border. These protected areas are a habitat of

major importance for tiger conservation (Tiger Conservation Unit – TCU Chitwan-Parsa-Valmiki, WIKRAMANAYAKE et al. 1999). Consequently, Chitwan National Park mainly focuses on nature conservation, particularly in the conservation of globally threatened large mammals such as tiger, rhinoceros or sloth bear. More than 43 species of mammals, 500 species of birds and the Gharial are reported to occur in CNP (BHUJU et al. 2007). The national park is of global importance for biodiversity conservation. The area consists of alluvial floodplains, subtropical deciduous broadleaf forests dominated by Sal trees and Terai-Duar savanna and grasslands dominated by elephant grass.

The surrounding buffer zone, which is not part of the national park, is an innovative Nepalese approach and fosters regional development to improve local livelihoods (NEPALI et al. 2006).

Since the establishment of the park, the villages inside the national park have gradually been relocated. The last major resettlement took place in 2004 when the village of Padampur and its more than 10 000 inhabitants were relocated (DHAKAL et al. 2006). Consequently, no permanent human settlements are to be found inside the national park.

Figure 23: Map of Chitwan National Park
Authors' draft based on data provided by IUCN & UNEP/WCMC (2012)

Management

Chitwan National Park is managed by the Department for National Parks and Wildlife Conservation (DNPWC) based in Kathmandu. The main body of the management of CNP is located in Kasara inside the national park and collaborates with the National Trust for Nature Conservation (NTNC), the Buffer zone management and many (inter)national NGOs as well as with the army (chapter 5.2).

Protected area region

The area of the buffer zone represents the protected area region. It was established in 1996 to reduce the pressure on natural resources in the national park. Around 300 000 people in 35 communities inhabit the buffer zone of CNP. Fifty per cent of the revenues of the national park are provided for the buffer zone management which invests a certain amount of the money in regional development to improve the situation of the local population (NAKARMI 2007).

The protected area region is traditionally inhabited by the ethnic group of the Tharu, which are immune to malaria. Since the eradication of malaria, the population in the area has exponentially been increasing because it made the settlement of other ethnic groups coming from the Mid-Hills and the Himalayas possible.

Most inhabitants dedicate themselves to agriculture or tourism. The establishment of "community forests" in buffer zones provides sufficient natural resources such as firewood or elephant grass for local residents. An increasingly important source of income is ecotourism. The national park is famous for wildlife viewing and elephant safaris. Consequently, many development projects focus on tourism development (e.g. Community forest elephant safaris in Sauraha, ARYAL 2012).

Major challenges and conflicts

A major challenge is the limited availability of (human) resources of the park management.

Due to the growth of the rhinoceros and tiger populations, the human-wildlife conflicts increase. The animals extend their range of activities to the area outside the national park borders. There is no adequate compensation scheme for the corresponding damages. The government as well as the buffer zone committee have compensation schemes but they are not sufficient.

A permanent challenge is the issue of poaching and controlling the extraction of natural resources from the park which uses considerable resources of the park. The fight against invasive species such as the spreading of *Mikania*, a liana, in the grasslands, becomes increasingly important.

Land use, land cover change (e.g. conversion of forests to farmland), the development of infrastructure and of settlements around the park increase indirect pressure on the park and have a strong impact on conservation issues. People keep migrating to the area of Chitwan NP.

4.2 Annapurna Conservation Area, Nepal

The Annapurna Conservation Area Project (ACAP, IUCN Cat. VI) is located at the foot of as well as in the Himalayas (Figure 26). It is located near the city of Pokhara in the Mid-Hills region in central Nepal and stretches to Chinese border. The first parts were established in 1984 and gradually extended to its final expansion of 7 629 km².

Figure 24: The landscape of Annapurna Conservation Area
View towards Kagbeni and Upper Mustang in ACAP; Village of Lwang (Huber 2012)

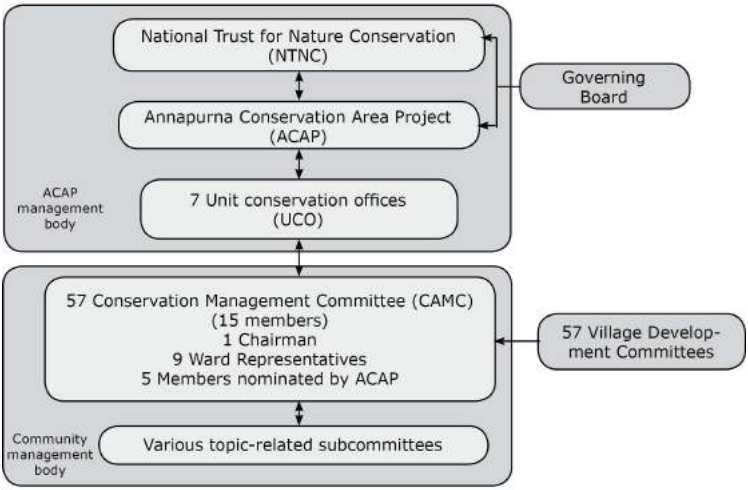

Figure 25: Institutional structure of Annapurna Conservation Area
Authors' draft

This protected area encompasses an extreme diversity of different ecosystems reaching from Hill-Sal forests at low altitudes around 1 000 metres to bare rock at

altitudes up to more than 8 000 metres. Around 28 different ecosystems are found in the conservation area. The area is an important refuge for animals like snow leopards, musk deer or Tibetan wolfs and is of major importance for biodiversity conservation (BHUJU et al. 2007).

ACAP is considered a best practice example for a co-managed protected area on a global level. Researchers are frequently attracted by its success. The *"Integrated conservation and development plan"* approach (ICDP) was successfully realised in ACAP. This approach follows the basic principle that local residents should get something in return, if they should be involved in conservation (see also chapter 5.1.3). The Annapurna Conservation Area is considered one of the most important and accessible trekking destinations in Nepal and contributes a major part to the revenues of the area.

Figure 26: Map of Annapurna Conservation Area
Authors' draft based on data provided by IUCN & UNEP/WCMC (2012)

Management

The management and organisational structure is unique and therefore especially interesting (Figure 25). It is co-managed by the National Trust for Nature Conservation (NTNC), which is responsible for administration, technical and financial support and representation and cooperation with external partners and *"Conservation Management Committees"* (CAMC), which consist of elected local residents and which are responsible for the local management of the area. In total, there are 57 CAMCs in ACAP. Consequently, the management of the park strongly focuses on local development, capacity building and sustainable development.

ACAP aims at developing the institutional structures in a way that one day the local communities will be fully responsible for the management of ACAP. This has not been realised so far and NTNC/ACAP still represents the ultimate decision body in the conservation area.

Protected area region

The Annapurna Conservation Area features high ethnic and cultural diversity. Around 100 000 people from ten different ethnic groups, organised in 57 communities (VDCs), inhabit the area (e.g. Gurung, Thakali, Tibeto-Burmese, Bhotia, Brahmin, Magar etc.).

Trekking and religious tourism are major sources of income through expenses in the area and by receiving the fees from the entry permit. Most people live on agriculture, livestock breeding and tourism-related activities.

Major challenges and conflicts

In general, there are no major conflicts to be reported from the Annapurna Conservation Area. Nevertheless, there are some issues that are considered a challenge. The decision about the moment when the communities are ready to be handed over to the management of ACAP, for instance, is seen differently by ACAP/NTNC and local communities. Sometimes, development initiatives have effects on other economic sectors (e.g. road construction-trekking conflict) or development initiatives are not in accordance with general principles of ACAP (e.g. conflict about the extent of extracting natural resources). Another challenge is the use of forest products and timber. Wood must not be used from one's own forest without the permission of the government. ACAP has no authority to register the timber. Consequently, people are unsatisfied with this complex situation. A change in policy and regulations in ACAP might be necessary and is a major issue for local residents.

Out-migration and demographic change as well land use change are additional challenges. Increasing livestock depredation and crop raiding by wild animals require a compensation scheme which is not yet available in ACAP.

Especially climate change and the glacier melting are considered the main challenges for the future and are already affecting the area. Glacier lake outbursts are likely to occur and flooding poses a major threat.

4.3 Hohe Tauern National Park (Carinthian part), Austria

Hohe Tauern National Park (IUCN Cat. II) was the first national park in Austria, and with its 1 834 km², it represents the largest protected area in the Alps. It is dominated by glaciers, alpine pastures and valleys, mountainous landscapes and remote villages and includes about 100 km of the main stretch of the Alps in Austria (Figure 36).The park is of superior importance for biodiversity conservation in the Alps. More than a third of all vascular plants of Austria and more than half of all birds, mammals and reptiles can be found in the park. The park is famous for a large number of endemites and is an important refuge area for threatened species (www.hohetauern.at).

The IUCN II category park was established in several phases starting with the Declaration of Heiligenblut in 1971. The first parts were finally established in 1981 in Carinthia. Since 1992, it has encompassed the Austrian federal states Salzburg, Carinthia and Tyrol.

The park is well-known as a destination for hiking and tourism and for its species related conservation programmes (e.g. Ibex and vulture reintroduction programmes). The park receives an estimated 1.75 million visitors per year (LEHAR et al. 2004).

Figure 27 Map of Hohe Tauern National Park
Authors' draft based on data provided by Hohe Tauern National Park

Large areas of the park are cultural landscapes and a product of traditional land use patterns (livestock breeding) in the Alps. The park is mostly privately owned and protected through contractual conservation management agreements.

The main goal of the national park is nature conservation along with regional development, preservation of traditional cultural landscapes, tourism and recreation management and environmental education.

Management

Hohe Tauern National Park stretches across three Austrian federal states which all have individual national park laws, individual administrative units and separate funding. However, they work as one park and function similar as a transboundary park. The cooperation with the other administrative units of the federal states of Salzburg and Tyrol is coordinated by the National Park Council, a committee consisting of representatives of all three management units. Stakeholder boards (e.g. Nationalparkkuratorium) are means to involve regional stakeholders.

In this case study, we analysed the management of the Carinthian part of the park. Hence, every addressing of the management body of Hohe Tauern National Park only refers to the Carinthian part.

Figure 28: Landscape of Hohe Tauern National Park Innergschlöss; (Jungmeier 2001); Traditional grazing in Hohe Tauern National Park (Jungmeier 2009)

Protected area region

In total, around 65 000 people in 31 municipalities are located in and around the park. Most of the people depend on agriculture and focus on tourism. However, due to the lack of other job opportunities, many municipalities of the national park are facing emigration and over-ageing of the population.

The Carinthian part (44 000 hectares) comprises 9 700 inhabitants in seven municipalities, especially in the Möll valley.

Conflicts and challenges

Major conflicts in the national park are closely related to development issues. Especially tourism development and discussions about the use of hydro power around the national park are issues of major importance. The large share of private property requires an extensive decision-making process for some activities. However, there is only little opposition against the national park.

The national park region faces a constant process of emigration and demo-

graphic change. Due to a lack of job opportunities, young people keep migrating to other regions in Austria.

Owing to climate change, the glaciers in NPHT are receding. Receding permafrost is another possible danger as it may destabilize the mountains and pose a danger for trails and alpine huts (HIRSCHMUGL 2003). Additionally, climate change affects the population of species which cannot cope with increasing temperatures (GRABHERR et al. 2010).

4.4 Donau-Auen National Park, Austria

The Donau-Auen National Park (Danube Floodplains, IUCN Cat. II) features one of the last dynamic riverine ecosystems along the Danube in central European lowlands. It stretches approximately 40 km between the city of Vienna and the Slovakian border, but its widest part is only four kilometres (Figure 29). In total, the national park encompasses 9 300 hectares.

The park was established in 1996, but its origins go back as far as 1984 when the construction of a hydro power plant was proposed and strong opposition by the population arouse. This led to an occupation of the floodplains by citizens, to the foundation of the Austrian Green Party and finally to the establishment of the national park in 1996.

All ecological processes and ecosystems are closely linked to the floods of the Danube. The national park is home to around 700 species of plants, 30 species of mammals, 13 species of amphibians and 50–60 species of fresh-water fish (NATIONALPARK DONAU-AUEN GMBH 2012). Natural flooding and related land transformation processes (e.g. towards xeric habitats) resulted in very diverse habitats and high biodiversity. The national park management is mainly focusing on conservation to maintain the characteristic features of a floodplain landscape.

Figure 29: Map of Donau-Auen National Park
Authors' draft based on data provided by Donau-Auen National Park

Management

The National Park Donau-Auen GmbH is a non-profit organisation which is in charge of managing the park. Due to land ownership and political borders, there are more institutions involved in the management of the park such as the Austrian Federal Forestry Company (ÖBf), which owns 45 per cent of the national park area and is involved in road and trail maintenance, wildlife management and forest ecology issues. The national park extends over two federal states of Austria, Vienna and Lower Austria, whose representatives are also involved with a "management board." Stakeholder boards were established to involve local stakeholders.

Protected area region

The national park and its goals are strongly focusing on nature conservation issues. However, the protected area region affects the management of the park. The proximity to the city of Vienna with around two million inhabitants puts a lot of pressure on the national park because it is a traditional recreation area for people from the city. Towards the north of the national park, the Marchfeld, one of the most important and intensive agricultural areas in Austria, is to be found. Towards the south, the Vienna Airport is located right next to the national park.

Figure 30: Exploring Donau-Auen National Park by boat
(Spika 2012 left, Jungmeier 2008 right)

Conflicts and challenges

The management of the park needs to handle a dynamic and open system in the surrounding of two major cities. Pressure on the park is mostly related to external issues which cannot be directly influenced by the park management. Large crowds of visitors using the park as a recreation require adequate visitor management strategies (ARNBERGER et al. 2002).

Furthermore, the natural dynamics of the riverine landscape are strongly influenced by the Danube. However the Danube is exposed to numerous interest groups with diverging concerns because the stream is an important waterway and an essential source of hydro power. Additionally, there is a process of continuous deepening of the river bed resulting in lower ground water levels. This directly affects the natural dynamics of the floodplains.

5 RESULTS

5.1 The cultural context of Austria and Nepal

The following part outlines and compares the cultural settings of Nepal and Austria to understand the way protected areas are working. In this chapter, the national borders are defined as cultural borders because organisational and legal issues are bound to a specific country.

5.1.1 Legal and political system

Until 2008, Nepal has been a monarchy. Political unrest led to the abolishment of the monarchy and the introduction of democracy. This period was characterized by political instability because ethnic, cultural and caste issues became more important. Today, it is still a young democracy where many issues wait to be defined. Until 2012, no constitution has been agreed on and everyday life has been difficult due to frequent strikes (Bandhs). This has also been affecting the economic development of the country (MCCONNACHIE & REED 2010). Basic political structures are centralised and hierarchically organised. The most important institutions are located in Kathmandu.

The country is grouped into five development regions (Far West, Mid-West, West, Central, East), which are divided into 14 administrative zones with a total of 75 districts. The smallest administrative unit is the village development committee (VDC), which is comparable to a municipality. There are 3 913 VDCs in total. As soon as Nepal will have a new constitution, a new administrative organisation is likely to be implemented.

From a geopolitical point of view, Nepal is a land-locked country similar to Austria. Nepal is located between the huge countries of India and China, which makes it easily politically influenceable. Since the 1950s, Nepal has been in the main focus of international development aid institutions which have shaped the country for the last 50 years (TIWARI 2007).

In times of political instability during *Maoist Insurgency*, for instance, a notable increase in poaching was observed (INTERVIEW 1).

The currently protected area network of Nepal is shaped by national politics and also by international organisations which influenced organisational and institutional settings. The centralised national park system is headed by the Department for National Parks and Wildlife Conservation (DNPWC). All national park management units frequently report to and cooperate with DNPWC headquarters in Kathmandu. NTNC (National Trust for Nature Conservation) is a national NGO funded mostly by donors, entry fees for conservation areas and the government. This institution is in charge of the management and coordination of all conservation areas in Nepal. DNPWC and NTNC are the most important and influential institutions at a national level. ICIMOD, WWF and IUCN are amongst the most important international organisations for nature conservation in Nepal. The International Centre for Integrated Mountain Development (ICIMOD) is an intergovernmental organisation of eight countries of the Hindu Kush-Himalaya region. They focus on transnational projects across the regional member countries such as the Kaylash Sacred Landscape Conservation and Development Initiative (www.icimod.org/ksl).

Nepal has five different categories of (managed) protected areas:

- 10 national parks (IUCN Cat. II)
- 3 wildlife reserves (IUCN Cat. IV)
- 1 Hunting reserve (IUCN Cat. VI)
- 6 Conservation Areas (IUCN Cat. VI)
- 12 Buffer zones (IUCN Cat. VI)

Nature conservation legislation in Nepal is strict. Any kind of hunting, for instance, is prohibited in general. The most important law is the National Parks and Wildlife Conservation Act (NPWCA) of 1973 and its seven associated regulations, which form the basis of every conservation activity in Nepal (BHUJU et al. 2007). Additionally, there are other laws which are relevant for protected areas such as the Forest Act (1993), NTNC Act (2039) as well as regulations and rules such as Buffer Zone Management Rules (2052) or Conservation Area Rules (CAR).

Confronted with illegal activities such as poaching or resource extraction, the law is ambitiously enforced. Thus, the Nepalese Army is in charge of law enforcement in more than half of the national parks (NEPALESE ARMY HEADQUARTERS 2010). Human-wildlife conflicts pose a major challenge for protected areas in Nepal. However, there are compensation schemes but implementation is rather weak. People hardly receive compensations in time for the damages caused by large mammals. This can be directly related to the fact that the Nepalese legal system is strongly influenced by Hindu traditions and the lack of a liability law as in western countries (HECKENDORN 2007).

In Nepal, all protected areas are government-owned and there is no private property in protected areas.

Austria has basically been a democracy and a federal republic since 1918 except for the time of World War II. The federal republic was re-established in 1945 after the end of WW II and finally received full independence in 1955. Since 1995, the country has been a member of the European Union. Despite an economic crisis, the country is stable and predictable. Austria has several levels of government reaching from rather powerful federal state governments, a federal government and the European Union at the top of the hierarchy.

In Austria, federal state governments are in charge of conservation. The department for nature conservation on a national level is integrated into the Federal Ministry of Agriculture, Forestry, Environment and Water Management and is mainly responsible for international issues. Decentralized structures have led to a large variety of different types of protected areas and different laws. There are more than 1 000 different protected areas in Austria which are split into 14 different categories of varying size. These areas are often very small and categories may overlap. They are mostly not managed. However, there are several categories of larger protected areas which also have an own management. In Austria, there are

- 6 National parks (IUCN Cat. II)
- 7 UNESCO Biosphere Reserves
- 47 Nature parks

When referring to protected areas in Austria, the authors only refer to managed protected areas.

General guidelines and an overall framework are provided by the European Union (e.g. Habitats Directive, Wild Birds Directive). However, federal states have their own, often differing, national park and biosphere reserve legislation. Funding for protected areas is provided by the federal and the federal state governments for national parks and by federal state governments and communities for nature parks or biosphere reserves.

Law enforcement is not a prevalent issue in Austrian protected areas. Park rangers have no executive rights. Offenses are subject to common legal procedures. Most law infringements are considered administrative offenses by law (e.g. national park law of Vienna, L490-000 § 19(1)) and treated as such.

Each national park is considered an independent institution. There are noteworthy national umbrella organisations for individual protected area categories (e.g. Nationalparks Austria, Verband österreichischer Naturparke, Austrian MaB-Committee for biosphere reserves) to provide a platform for exchange and coordination. Additionally, there are transnational European organisations such as ALPARC, EUROPARC or Danubeparks.

In Austria, protected areas are mostly structures which are located on private property and protected area managements have to deal with numerous land owners.

5.1.2 Economic system

Nepal is amongst the poorest countries worldwide with hardly any noteworthy industrial structure strongly depending on foreign aid. The average per capital income was around 470 USD in 2011. Economic growth was 3.7 per cent in 2011 (KfW 2012), which is low in comparison to the growth rates of neighbouring countries such as China and India.

In the course of the last years, a period of insecurity, political instability, frequent power cuts and political unrest negatively affected economic development (MCCONNACHIE & REED 2010). Nevertheless, some parts of Nepal such as Kathmandu or Pokhara face rapid changes and economic growth.

The majority of the population is still directly or indirectly dependent on primary production. Despite urban development and growth, rural areas change slowly and basically remain farming societies. This is a particular challenge for the management of protected areas because the basic needs of local residents and the goals of protected areas are more likely to collide (INTERVIEWS 2, 3, 12, 13, 15, 17).

Protected areas in Nepal are supposed to substantially contribute to the national economy (INTERVIEWS 3, 6, 11, 16). Famous protected areas like Annapurna Conservation Area, Chitwan National Park or Sagarmatha National Park attract foreign and domestic tourists. Hence, regional development activities in most protected areas focus on tourism and perceive nature conservation as a tool for regional development (INTERVIEWS 2, 3, 6, 8).

Austria is located in the centre of Europe and is a wealthy member state of the European Union. The Austrian economy is highly industrialised, export- and service-oriented. The primary sector only plays a minor role for the national economy. Outside the Alps, farming is mostly industrialised and performed on a large scale. Similar to Nepal, the tourism sector plays a superior role for the national economy. Nepal is experiencing a strong development in urban areas, whereas rural areas are facing emigration. Similar developments can be observed in Austria where high-quality jobs are mostly available in urban centres.

Similar to Nepal, many rural regions in Austria hope for economic benefits from protected areas (HUBER 2011). Protected areas are even considered “landscapes of hope” in terms of economic development (MOSE 2006). Nature conservation is perceived as an opportunity to enhance tourism and economic development.

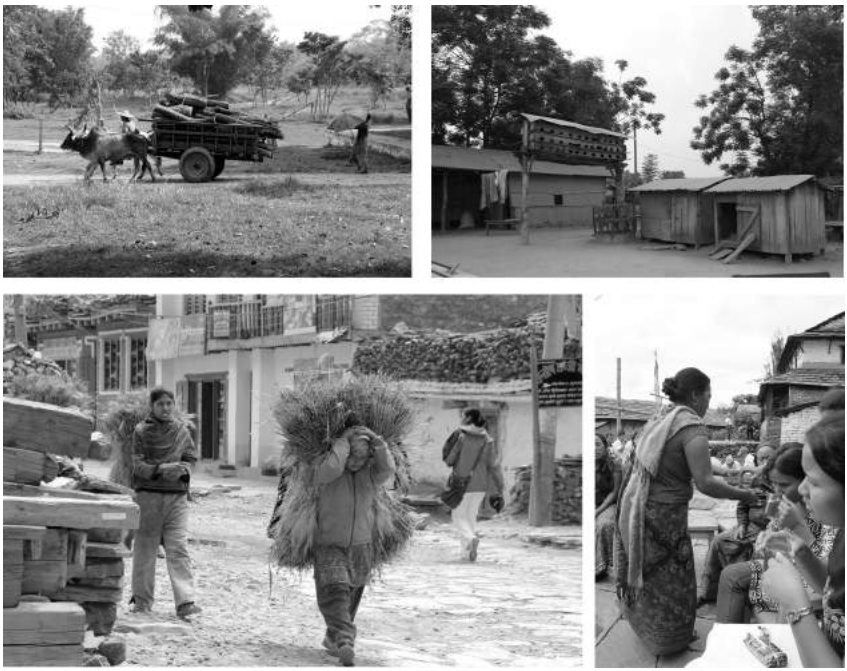

Figure 31: Human presence in protected areas of Nepal
Firewood extraction from Chitwan NP buffer zone; traditional Tharu housing; harvesting in Jomsom, ACAP; tea during workshop in Lwang, ACAP
(Huber 2012)

5.1.3 History

Basically, Nepal has never been occupied by colonial powers although India and Great Britain tried to do so in the past. The country originally consisted of several independent kingdoms which were finally unified by the Rana family of Kathmandu, which ruled until 2008. Until the middle of the 20th century, Nepal remained almost completely isolated from the rest of the world. From the 1950s onwards, the country opened step by step. This was also the beginning of ongoing interventions by international development organisations. Since its beginning, Nepal was one of the focus countries for development aid. Although much effort has been put into development, the country is only changing slowly (TIWARI 2007).

Conservation history in Nepal started at the beginning of the 1970s when the first national park (Chitwan National Park) was established and the still fundamental National Wildlife Act was passed in 1973. The protected area system of Nepal

was established in times of the monarchy, often based on a top-down approach focusing on nature conservation, especially on the protection of globally important mammals and predators (e.g. Bengal tiger and greater one-horned rhinoceros). The early phase of protected area establishment in Nepal was accompanied by the relocation of several villages in national parks (e.g. the village of Padampur) (DHAKAL et al. 2006).

Simultaneously, community-based approaches were developed for mountainous landscapes. In 1986, the Annapurna Conservation Area was the first conservation area in Nepal, which is widely community-managed. A new approach was required to enhance regional development in extremely poor mountain areas whilst securing natural resources and stopping their depletion.

Hence, the Integrated Conservation and Development Approach (ICDP), which should achieve conservation via development, was developed (BARAL et al. 2007). This approach emphasises that local residents have to receive something in return for their conservation efforts. This is supported by extensive benefit-sharing mechanisms. The great success led to the establishment of five other conservation areas throughout Nepal by 2012.

A similar development was the reason for the development of the buffer zone approach in the 1990s (INTERVIEW 1). This approach was a reaction to conflicts related to completely conservation-oriented conservation. The buffer zone can be considered similar to conservation areas and biosphere reserves in a European sense. It surrounds the national parks and also follows the ICDP approach. It tries to achieve sustainable development as well as nature conservation to reduce the pressure on national parks. Consequently, national parks are obliged to provide 50 per cent of their revenue to support the development of the buffer zone (INTERVIEWS 2, 5, 7).

The landscape-based conservation approach is a more recent development which tries to link different protected areas of the greater region at a trans-national level to make conservation efforts, especially for large range and migrating species, more efficient. A prominent example is the TAL-Network (Terai Arc Landscape), which connects several protected areas in the Terai in Nepal and India. WWF and DNPWC are the main driving forces of TAL. The second example is the SHL (Sacred Himalayan Landscape), which tries to intensify joint conservation activities in the Eastern Himalayas around Sagarmatha National Park (Mt. Everest National Park). ICIMOD, an intergovernmental organisation working for eight countries of the Hindu Kush-Himalaya region, facilitates biodiversity conservation and management at a transboundary level.

Austria has always been an integral part of Europe. It was once amongst the most influential empires in Europe. After World War II, the country gained its current shape. A major shift in recent history was the accession to the European Union in 1995, which intensified the inner European cooperation.

The first regulations regarding the use of natural resources were passed in the 19th century. Some even date back to medieval times. Until the 1920s, nature conservation was based on private initiatives and associations. The first nature conservation laws were passed between 1924 and 1935. The German Reichsnaturschutzgesetz was introduced in Austria in 1938. However, the first noteworthy protected areas, namely several nature reserves and landscape conservation areas were not established until the 1960s.

Hohe Tauern National Park was the first Austrian national park (in 1981), established eight years after the first Nepalese national park. The establishment of national parks in Austria was closely linked to citizen action committee activities to prevent large infrastructure projects such as dams or power plants.

Most of the large protected areas in Austria were established in the last 20 years to preserve the last (semi-)natural landscapes, cultural landscapes or to enhance regional and sustainable development. An additional strong obligation for protected areas and nature conservation was the accession to the European Union. Many EU-efforts such as the Natura 2000 network required new laws. Additionally, EU-subsidy schemes and programmes provided more financial means than ever before.

The latest large protected area is the Salzburger Lungau & Kärntner Nockberge Biosphere Reserve which was recognized by UNESCO in 2012.

5.1.4 Science and education system

In Nepal, access to education, especially higher education, is difficult. The literacy rate is around 60 per cent of the total population and it is slowly improving. In 2010, the youth literacy rates were 88 per cent (males) and 77 per cent (females) (UNICEF 2011). About 4.6 per cent of all secondary graduates per year were enrolled at university (http://www.nationmaster.com 2012).

Higher education is limited to urban areas, whereas in rural areas usually only primary education is offered. However, the educational system in Nepal is still young. In earlier times, monasteries and the Gurukul system formed the basis for education. Students came to an Ashram to learn from a Guru and adopted his attitudes and values. The first university in Nepal was not established until 1958 when Tribhuvan University was founded and gradually integrated many community colleges all over Nepal. Nowadays, Nepal has six universities. However, the private share of tertiary education (university level) is around 40 per cent.

Due to the late opening of the country and the rather late establishment of universities, there is only a limited history of research in Nepal. Research is realised by universities, NGOs, international students and organisations. International organisations are major funding bodies for research. It is very popular for undergraduates to complete a master or a PhD programme abroad. Due to a lack of em-

ployment options, many graduates do not come back causing a permanent brain drain.

Protected area managements in Nepal contribute to the improvement of the educational offers in rural areas by supporting education programmes, offering further education, realising environment awareness campaigns, cooperating with schools and providing capacity building opportunities for local residents (e.g. capacity building programmes in ACAP) (INTERVIEWS 3, 12, 14).

Required qualification for protected area staff at higher levels is regulated. A forestry degree from a university is a prerequisite (INTERVIEWS 4, 5). Taking the example of ACAP, the situation is a little different, however not less formalised. ACAP defined in its management plan a clear qualification profile for the composition of the staff (NTNC 2008; INTERVIEW 13). This does not only include forestry graduates but also social sciences, tourism or economy graduates (NTNC 2008).

Further education for protected area staff is mainly provided by short-term trainings by international organisations or by university and job rotation within or between different protected areas (INTERVIEWS 4, 5, 12, 13, 14).

In Austria, the literacy rate is considered to be around 95 to 99 per cent. Nearly 60 per cent of the students completing secondary education enrol for tertiary education. In addition to universities, Austria offers several other education opportunities (e.g. dual system, a combination of on-the-job training and formal education, professional education at secondary schools). Austria has numerous universities all over the country. Research is mainly realised by universities, private or public research institutions and private companies. The European Union develops research programmes, promotes research activities and is a major funding source for research.

Most of the management staff working in protected areas in Austria has an academic background (see also chapter 5.2.2). The Faculties of Biology at Austrian universities and the University of Applied Life Science educate most of the protected area staff. However, there is no education particularly addressing protected area management except for a two-year master programme in Klagenfurt. There are no formal requirements for working in protected areas. The qualification for a job is evaluated from case to case but protected area staff with a more diverse professional background is increasingly important (e.g. social sciences, humanities, economy, public relation). Further education is provided through seminars or conferences as well as (often internally organised) short-term trainings (WORKSHOPS 4 & 5). Protected area management in Austria plays a less important role in terms of basic education. Environmental education offers represent an additional aspect to be added to the educational system open for students as well as for all interested citizens.

5.1.5 Traditions and customs

Even though Nepal is only nearly double the size of Austria, around 30 million people populate the country. Nepal's last census counted 102 castes and ethnic groups speaking 92 different languages (CBS 2009).

Many traditions and different lifestyles have persisted until today. A high diversity of castes and ethnic groups who all have their own ways of living does not allow a detailed analysis or comparison of their traditions and customs (PYAKURYAL & SUVEDI 2000).

Nepalese "culture" in general is very spiritual. Religion and castes play a superior role in everyday life (PYAKURYAL & SUVEDI 2000). Family and the community are the most important units in society. The caste system still affects the lives of Nepalese people but it is a more complex system than in India because ethnic minorities are outside the traditional caste system. Different hierarchical caste systems over time have mixed with traditional hierarchical structures and have created a system hard to understand for outsiders (PYAKURYAL & SUVEDI 2000). Ethnic communities are considered to be lower castes than Brahman and Chettri, who are the ruling caste in the country. Dalit are considered the untouchable caste.

Taking the example of the so-called *"Chautara"* (resting places), which are found all over Nepal, these holy sites serve as resting places for all people travelling by foot. Every resting place consists of two trees symbolizing female (bar – *Ficus religiosa*) and male (papal – *Ficus bengalensis*) and is maintained by local villagers. Local cultures are often additionally shaped and influenced by the natural environment (e.g. cultural landscapes, traditional architecture). This also may explain how and why things are done in a certain way.

Figure 32: Visible traditions in Nepal
Chautara near Sauraha, Nepal; Gurung community meeting in Lwang, Annapurna Conservation Area (Huber 2012)

The high cultural diversity, different traditions, customs, priorities and lifestyles require a rather sensitive approach to culture for protected area management in

Nepal. Ethnic diversity also means diversity in terms of communication styles, cultures, languages, hierarchies and priorities and needs.

Austria shows less ethnic diversity but there are still considerable differences, particularly different lifestyles within the country. Lifestyles, traditions and customs have been shaped by various cultural influences from other European cultures, by religion, history and agriculture. Austria has gone through a long process of modernisation throughout the last 200 years, which constantly reduced differences between local communities. Very visible cultural elements are Austrian cultural landscapes which have been formed for centuries by traditional land use techniques and religious wayside shrines ("Marterl"). In recent years, traditions and traditional lifestyles have actively been promoted in protected areas to preserve them. Sometimes local traditions collide with nature conservation issues (e.g. the traditional hunting of Capercaillie). Hunting actually is an important Austrian tradition which is still popular and very relevant for protected area management.

A comparison of traditions, customs and lifestyles of different cultures is neither legitimate nor useful even though some features (e.g. architecture, terraced landscapes) indicate that nature can be a driving force resulting in similar adaptations of cultures.

5.1.6 Language and communication

There is huge language diversity in Nepal. Besides the official language Nepali, 92 different languages are spoken (CBS, 2009). Most of them do not have written records and are often only spoken by small and isolated ethnic groups. Many of those languages are in danger of being extinct. Nepali is the mother language of about half of the Nepalese population and serves as main communication language. English is spoken particularly by well-educated persons. Classes at school are usually taught in Nepali. In government schools and colleges, courses are taught in Nepali whereas in privately owned schools and universities English prevails.

Communication in Nepal is different from communication in Western countries (e.g. shaking one's head signals approval or the role of the hierarchical position). There are many unwritten rules of communication which may vary from one ethnic group to another ethnic group.

Different communication cultures may affect the performance of protected areas. A comprehensive example is the information and knowledge flow process as well as the election process in the buffer zone management of Chitwan National Park. Following communication structures, each hierarchical level communicates mostly with the immediate lower or higher level. Information has to pass several levels from the lowest to the highest level. The same applies for the election proc-

ess of the buffer zone chairperson whose election takes up to half a year to pass all levels. These processes require ample time resources.
Most major institutions and organisations (DNPWC, NTNC, NGOs) are located in Kathmandu. Hence, communication is very important to assure permanent flow of information and knowledge between Kathmandu, the management bodies and community-based organisations or committees (e.g. CAMC in Annapurna Conservation Area).

In Annapurna Conservation Area, the diversity of cultures, languages and communication rules requires specific knowledge and expertise. Personal communication is difficult due to limited accessibility of many villages (INTERVIEW 13). Additionally, illiteracy limits the use of written communication. Internet is an even more limited mean of communication. However, the use of cell phone has improved the communication.

Illiteracy and insufficient knowledge of the Nepali language may affect active participation and involvement of local residents. Management plans are published in Nepali and English (e.g. Management plan CNP: DNPWC 2006), Language diversity and communication, hence, are major issues for protected area management bodies in Nepal.

In Austria the situation seems easier as most Austrians have a common mother tongue although there are some minorities speaking Slovenian, Hungarian or Croatian. However, other languages, in particular English, are increasingly important due to the European network and cross-border cooperation. Few fundamental communication barriers are found in Austria. Dialect may enhance or impede communication. People with different or specific accents may be treated more cautiously and even slightly negatively (HUBER 2011) as they are related with certain stereotypes.

Austria has a highly developed communication infrastructure. Internet access, cell phone network and print media are available everywhere. Direct communication is easily possible as it is no problem to cross the country within hours.

In Austria, all protected areas are confronted with many different stakeholders such as inhabitants, land owners, hunters, political institutions and recreationists. Consequently, communication is a central feature of managed protected areas in Austria. These often have communication and media specialists.

Figure 33: Spiritual landscapes
Machapuchare from Lwang Village in Annapurna Conservation Area and statue of Lakshmi at Muktinath Temple
(Huber 2012)

5.1.7 Religion, ethics and philosophy

The role of religion and philosophy in Nepal, even though fundamental, cannot be easily defined (PYAKURYAL & SUVEDI 2000). Around 80% of the population are of Hindu belief. In the 20th century, Nepal was a Hindu kingdom and the only country worldwide that considered Hinduism as state religion. Ethnic groups in the Himalayas like the Sherpa or Gurung are mostly Buddhist. Religious denominations cannot be clearly defined because traditional Hindu beliefs mix with Buddhist and animistic beliefs resulting in locally varying syncretic beliefs. There are also small Muslim and Christian minorities all over the country (MCCONNACHIE & REED 2010).

Nepal is subject to permanently changing and life-threatening natural disasters (e.g. monsoon, landslides, avalanches…). Hence, nature is an important aspect of religious practices and has been considered important until today. ACHARYA (2005) defines Nepalese religious culture as an *"ongoing mutual interaction of Hinduism, Buddhism, animism and shamanism."* Traditional healers and shamanism still play an important role in mountainous areas. Goodwill of the gods is essential for surviving in the mountainous environment. Mountains play an important role for religions and are often considered the home of gods. Hence, the climbing of Gaurishankar was forbidden until 1979, the peak of Mount Kaylash in Tibet or Machapuchare in Annapurna Conservation Area has been unconquered even until today being a religious taboo (WILD & MCLEOD 2008).

Natural phenomena are often closely related with holy sites (e.g. Muktinath temple in the Annapurna Area). Many gods have the shape of animals (e.g. Ganesha (elephant), Hanuman (monkey), Lakshmi (cow)).

The protected area system in Nepal is partly influenced by religiously significant mountains and holy places. The Himalayas dispose of many holy places which are often be found in currently protected areas even though they have always been *"protected"* even before official designation (WILD & MCLEOD 2008). For instance, it is forbidden to cut down trees or shrubs next to natural springs because it may annoy the spirits of the spring. The current approach to landscape-based conservation in Nepal has led to the transboundary Sacred-Himalayan-Landscape project, which tries to enhance joint conservation and development strategies for this sacred mountain area (GON/MOFSC 2006).

In CNP, several important Hindu temples are located inside the park, which has to be considered by the park management to allow the local people to go to these temples (DNPWC 2006). Another challenge is found in the Annapurna Conservation Area. The temple of Muktinath and its superior significance for both Buddhism and Hinduism have led to continuous increase in religious tourism (INTERVIEWS 16 & 17). Besides numerous western trekking tourists, more and more Hindu pilgrims now come to visit. This puts increasing pressure on local communities because of the different needs of both target groups. A possible conflict arises between trekkers looking for remote nature and religious tourists expecting a comfortable visit of the temple (INTERVIEW 17).

Austria is part of the Christian-occidental culture and is considered a Roman Catholic country but is based on the principle of secularism separating religion and politics. Throughout the last 100 years, the significance of religion in everyday life has constantly decreased. The number of citizens without any denomination increased from zero to 12 per cent in 2001 (STATISTIK AUSTRIA 2012).

The basic philosophy in Austria is similar to many other western countries and favours individualism and materialism (HOFSTEDE 2012).

However, for protected areas in Austria, religion and philosophy play a minor role. Nature conservation was never really linked to religion but more with an ethic need for protecting the heritage, with romantic views of ideal landscapes and with economic benefits (PICHLER-KOBAN et al. 2006). In a wider sense, nature conservation in Austria reflects the biblical understanding of nature with the intention to control it (e.g. conservation of cultural landscapes, active nature management measures). There is also considerable resistance in local residents when it comes to wilderness development (e.g. BAUER et al. 2009).

5.1.8 Gender and diversity

The Global Gender Gap Index ranks Nepal quite at the end and ranks 126 (Austria: 34). However, in terms of political empowerment, Nepal ranks 43 (Austria: 27). This is closely related to the introduction of an obligatory 33%-quota for pub-

lic service and government in 2007 (HAUSMANN et al., 2011, INTERVIEW 5). Despite of these efforts, these groups still remain marginalised (HAUSMANN et al. 2011).

In Austria, gender issues have been increasingly addressed in the past years. Public attention was drawn to gender mainstreaming and equal opportunities. This process was additionally pushed by politics of the European Union.

To draw a detailed picture of the situation of women and minorities in the context of protected areas, the analysis follows the structure of the 5-R method (chapter 3.3.1).

Reflection

During the transition to democracy and the introduction of the quota for women and minorities, the issues were fervently discussed in public and public awareness increased. However, a few years after the momentum gained seem to weaken (HAUSMANN et al. 2011). Traditional roles in society are basically a given. Each caste is supposed to have certain characteristics and ruling castes are supposed to be better rulers (INTERVIEWS 5 & 13). Castes are still part of society and deeply rooted in society and perceived rather selectively. Even if discussing equal opportunities for different castes or ethnic groups, Dalit, the untouchable caste, is often excluded and not even thought of. However, the important role of diversity and gender in biodiversity conservation is increasingly acknowledged. Their knowledge is considered critical for conservation as socio-ecological processes are highly gendered in Nepal (KHADKA & VERMA 2012).

In Chitwan National Park, women and ethnic groups are represented only at low hierarchic levels. The explanation provided was the fact that they are not elected to higher positions. Unequal representation is justified by democratic principles (INTERVIEW 6). However, local residents are increasingly aware of this situation and start demanding a quota for higher positions (INTERVIEWS 8, 9 & 11). In Annapurna Conservation Area, high ethnic diversity results in higher awareness levels. However, among decision-makers and higher level staff, limited awareness was observed (INTERVIEW 12; WORKSHOP 6).

The discussion about gender and diversity has reached the field of protected area management in Austria, but concrete measures are limited.

Representation (Chapter 5.2.2.)

In most Nepalese institutions, women and marginalised groups are not equally represented. Older or middle aged men chiefly from the ruling castes dominate most decision-making bodies (ACHARYA et al. 2007). Chitwan National Park is mainly governed by members of the Brahmin or Chethri caste whereas the local ethnic group of the *Tharu* and women are almost absent in decision-making (INTERVIEWS 9 & 11). Being the largest local ethnic group, they are only represented

at the lowest levels of the buffer zone management committee where the reserved seats rule (quota) applies (INTERVIEWS 2, 5, 9, 11).

In Annapurna Conservation Area, there is a larger share of female and ethnic staff. Prerequisites for the staff are predetermined but demand more different backgrounds favouring organisational diversity. Women and ethnic groups are represented in local committees as ACAP has the right to nominate female and lower caste representatives to CAMCs (NTNC/ACAP 2008). Mother groups play a fundamental role in decision-making processes and without their support projects are difficult to realise (INTERVIEWS 16 & 17). Dalit are still deprived of many benefits from the conservation area and the respective local ethnic majority is in power (INTERVIEWS 13 & 14).

In Austria, women are represented at most levels. However, the more powerful the level is, the fewer women are involved. About half of the staff of Donau-Auen National Park and Hohe Tauern National Park is female. Both parks show a rather diverse composition of staff in terms of professional and individual background. Most of the decision-makers and stakeholder board members are male and middle-aged or older (see chapter 5.2.2).

Resources

Decisions about the distribution of resources are usually made on levels which are dominated certain groups in Austria as well as in Nepal. Interviews indicated that resources are distributed unevenly and indirectly support certain groups whereas marginalised groups receive fewer resources (INTERVIEWS 8, 9, 11). There are only limited platforms for women or marginalised groups (KHADKA & VERMA 2012).

Approaches such as gender budgeting are unknown and not applied either in the protected areas of Nepal or in those of Austria. However, there is more awareness in Nepal as different castes and ethnic groups represent rather visible cultural diversity (KHADKA & VERMA 2012). Consequently, some protected areas such as Chitwan NP try to support specific marginalised target groups (Special target group – STG-focused activity). However, nothing about these activities was reported by local residents (INTERVIEWS 8 & 11).

Rights

The law in Austria and Nepal treats women and minorities equally. The caste system in Nepal was abolished more than 50 years ago. There is a quota system for women and ethnic as well as Dalit groups in all sectors including education and the employment sector (INTERVIEW 2). Contrary to Nepal in Austria, there is no quota for women.

In Chitwan NP and its Buffer Zone, the quota system applies. In the Annapurna Conservation Area, participation of women and marginalised groups is guaranteed by Conservation area regulations (CAR), which grant the management the right to

nominate representatives of women or ethnic minorities to local decision-making bodies (ACAP/NTNC, 2008).

Realia

A strong separation of roles of women and men and different treatment of castes is deeply rooted in the Nepali society (KHADKA & VERMA 2012) which cannot be changed quickly (ACHARYA et al. 2007).

The quota has led to higher representation of women and ethnic groups in local decision-making bodies. However, they seldom reach higher levels because these levels are still elected by lower levels, and so traditional structures prevail (e.g. Buffer Zone Management Committee of Chitwan National Park). People even may renounce to participate because of being afraid to speak Nepali (INTERVIEW 11). They still lack the self-confidence and education to gain access to higher positions even if it was possible (INTERVIEWS 9 & 11). Formal qualifications for national park management applicants requiring a degree in forestry still hampers full compliance with the national quota because there are only few female graduates (INTERVIEW 5; KHADKA & VERMA 2012).

In the management of community forests and in ACAP, the decade-long effort to stronger integrate marginalized social groups and women starts to show the first results as the role of mother groups indicates (KHADKA & VERMA 2012).

Several possible causes for the prevailing situation were derived from the interviews and observations:

- Insufficient access to the network of power which is still dominated by ruling castes or social groups (KHADKA & VERMA 2012)
- Low formal education resulting in low self-confidence
- The century-long developed self-image of characteristics of groups (e.g. *"This caste knows better how to rule")*
- Groups in power stick with one's kind and reproduce the current system
- Representation of organisations and interests is more important than representation of different social groups

In Austria, all social groups have formally the same opportunities. However, there are only few programmes or schemes explicitly addressing female involvement in protected areas (e.g. biosphere reserve Großes Walsertal).

5.2 Results of the knowledge assessments

5.2.1 Vision, objectives and management strategy

The fundamental aims of the protected areas in Nepal are preserving the rich biodiversity as well as enhancing regional development. The Integrated Conservation and Development Programme (ICDP) is an underlying principle in all Nepalese protected areas.
Chitwan National Park focuses especially on the maintenance of the Terai ecosystem and the conservation of large mammals, such as tiger or rhinoceros. Thereby, the prevention of poaching plays a crucial role. By establishing the buffer zone and the increasing focus on improving local livelihoods, the ICDP approach also gained importance in the national park region.

The management strategy of Chitwan National Park is based on the Nepalese principle of *"central management and local implementation"* (INTERVIEW 1), which applies to all national parks that are linked to DNPWC headquarters. However, there is a fundamental principle of good networking and a cooperative approach (Figure 34). Whereas the buffer zone management is strongly driven by internal promoters from the area, the park management is also subject to external input.

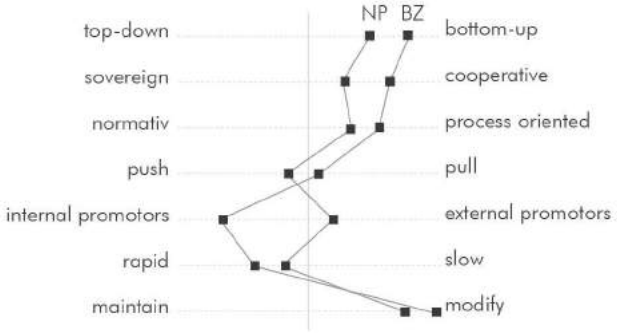

Figure 34: Management principles of Chitwan National Park
Buffer zone management and park management, self-assessment of park representatives

The slogan of Annapurna Conservation Area is *"conservation for development."* The underlying philosophy is *"that effective conservation of natural resources, and improvement of the circumstances in which the local inhabitants live, can't be achieved without active participation of community at all stages of the project, from planning through to implementation and evaluation"* (NTNC/ACAP 2008). The major goals are mitigating the negative environmental impacts, fostering regional development (especially tourism), supporting alternative livelihoods

and promoting linkages between conservation, tourism and regional development. In the Annapurna Conservation Area, people are perceived as integral part of the area. There is a basic understanding that people have to receive something in return for their conservation activities, which will lead to generally positive attitude towards sustainability and conservation principles. In the long term, the management of the conservation area shall be handed over completely to the local communities. The management strategy is strictly participative and cooperative-based on broad internal support (Figure 35). Additionally, it becomes visible that there are differences even within ACAP. Whereas the management and development of isolated Lwang is driven by internal promoters, Jomsom additionally has to deal with external interests as it is amongst the major trekking destinations in Nepal.

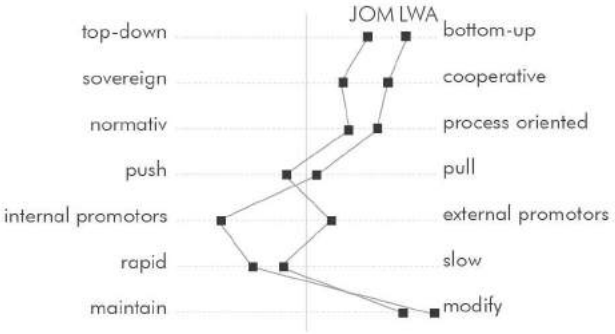

Figure 35: Management principles of ACAP
Self-assessment of park representatives for two different Unit Conservation Offices (Lwang-LWA and Jomsom-JOM)

In Austria, the protected areas have a fundamental vision of preserving nature, of maintaining ecologically valuable traditional cultural landscapes, foster regional development and provide opportunities for its citizens to experience nature. However, individually protected areas show individual priorities according to their management category.

The staff of Hohe Tauern National Park is especially proud of being the largest protected area in the Alps, which encompasses a great variety of different ecosystems, spanning over a large altitudinal range. The main objectives are preserving traditional alpine pastures and promoting wilderness particularly in the high mountain areas. Environmental education and awareness-raising activities are amongst the fundamental goals. Additionally, the management tries to support regional development in the surroundings and fosters the preservation of local traditions.

The management strategy of Hohe Tauern NP is rather cooperative and bottom-up oriented (Figure 36). This is important because 98 per cent of the park is private

property and management issues depend on the benevolence of the land owners. According to the management, the park tries to slowly develop the area and seeks equilibrium between maintaining its assets and improving the overall situation.

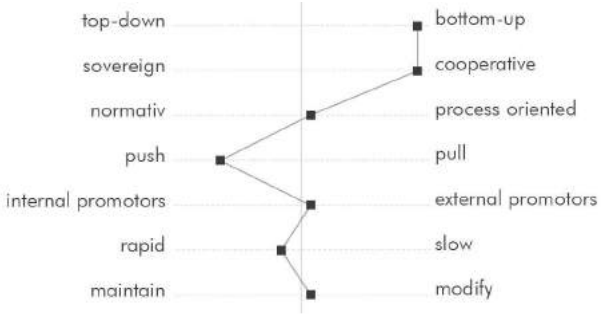

Figure 36: Management principles in Hohe Tauern NP (Carinthian part)
Self-assessment of park representatives

Improving and restoring the riverine ecosystem is *the* objective of Donau-Auen National Park. The park encompasses one of the last major natural/semi-natural and dynamic floodplains in Central Europe. The management staff tries to improve the ecological condition of the alluvial forests and the natural dynamics of the Danube floodplains. The Danube is an important international waterway and due to the proximity to Vienna and Bratislava, flood prevention is an additional important task. Especially during the weekends, Viennese residents use the park for recreational purposes. The management seeks to maximise their nature experience whilst minimising their negative impact on the environment.

The management strategy of Donau-Auen NP is more top-down oriented but nonetheless cooperative (Figure 37). It is strongly process-oriented because the management is permanently forced to adapt to changes (e.g. urban development, Danube shipping developments). Managing a dynamic system such as the Danube floodplains requires dynamic management approaches being open for adaptations.

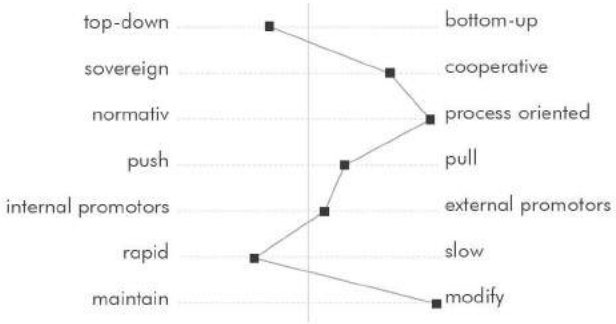

Figure 37: Management principles in Donau-Auen NP
Self-assessment of park representatives

Comparison of Vision and Strategy

These examples show that the basic vision of nature conservation and sustainable development is similar in both countries. Some ideas underlying principles and approaches may vary. Nepalese protected areas strongly refer to the ICDP philosophy including benefit sharing and try to preserve pristine landscapes. Large areas inside and outside of protected areas can still be considered to be wilderness. The presence of large predators and mammals, which pose a possible threat to human existence are a fundamental difference. The overall goal to protect these species requires dealing with human-wildlife conflicts and assuring also the well-being of local residents. Sustainable resource use is a central goal of Nepalese protected areas as the majority of the population is still dependent on the use of natural resources.

In Austria, almost all areas are somehow shaped or affected by human activity and there is a focus towards active support of *"wilderness development"* such as efforts to restore altered ecosystems and to allow natural dynamics. Conflicts about resource use or human-wildlife conflicts are not as strongly threatening human existence as in Nepal.

Recreational facilities (hiking trails, interpretive trails) are quite important in Austrian parks, the protected areas in Nepal are either too dangerous (e.g. Chitwan NP) or inaccessible (e.g. many areas of Annapurna Conservation Area).

Regarding the management principles, it became visible clear that protected areas in Austria and Nepal basically focus more on modifying the local situation. All managers agreed that changes and developments should be realised rather rapidly. Nepalese protected area managers consider themselves very cooperative and bottom-up oriented. Even though structures are very hierarchical, many institutions, NGOs or committees are involved in the management. In ACAP, local residents

even form an active managing unit. In Austria, Hohe Tauern Nationalpark also follows a cooperative and bottom-up approach as much of the area is privately owned and used.

In both countries, protected areas are important drivers of change and development and central nodes in the local network.

Trends

In Nepal, there is a trend towards a more integrative management, involving local communities and considering economic and socio-cultural aspects. In addition, topics such as climate change, ecological networks, emigration and tourism development play an important role.

In Austria, protected areas are in general affected by recreational activities and tourism (e.g. new sports such as Canyoning, trend towards authentic nature experiences). The Donau-Auen NP is additionally affected by suburbanisation trends around Vienna and large infrastructure projects in the surrounding land of Vienna.

Protected areas and their surrounding lands are subject to numerous external influences, global trends and developments. There are several (external) *"drivers of change"* which are relevant in Austria as well as in Nepal:

- Land-use and land-cover change
- Invasive species
- Economic growth and development
- Climate change
- Demographic change
- Globalisation

Many trends that affect protected area management are based on their location and natural features rather than on cultural differences. Mountainous regions, for instance, are supposed to be strongly affected by climate change. Rural protected areas like Annapurna CA and Hohe Tauern NP both face the problem of outmigration and try to foster sustainable tourism. Chitwan NP and Donau-Auen NP are both affected by developments outside the protected area region because riverine systems are open systems.

5.2.2 Available resources

The capital resources (chapter 3.2.2) form the basis of the performance of any protected area. Following the knowledge assessment, the capital is divided into three sections analysing the capital resources of the case studies.

Human capital resources

Chitwan National Park

In general, more people are involved in the management of protected areas in Nepal than in Austrian parks. Chitwan National Park has more than 300 employ-

ees. The park is headed by a Chief Warden, who is designated by DNPWC. Additionally, four Assistant Wardens, representing different districts inside the park, support the Chief Warden and are also in charge of the ongoing management of the park. During the study, it remained uncertain who belongs to the management level and who is considered to be general staff. Hence, it is difficult to compare the staffing between parks in Austria and Nepal. Tasks and functions of the management and general staff overlap frequently (e.g. rangers support research, game scouts are involved in monitoring activities). Out of the 300 employees, 128 are elephant keepers who are in charge of breeding elephants and training them for patrolling.

Next to the park management, one battalion of the Nepalese Army (around 1000 soldiers) is permanently controlling the park and supporting law enforcement and anti-poaching operations.

A forestry degree is a main prerequisite for working at higher hierarchical levels of the management. However, most of the low-level staff also holds at least a forestry certificate or a bachelor's degree in forestry. No information was available about the existence and composition of advisory boards. The management is directly linked to the DNPWC in Kathmandu and is a governmental institution.

Annapurna Conservation Area

The staff of the Annapurna Conservation Area consists of around 150 persons, distributed amongst seven Unit Conservation Offices (UCOs), each with approximately 13 to 17 employees and the headquarters of ACAP in Pokhara with around 50 staff members.

The Unit Conservation Offices (UCO) and 57 Conservation Area Management Committees (CAMC) represent the main bodies for managing ACAP. Whereas the staff of UCOs is employed by ACAP, the CAMCs consist of local representatives and are elected by local people. The CAMC works closely together with the UCOs but it is the CAMC and the people they represent who develop projects, ideas and measures. Various sub-committees (e.g. tourism management sub-committee or forest management sub-committee) dedicate themselves to specific issues.

The staffing of the individual UCOs is defined in the management plan (Table 1). Staff requirements are focusing less on a forestry degree but required qualification is described in detail. Social sciences, economy and tourism specialists are also involved. There is a higher share of female staff but only one of the UCOs was headed by a female manager. Each UCO also employs a gender and women development assistant. However, due to the large number of staff, no detailed data about the individual characteristics of the current staff was available. The same applies to the composition of the advisory board. There are several supervising and advisory boards at different levels.

Table 1: Staffing and required qualifications in ACAP
According to the management plan (NTNC 2008); NRM = Natural Resource management; HQ = Headquarters; UCO = Unit Conservation Office; ISc = Intermediate Science Degree

Position	Number	Qualification	Location
Project Director	1	Basic degree: NRM, Master level	HQ
Senior NR Conservation Officer	1	Basic degree: NRM, Master level	HQ
UCO Chief	7	NRM Graduate + education in the field of social development	UCO (7 UCOs)
Social development Officer	1	Social Science Graduate	HQ
NRM/Livelihood Support Officer	7	NRM Graduate	UCO
Programme Officer	1	Graduate any discipline, preferably management	HQ
Information Officer	1	Graduate in Development communications, information systems	HQ
Community Infrastructure Development Officer	1	Graduate in Civil Engineering	HQ
Community Infrastructure Development Assistant	7	Intermediate in Civil Engineering	UCO
NRC Assistant	7	I.Sc Forestry	UCO
Tourism and Culture Promotion Officer	1	Bachelor in Tourism	HQ
Legal Advisor	1	Bachelor in Law	HQ
Tourism Assistant	7	Intermediate/Certificate Level Degree/ Training in Tourism	UCO
Information and Technology Assistant	1	Intermediate/Certificate Level Degree/ Training in Tourism	HQ
Social/Gender/Women development Assistant	7		UCO
Conservation Education Assistant	7	ISC Forestry	UCO
Health Assistant	var.	Senior Health Assistant Worker	UCO
JTA	var.	ISC Agriculture or Agriculture Diploma	UCO

Donau-Auen National Park

Austrian protected areas have comparatively less employees. Both national park management bodies of the case study areas in Austria showed a similar size of staff.

The park employs 21 people, 12 of them being female (Figure 38). About half of the staff has an academic background, 43 per cent have reached high school graduation level, which is comparable to a university entrance diploma. The professional background of the academic staff is rather diverse. Only 38 per cent are specialized in natural sciences, five per cent in economics and 57 per cent have various professional backgrounds. The age of the staff is not evenly distributed. Almost half of the staff is aged 50 or older. Only one quarter of the total staff is

found in the age group below 40 years. About one third of the staff comes from the national park region whereas the rest are Austrian citizens.

The Viennese part is additionally managed by a department of the administration of the city of Vienna.

Two important boards steer, support and advise the national park management. The stakeholder board which guarantees involvement of all important groups and institutions affected by the national park is the most important board. It consists of 33 persons, eight of them being female. Most board members (42%) dispose of a political background, which seems logic as the national park encompasses two federal states of Austria. Twelve per cent are land users and six per cent represent the regional economy. Almost 70 per cent of the board members come from the national park region and around 40 per cent hold an academic degree.

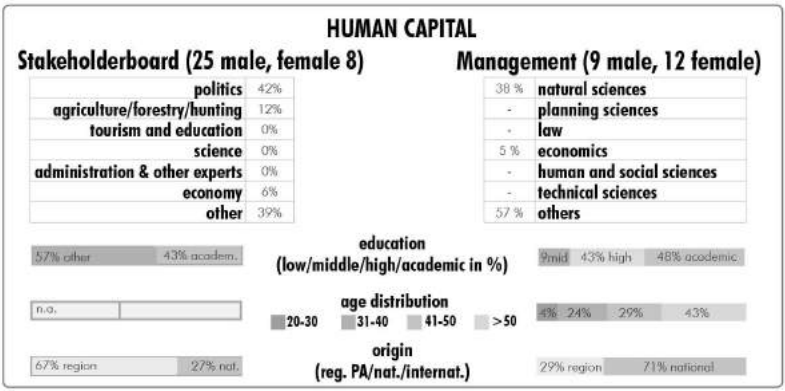

Figure 38: Human resources of Donau-Auen NP
Socio-demographic information on stakeholder board and management; data provided by Donau-Auen NP

The scientific advisory board consists of selected experts who are supposed to inspire and supervise scientific activities in the national park. All members have an academic and scientific background. Out of eleven members, there is only one female member. Nine per cent come from the protected area region, 67 per cent are national experts and 18 per cent come from countries other than Austria.

Hohe Tauern National Park

The Hohe Tauern National Park (Carinthian part) has 22 employees, nine of them being female (Figure 39). About a third of the staff has an academic degree; another third holds a university-entrance diploma. Other staff completed compulsory education, middle school (without A-levels) or a professional training. Among the academic staff, almost 60 per cent has a degree in natural sciences and a third

in technical disciplines. The distribution of age groups among the staff is quite balanced. Each of the age groups (21–30, 31–40, 41–50, over 50) accounts for approximately a quarter of the staff. Around 80 per cent of the staff has its roots in the protected area region.

Similar to the Donau-Auen National Park, the stakeholder board and the scientific advisory board are the most important boards. The stakeholder board consists of 18 members, three of them being female. Almost half of them are political representatives, 22 per cent are representatives of land users, and 11 per cent are tourism representatives. Almost half of the members hold a mid-level degree (middle school, apprenticeship, compulsory education). Other board members hold a university entrance diploma or a university degree. More than 60 per cent of the members are local residents. The scientific advisory board consists of eight members, all of them aged well over 50 and male and none with a local background.

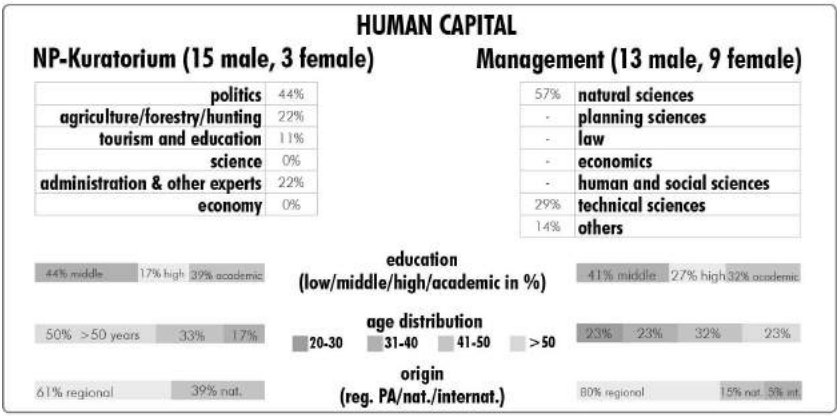

Figure 39: Human resources of Hohe Tauern NP
Socio-demographic information on stakeholder board and management; data provided by Hohe Tauern NP

Structural capital resources

Chitwan National Park headquarters are in Kasara, a small village inside the park, which consists of the park headquarters, a Gharial breeding centre, a vulture breeding centre, a wild animal orphanage and the headquarters of the army battalion. The location can only be accessed by a bridge and by passing an Army checkpoint (Figure 45, p. 133). Four subsidiary offices, for the assistant wardens are located in different districts in the park. Around 50 posts inside the park are in charge of controlling the area. An elephant breeding centre is located near Sauraha. Inside the park, an extensive road network and several hiking trails for arranged jungle tours have been established. The web infrastructure is less developed and

not updated regularly. Offices, headquarters, breeding centres, and the road network are considered to be the most important infrastructure. The staff is rather satisfied with the existing infrastructure, even though the research infrastructure is considered deficient. Interpretive trails do not exist but are not considered necessary.

The Annapurna Conservation Area has a quite well equipped infrastructure. Generally, the budget allows more amenities than government-funded administrations. The headquarters of ACAP as well as a visitor centre are situated in Pokhara outside ACAP. Each of the seven UCOs has its own office and housing. Several checkpoints are in charge of controlling the permits of incoming and outgoing tourists. There had hardly been any road network for a long time. Hence, the government started to construct a road network inside the park connecting the individual villages. However, this led to a severe conflict of interest with trekking tourists who felt increasingly disturbed by dusty roads. Due to adverse climate conditions, the road network is frequently blocked by land-slides. Mobility inside the park still strongly depends on walking, going by plane, by donkey or horse. The infrastructure of the UCOs visited is sufficient to fulfil the assigned tasks but access to research infrastructure and information is more difficult and only accessible/available at the headquarters in Pokhara. The visitor infrastructure is concentrated along the trekking trails. Most tourism infrastructure (hotels, restaurants, tea houses, homes) is privately owned or maintained by local initiatives. Virtual infrastructure is rather basic. There is no website available. Online information about the conservation area is integrated into the website of the NTNC.

The Donau-Auen National Park has two major information centres, the *"Nationalparkhaus"* in Vienna (mainly providing information for tourists) and the main visitor centre of the park in Orth, located along the Danube about 40 kilometres southeast from Vienna. All over the national park region, several minor information points can be found. Youth camps inside the park are available

The management office and a subordinated office are located close to the visitor centre in Orth. The park has also accommodation for volunteers. The technical infrastructure was de facto considered complete. No deficient issues were mentioned. The park management decided not to establish interpretive trails.
An ample trail network is provided for visitors. It is even considered too extensive as it increases the already high visitor pressure. Most of the visitors use the Viennese part of the national park because of its accessibility. Thus, the visitor infrastructure is required to manage the large visitor numbers.

Figure 40: Protected area management offices in Nepal and Austria
CNP National Park headquarters in Kasara; Unit Conservation Office Lwang, ACAP (Huber 2012); Donau-Auen NP headquarters in Schloss Orth (Spika, 2012); BIOS national park centre of Hohe Tauern NP in Mallnitz (Jungmeier, 2008)

The Hohe Tauern National Park (Carinthian part) has a visitor centre in Mallnitz. The so-called BIOS shelters a part of the management of the Carinthian part of the national park (the other part is located in Großkirchheim) as well as a café, a shop and a visitor information centre. The technical and IT-infrastructure is considered complete by the management. Research infrastructure, however, is considered deficient and the park does not have research stations or laboratories. Research is mainly realised by external partners but supported and coordinated by the national park management.

Most of the infrastructure of the national park is visitor infrastructure. Besides the BIOS, there is an extensive system of hiking trails, interpretive trails, alpine huts, the Grossglockner High Alpine Road, a famous scenic road leading through the national park and infrastructure to access Austria's largest glacier, the Pasterze. National park information points are located in several communities. Public transport for hikers is available to access trailheads inside the park. The web infrastructure of the national park is well developed. Smartphone applications can be downloaded from the website. Results of research projects are available in an online library and online shop. Additionally, the national park region is promoted on the internet (e.g. http://www.naturerleben.kaernten.at).

Relational capital resources

Chitwan National Park has an extensive relational network. According to the management, there are a lot of co-operations at all levels. The management of CNP collaborates with many international NGOs and conventions, with other protected areas, with educational and research institutions and experts. Numerous national and international organisations are active in the area and often established regional offices. CNP has been used as a good practice example and thus attracts international researchers and experts. IUCN and WWF are major international partners. The transboundary cooperation with India gains in importance.

Under supervision from the national park management, particularly the Buffer Zone Management Committee and the Biodiversity Conservation Centre (BCC) of NTNC are contributing to the management of the area. NTNC and its resources play a major role in terms of technical and financial support for government-funded national park management.

At the national level Chitwan NP is closely linked to a large number of organisations of all types. The centralized structure of DNPWC facilitates collaboration with other Nepalese parks. Collaboration with the Nepalese army is fundamental for law enforcement in the park. Additionally, landscape-based conservation approaches (e.g. TAL) require an ample cooperation of various institutions and protected areas.

At the local level, the relational network is very extensive, especially since the establishment of the buffer zone and its management the residents and institutions of the protected area region have increasingly been involved. User groups of the buffer zone run many projects and closely cooperate with the national park and the buffer zone management. The local nature guides, the buffer zone management committee, community-based organisations, youth clubs and the police are considered the most important partners.

Figure 41: Relational network of Chitwan NP
Self-assessment of park representatives, number of cooperation partners by type

Since its establishment, the Annapurna Conservation Area Project has attracted much attention on a global scale and has been frequently praised as a best-practice model for conservation. The relational network is rather complex and could not be displayed as intended in the knowledge assessment. Different levels of the management are in charge of cooperation at different levels. Whereas international and national cooperation is managed by ACAP headquarters in Pokhara and by NTNC in Kathmandu, the individual UCOs are in charge of local cooperation.

The interviews revealed that the international interest in the area has decreased throughout the years, especially after Maoist insurgency in the mid-2000s. International researchers are still conducting research but donors and development agencies mostly decided to draw their attention to other places. The network at the

national level is very strong. NTNC is not only in charge of ACAP but of supporting and managing all Conservation Areas in Nepal. Hence the cooperation and exchange of the conservation areas is quite intensive. However, local cooperation is considered most fundamental for the ongoing management of the area. The knowledge assessment which was realised in two UCOs showed that they do not only cooperate with each other but are also closely linked with most of the local institutions and that they are more or less a part of the local system. Their main contacts are the local CAMCs, which most of the time facilitate local cooperation. Additionally, individual UCOs cooperate regarding specific issues. The system of ACAP can be considered a very interdependent and interlinked regional system with a less strong linkage towards external institutions.

At an international level, the Donau-Auen National Park collaborates with a large number of institutions and other protected areas (Figure 42). There is intensive cooperation with parks and countries located along the Danube. Proximity to the Slovak border leads to frequent cross-border co-operations (e.g. cooperation with the Slovak NGO Bratislavské regionálne ochranárske združenie). As the Danube crosses several European countries and represents an important waterway, international cooperation is important. *"Danubeparks"* is an organisation facilitating cooperation between parks along the Danube. It was established by the International Commission for the Protection of the Danube River, an international organisation working on the implementation of the Danube River Protection Convention.

Donau-Auen National Park shows a dense network at a national level. Political and administrative institutions play a prominent role. The national park cooperates with a large number of national experts. The most important national partners are the *"via donau"* (Austria's waterway management and development company) and the *"MA45 Wiener Wasserbau"* (Vienna Water Engineering) both closely related with water management of the Danube. *"Nationalparks Austria,"* the Austrian umbrella organisation for national parks, is considered a very important partner. The proximity to Vienna and its universities allows ample cooperation with universities and a close link to science.

Figure 42: Relational network of Donau-Auen NP
Self-assessment of park representatives, number of cooperation partners by type

The local network of the national park is comparatively small and dominated by political and administrative institutions. The most important regional partner is the community of Orth where the national park headquarters are located. The castle of Hof, the archaeological site of Carnuntum and the Donau Niederösterreich tourism organisation are partners in terms of tourism and recreation.

The Hohe Tauern National Park (Carinthian part) has a moderate international and national network (Figure 43). The relational network of NPHT chiefly differs from the Donau-Auen National Park and resembles more the relational network of Annapurna Conservation Area. At an international level, IUCN and ALPARC (Alpine Network of Protected Areas) are major partners. Triglav National Park in

Slovenia was mentioned as a partner park but exchange was considered little active.

Figure 43: Relational network of Hohe Tauern National Park (Carinthian part) Self-assessment of park representatives, number of cooperation partners by type

At the national level, the park has a large pool of experts. *"Nationalparks Austria"* also plays an important role. NPHT stretches across three federal states of Austria. Their relationship is similar to a transboundary protected area – they are one park but have three individual administrative units in each federal state. A joint committee, the National Park Council consisting of representatives of all three management units, allows discussing and deciding joint issues. This is an important node in their national network. Additionally, the national park management is supported by NGOs such as the Association of friends of the national park. A special feature of Hohe Tauern National Park is the cooperation with international

and national companies funding particular activities (e.g. Coca Cola Junior Rangers).

A large number of co-operations and relations can be found at a local level. The national park management closely collaborates with regional educational institutions (schools). There is extensive interaction and cooperation with stakeholders, politics and associations in the region, partly institutionalized through various stakeholder boards.

5.2.3 Application of the Fields of Activity

The Fields of Activity (FoA) (see chapter 2.5) are considered core activities of protected area management and analysed at the case study level.

Chitwan NP

Little is known about the *Pre-phase* of the planning process. Chitwan NP was established almost 40 years ago by the former king. The buffer zone establishment process was analysed to document actual planning approaches. The establishment of the buffer zone in 1995 was accompanied by an extensive participation process involving local communities. The process mostly followed the steps as proposed by the *Pre-phase*.

The *Basic planning phase* for the national park was carried out by DNPWC and followed a top-down approach with limited participation. No information was available about the detailed planning process. A *Planning handbook (FoA-5)* is unknown as a step in the planning process. The planning of the buffer zone followed participatory principles influenced by experiences made during the establishment of the Annapurna Conservation Area.

Basic investigation (FoA-7) and *Implementation planning (FoA-8)* were carried out for the planning of the buffer zone by DNPWC.

The *Detailed planning phase* was widely realised as proposed by the FoA approach. Both national park and buffer zone had a comprehensive management plan containing *Mission statement (FoA-10)*, visions, targets and actions. *Economic programmes (FoA-12)* were of minor importance (NAKARMI 2007). No concrete economic programmes were available neither for the buffer zone nor the national park. Although there were many projects focusing on economic development, there was no specific programme or strategy provided by the buffer zone or national park management. However, the 50 per cent of the revenues of the park provided for the buffer zone had to be allocated to certain activities defined in the management plan:

- 30 per cent for community development (e.g. school building, irrigation, drinking water)

- 30 per cent for conservation in the buffer zone (e.g. forest management, wildlife habitat management)
- 20 per cent for income generation and entrepreneurship (e.g. saving credit programme)
- 10 per cent for conservation education (e.g. Eco-club, study tours)

There are existing programmes but most of them are provided and developed by other institutions. Chitwan National Park has a detailed *Ecosystem-based management plan (FoA-11)* for its major habitat types. Additionally, specific species-based management plans are used for species of special interest such as tiger or rhinoceros. However, species-based management plans are not bound to certain protected areas but span the range of species at a national level.

The *Implementation phase (internal processes*) widely complies with the issues as proposed for this phase by the FoAs. The *Evaluation of management effectiveness (FoA-15)* is the only FoA that is not applied. However, there has been an external evaluation of the management effectiveness following the RAPPAM methodology by WWF (NEPALI et al. 2006). DNPWC in Kathmandu is responsible for *Personnel and organisational development (FoA-14)* and nominates the Chief Warden who is fully responsible for individual decisions in the national park. The composition of the buffer zone management committee is the result of a democratic election process.

Financial issues are defined in the management plan which is valid for two years. However, expenditures and revenues are not constant. Due to varying and unpredictable expenses for law enforcement activities and varying revenues by tourist permit fees, *Business planning (FoA-16)* is subject to permanent change (INTERVIEW 7). Both the national park management and DNPWC in Kathmandu are in charge of *Data and information management (FoA-18)*. DNPWC has the advantage of receiving data from all national parks in Nepal, which facilitates a systematic overview of activities of all national parks. Technical infrastructure for data and information management at the national park is limited. NTNC and numerous NGOs are also active in the area leading to a situation that data and information is widespread among many places. *Research setting and monitoring (FoA-19)* is a major issue for the national park. Chitwan National Park is one of the most intensively studied areas in Nepal and has a long tradition of research, mainly dedicated to issues concerning natural science. Research proposals are evaluated and have to be approved by DNWPC and the national park management. Without research permit, no research activities are allowed. DNPWC even published research guidelines for protected areas of Nepal (www.dnpwc.gov.np 2012). Funding is a major restriction for research in Chitwan National Park (INTERVIEWS 2, 4, 5, 7).

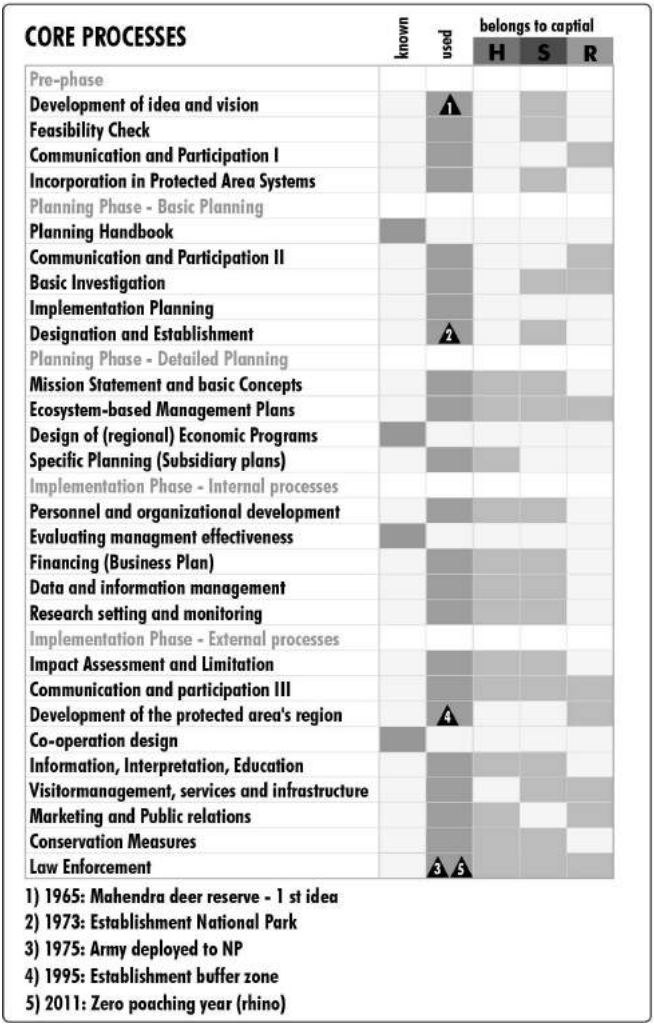

Figure 44: Use of Fields of Activity in Chitwan NP
Known = FoA is known but not applied, used = FoA is applied, distribution of knowledge: H = human capital (knowledge bound to person), S = structural capital (knowledge is documented), R = relational capital (knowledge is externally available in the PA network); 1)–5) key events in the history of the protected area; self-assessment of PA management

The FoAs of the *Implementation Phase (external processes)* are widely applied at least in some way. *Impact assessment and limitation (FoA-17)* is considered an important issue. Due to fact that the ecosystem is strongly influenced by the river, projects outside the national park have an immediate impact on the park. However, outside the national park or buffer zone areas, the national park management has no right to evaluate the possible impact of projects on the park. Permanent participation is well-established in the inhabited buffer zone, even though equal participation of all groups remains unclear (INTERVIEW 9, 11, chapter 5.1.8).

The *Development of the protected area region (FoA-21)* is in the responsibility of the buffer zone management and the local political units (District Development Committees, DDCs). The national park provides 30–50 per cent of its revenues for the buffer zone management which is obliged to use a fixed percentage of this money for regional development activities. *Cooperation design (FoA-22)* is rather informal even though the management is intensively cooperating with numerous organisations at all levels.

Information, interpretation and education (FoA-23) are important issues for Chitwan National Park. Related activities range from environmental education offers, nature guide training courses to the provision of basic education opportunities in the buffer zone area. The buffer zone management committee is obliged to spend a fixed percentage of its budget on education conservation and development activities. Additionally many other organisations in the area focus on education. The national park management communicates through a monthly bulletin and provides information for the buffer zone management and NTNC, which pass the information to the lower hierarchical levels and spread the information amongst local residents.

Although Chitwan National Park is a major tourist destination, there is no comprehensive visitor management concept *(FoA-24)*. To enter the national park, it is necessary to buy a permit and hire guides trained by the national park. Major tourist attractions are elephant safaris which take place in the national park area and in the buffer zone. Only one lodge exists inside the park (Tiger Tops) which is considered as unjust by many other tourist dependent enterprises. In 2012, the government has decided to finally remove the lodge from the park. The national park provides some tourism infrastructure such as a visitor centre and breeding centres for elephant, gharial and vulture. General guidelines for responsible tourism exist but are not decisively enforced. *Marketing and public relation (FoA-25)* activities only play a minor role. Most of the tourism infrastructure is located at the border of the park and managed by private companies (e.g. in Sauraha). These companies provide lodging and tours inside the park, sell souvenirs, offer local handicraft and promote the area. A continuous strong growth of tourism is expected. The national park has its own website which seems not regularly maintained.

The implementation of *Conservation measures (FoA-27)* is a major task of the management. In the management plan, they are clearly defined and elaborated in a comprehensive way. However, full realisation is limited by available resources. The realisation of actions is supported by local NTNC staff. Neophytes are an increasing problem which might require increased efforts in the future. *Law enforcement (FoA-26)* is amongst the most important tasks of the management. A considerable amount of the annual budget is required for law enforcement activities. Tiger, rhinoceros or elephants are the target of poachers and need active protection. Hence, one battalion of the Nepalese Army is located next to the park headquarter and totals 1000 soldiers. Around 50 armed posts throughout the park control illegal activities (Figure 45). Additionally, the park management closely collaborates with local informants and the local police. In 2011, not a single Rhinoceros was poached. This event was celebrated as the first *"Zero Poaching Year."*

Figure 45: Ongoing management and activities in Chitwan NP
Armed check post at CNP entrance; elephant safari in Baghmara Community Forest, CNP Buffer zone (Huber 2012)

The superior importance of wildlife management is not adequately addressed by the FoAs. In CNP, there are significant populations of tigers, rhinoceros, elephants, gharials and sloth bears. Activities of the national park encompass anti-poaching operations, monitoring, predator ecology and human-wildlife conflicts. Compensation schemes are becoming increasingly important as populations grow and start to migrate outside the NP borders. However, compensation schemes are insufficient (INTERVIEWS 2, 5, 6).

Annapurna Conservation Area

The Annapurna Conservation Area Project (ACAP) is a successful case of a co-managed protected area. In general, the *Pre-phase* is well-known and well-documented because of its innovative character. Principles are based on the ICDP (Integrated Conservation and Development Programme) approach (chapter 5.1.3). No deliberate *feasibility check (FoA-2)* was realised. However, in the beginning, a rather small pilot region was chosen which could be considered a large-scale feasi-

bility project. As soon as the project turned out to be very successful, the area was gradually extended to its current size of almost 8 000 km². This different planning approach is presented in detail in Box 2. Right from the start, the development process was completely participatory. Its organisational structure involved local representatives as part of the management, and the final vision is to build up as much organisational capacities to enable local communities (CAMCs) to operate independently. Until then, the NTNC provides the overall structure and manages the area as well as this participative process.

The *Incorporation into the protected area system (FoA-4)* did not really take place because this type of protected area is unknown by IUCN (although recognized as management category VI) and represents a nationally protected area category. For a long time, ACAP was the only Conservation Area but by 2013, there have been six (http://www.dnpwc.gov.np/protected-areas/conservation-areas.html) of them forming an integral part of the Nepalese protected area system.

The *Basic planning phase* did not include a *Planning handbook (FoA-5)*. The whole process was strictly bottom-up and followed a broad participatory approach. *Implementation planning (FoA-8)* and *Basic investigation (FoA-7)* were done by NTNC with support of the local population. However, until today, there has been a lack of detailed basic data about ecosystems and biodiversity in the park because this did not have the highest priority (INTERVIEW 12). No specific criteria had to be fulfilled for the establishment as it had been a pilot area and a new protected area category. Moreover, it set the standards for the guidelines for conservation areas that followed later on.

Box 1: The planning phases of ACAP – A different planning approach

The establishment of Annapurna Conservation Area provides an illustrative example that planning of protected areas does not necessarily have to follow the phases as provided in the FoA approach. There was a deliberate decision to first test the new approach on a rather small scale beforehand. Its establishment is a continuous process including several different phases.

- In 1986, a pilot area around Ghandruk (ca. 800 km²) was established to test the new concept in reality and its suitability for Nepal
- As it proved to be successful, the area was extended in 1990 including the surrounding areas of Lwang and Sikles
- In 1992 the last extension took place and increased the area to its 7 629 km²
- From 1997 onwards, five more conservation areas all over Nepal have been established according to the same principles

ACAP has a comprehensive management plan which provides the framework and goals for the work individual UCOs and CAMCs. The management plan is elaborated in a collaborative way by external consultants who collect information all

over the conservation area and integrate the ideas of the staff and local communities. The management plan sets different goals and targets for different UCOs as they show a large variety of different characteristics (in terms of ecosystems, culture, ethnic group, language, climate, vegetation, economic structure, religion). In general, the management plan strongly focuses on regional development and conservation of natural resources.

Ecosystem-based management plans (FoA-11) are not available in detail. There is an overall management plan which includes different management zones based on land-use and eco-system. However, detailed programmes and concrete measures are not systematically provided as nature conservation is not a high-priority issue for local communities. ACAP does not provide *Regional economic programmes (Foa-12)* since the local communities decide for themselves which projects they want to realise. General focus topics and goals are outlined in the management plan. Many CAMCs (local management committees) form sub-groups which develop programmes for specific issues (e.g. tourism development subcommittee).

The *Implementation phase (internal processes)* basically complies with the activities as proposed by the FoAs. ACAP headquarters and NTNC are in charge of providing the overall framework (e.g. management plan, guidelines) and of providing technical and financial support for local CAMCs. *Evaluation of management effectiveness (FoA-15)* is not implemented, but it is planned to develop an instrument to self-evaluate the management performance. However, it is extremely difficult to evaluate the success of such a decentralized structure (INTERVIEW 1). ACAP and NTNC headquarters are in charge of *Organisational and personnel development (FoA-14)* issues. There are clear standards for staffing of UCOs and a framework for CAMCs (chapter Human Capital). Organisational structures are well defined and clear.

At the beginning ACAP was strongly supported by international donors. Tourists have to acquire an entry permit, which is issued by NTNC. Consequently, park revenues are directly influenced by the number of tourists. When visitor number strongly dropped during the period of *Maoist Insurgency*, revenues also strongly decreased. ACAP distributes revenues amongst all conservation areas and the money has to be spent according to a specific key (30-40% Biodiversity Conservation, 20-30% ecotourism, 15-20% sustainable livelihoods, 10-15% institutional development, 5-10% Culture and Heritage, maximum 3% human resource development of ACAP staff). Only around 15 per cent of the budget comes from external sources.

Data and information management (FoA-18) is basically done by ACAP headquarters in Pokhara, where all the information from the UCOs is collected. At the individual UCOs level, access to information is difficult due to limited internet access and remotely located offices, which are partly only accessible by plane or

by foot. *Research setting and monitoring (FoA-19)* is no priority in ACAP because the main focus lies on regional development. Although a lot of research is conducted by different organisations (particularly social sciences) there is no systematic approach towards research in the area.

Regarding the *Implementation phase (external processes)*, ACAP basically applies all FoAs except *Impact assessment and limitation (FoA-17)* and *Co-operation design (FoA-22)*. However, the management is well aware of the need for legal options for realising impact assessments. So it is likely that it will be integrated into the tasks of the management soon.

Communication and participation (FoA-20) in the implementation phase is fundamental for ACAP because local communities decide upon the development of the area, the content of the projects and the measures set. The park management unit rather serves as an institution providing guidance, training, technical and financial support for the work of local communities. UCOs serve as a mean of communication between CAMCs and ACAP headquarters. This works in both ways. Management, community involvement, regional development and local institutions are all closely interlinked and can hardly be seen separately.

Next to resource protection, *Development of the protected area region (FoA-21)* is a priority of ACAP. There is no structured *cooperation design*, which does not necessarily mean that there is no design at all. It is probable that cooperation is working, but the management is not aware that they have rules for cooperation.

Information, interpretation and education (FoA-23) are fundamental tasks of ACAP. ACAP provides teaching materials, cooperates with schools, focuses on environmental awareness raising activities, provides scholarships and engages in institutional capacity building. To increase the capacity of its staff, employees regularly rotate between the different UCOs.

Tourism is the most important income source for ACAP and conservation areas in general. Hence tourism related activities are strongly promoted. However, despite increasing visitor pressure there is no comprehensive tourism management plan. Several communities have individual tourism development strategies. The Upper Mustang Area only allows a limited number of foreign visitors per year to minimize their impact on local communities, but this is not consequently enforced. There is an extensive tourism infrastructure, which is mostly privately owned, but often supported by ACAP. Guidelines for responsible tourism offers are applied. Some issues on larger scales such as the road construction-trekking tourism conflict require addressing on a superior level. There are several museums and a visitor centre in Pokhara. Despite its popularity there is no website for ACAP. A short profile of the area is provided on the website of NTNC (http://www.ntnc.org.np/project/annapurna-conservation-area-project 2012).

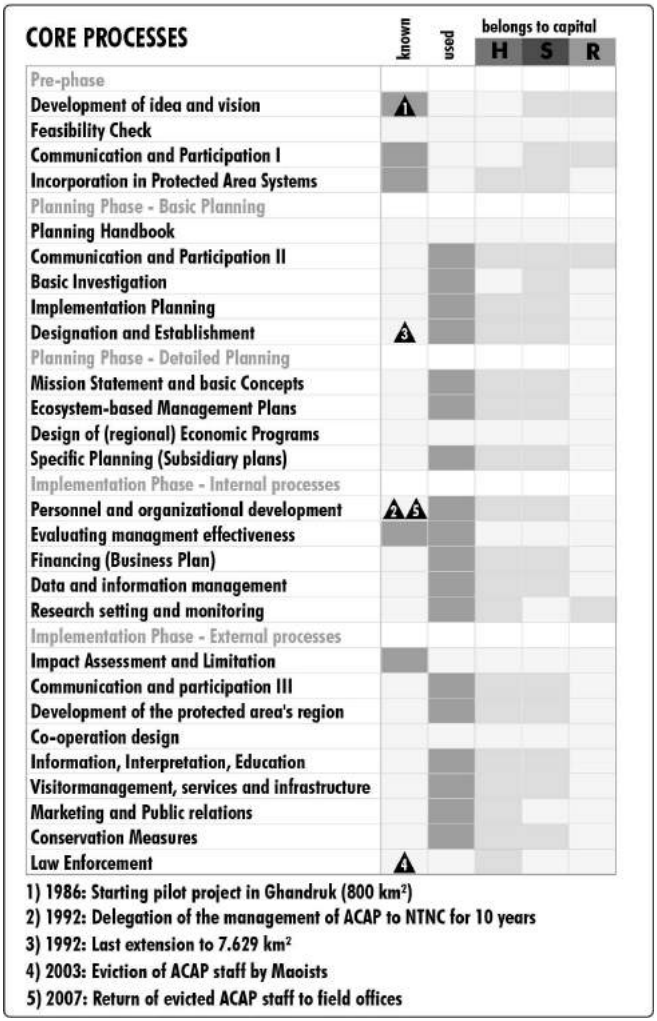

Figure 46: Use of Fields of Activity in Annapurna Conservation Area
Known = FoA is known but not applied, used = FoA is applied, distribution of knowledge: H = human capital (knowledge bound to person), S = structural capital (knowledge is documented), R = relational capital (knowledge is externally available in the PA network); 1)–5) key events in the history of the protected area; self-assessment of PA management

Conservation measures (FoA-27) depend on the motivation of individual communities or dedicated subcommittees. It is their responsibility to set certain measures and develop resource conservation projects. This is a challenging situation, because local communities focus more on development and give less priority to conservation aspects (INTERVIEWS 12, 13, 16). Most of the conservation measures are related to reforestation. There is strong focus on forest conservation and plantation activities, use of renewable energy sources, waste management, or large mammal protection (e.g. snow leopard).

Law enforcement (FoA-26) is less important than in Chitwan National Park. However, increasing poaching activities were reported (INTERVIEW 12). Illegal activities can be reported to ACAP staff, which investigates the case and collaborates with local communities and local police. Many communities have anti-poaching subcommittees.

Donau-Auen National Park

The knowledge assessment of the Donau-Auen National Park shows a clearly structured and detailed application of all Fields of Activity except of those deliberately chosen not to apply.

The *Pre-phase* of Donau-Auen National Park is well documented, because of broad public resistance to a hydro power project. Citizens occupied the alluvial forests leading to a broad public discussion about the future of the wetlands. The *Pre-phase* and *Planning phase* lasted for about 12 years starting with an occupation of the wetlands in 1984 and ending with the establishment of the national park in 1996 (PICHLER-KOBAN et al. 2006).

The *Basic planning phase* was also very extensive. A *Planning handbook (FoA-5)* was unknown by then, but the planning process was well structured. Broad participation was guaranteed by the strong public interest in the process. In 1991 a commission for planning and preparing the national park was established. The long planning phase guaranteed a comprehensive gathering of basic data to support the implementation planning process.

The *Detailed planning phase* is considered complete covering all relevant *Basic concepts and a mission statement (FoA-10).* They were integrated in a comprehensive 10-year management plan defining the mission, vision, goals and measures. The national park management has specific *Ecosystem-based management plans* including recommended actions and measures for its most important habitats and ecosystems. The design of regional economic programmes is not a task of the national park. *Specific planning (FoA-13)* and the integration of subsidiary plans are considered very important. The proximity to a large city, urban sprawl, the importance of the Danube as a waterway, and the adjacent intensive farming activities demand specific programmes and strategies.

The *Implementation phase (internal processes)* complies completely with the FoAs as proposed. There is clear *Personnel and organisational development (FoA-14) being* supervised by the director of the national park. An organisational chart provides a transparent and clear structure.

Evaluating management effectiveness (FoA-15) is an important issue for the national parks of Austria. An evaluation of management effectiveness has already been realised and should be implemented more frequently. The national park has a business plan. *Financing (FoA-16)* is secured by contributions of the Federal government allowing planning security.

There is a sophisticated *Data and information management (FoA-18)* system allowing digital access to documents, publications and data. A GIS-system is available. The management outlined that the most important question is how to administrate this ample knowledge database to keep it accessible and how to identify relevant knowledge. Advanced technical infrastructure is needed to handle this problem. The national park also owns a small library.

Research setting and monitoring (FoA-19) is a major part of the work of Donau-Auen National Park. The Danube floodplains especially attract limnologists, biologists and ecologists. The area has a long history of research and the proximity to a several universities in Vienna makes the area accessible for researchers. The national park also provides a unique opportunity to investigate high visitor pressure on natural systems. To guide and structure research and monitoring activities a research and monitoring concept was elaborated.

All but one FoA of the *Implementation phase (external processes)* are used by the management of Donau-Auen National Park. *Impact assessment and limitations (FoA-17)* is important due to the urban sprawl and many large (infrastructure) projects, which are constantly planned and realised in immediate proximity to the park. According to Austrian law an EIA (Environmental Impact Assessment) is required for large infrastructure projects. Hence the park management is frequently involved in EIAs.

Several formalized stakeholder involvement structures are well established. Especially stakeholder boards make it possible to take regional or local interests into account. The most important stakeholders are land owners, political representatives of the federal States of Vienna and Lower Austria, as well as the Austrian Bundesforste AG (Federal Forestry Company). All boards and the management meet on a regular basis in the “management board”, which is headed by the national park director, to discuss overall plans, strategies and programmes.

The management has certain guidelines for cooperation and a formalized *Co-operation design (FoA-22)*. This is considered necessary because of the widespread national and international relations and co-operation especially along the Danube.

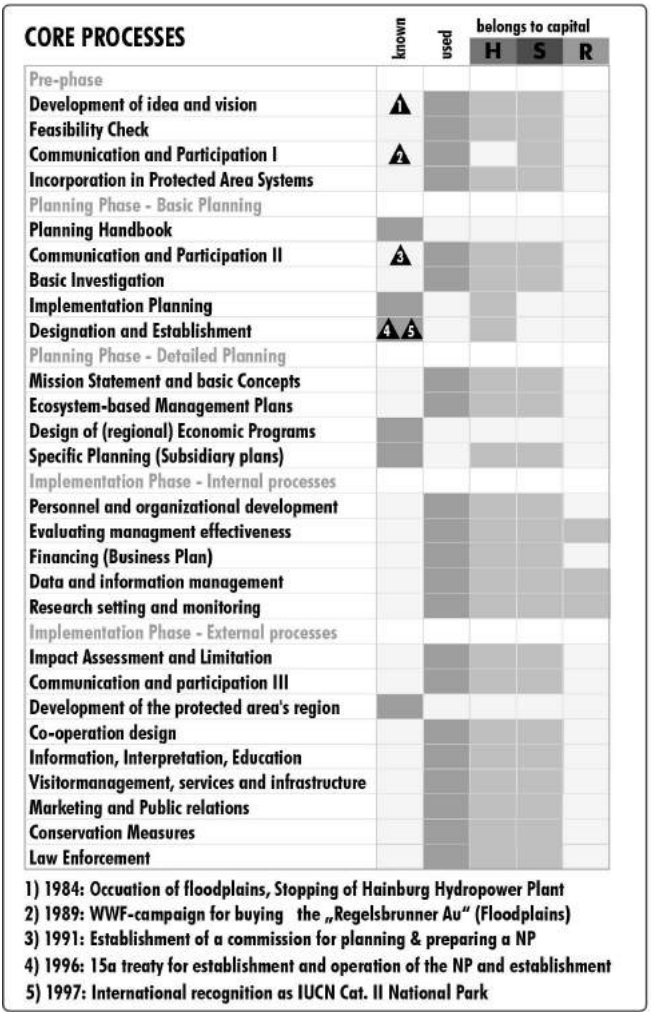

Figure 47: Use of the FoAs in Donau-Auen National Park
Known = FoA is known but not applied, used = FoA is applied, distribution of knowledge: H = human capital (knowledge bound to person), S = structural capital (knowledge is documented), R = relational capital (knowledge is externally available in the PA network); 1) –5) key events in the history of the protected area; self-assessment of PA management

Information, education and interpretation (FoA-23) are important activities of the national park. The management provides information and education offers. Awareness raising activities are important because of huge numbers of visitors frequently enter the national park. Visitor management is crucial for the national park particularly in the areas that are easily accessible from Vienna. People visit the national park for recreation, hiking, swimming, boating, relaxing, biking and running. Advanced knowledge on visitor management and visitor impact is available and different methods for visitor monitoring are applied.
The park has a well-maintained website and frequently promotes its activities on the web-site or in local or national media.

Conservation measures (FoA-27) are realised and supervised by the management. Major activities are related to neophytes, encroachment of trees and shrubs, riverine and floodplain dynamics, flooding regime and visitor management.

Law enforcement (FoA-26) is not implemented by the park. There are clear rules on restricted activities made visible by sign posts in place. Boating is not allowed at certain places in the park, which is also monitored.

Hohe Tauern National Park (Carinthian part)

In 1918, Albert Wirth from Villach bought the area around the Großglockner, the highest peak in the Hohe Tauern, and donated it to the Alpine Club to protect it. This was the first step on the way to a national park (PICHLER-KOBAN et al. 2006). In 1981, the first parts of the national park were established. Thus, the park became the first national park in Austria.

Even though the national park's establishment dates back to the past, the *Prephase* and *Basic Planning Phase* are well-known and documented. All required steps were then taken. The *Idea and Vision (FoA-1)* was based on the effort to prevent the economic exploitation of the area by creating skiing resorts and hydro power plants. The *"Declaration of Heiligenblut"* in 1971 was a fundamental event when political representatives agreed to create a national park. This event was accompanied by broad media coverage and public discussion. Large parts of the national park were and still are private property. Hence, back then, extensive participation of local stakeholders and a *Feasibility check (FoA-2)* were indispensable right from the beginning.

A national commission for national parks was established to plan and develop the national park. However, a *Planning handbook (FoA-5)* was unknown. During the planning of the recent extension in 2011, a planning handbook was used. *Communication and participation (FoA-3)* at all stages was considered indispensable. Hohe Tauern National Park (Carinthian part) possesses extensive basic research data because it has a long history of research dating back to the 19th century. The first parts of the park were established in 1981 and gradually extended in 1986 and 2011. It was not until 2001 that the park was finally acknowledged by IUCN.

The Fields of Activity of the *Detailed Planning Phase* have been applied in parts. The park has a management plan (Nationalparkplan) that includes *mission statement (FoA-10),* the vision, goals and measures. There are no specific *Ecosystem-based management plans (FoA-11)* but there are extensive activities related to integrated wildlife management and conservation. The park does not have specific *Regional economic programmes (FoA-12)* although many activities of the park support regional development. The major responsibility for the *Development of the protected area region (FoA-21)* rests with regional and local political and administrative units.

The management is aware of the fact that other regional development plans should be taken into account but there is no legal option to act. It is not necessarily considered a task of the national park management.

All FoAs recommended for the *Implementation phase (internal processes)* are applied by the park management. A comprehensive organisational structure with defined responsibilities is available. Parts of the staff are part of public administration whereas the rest of the staff is employed by a "National Park Fonds," which also provides funding for projects. In general, the national park director is responsible for *Personnel and organisational development (FoA-14)* activities and is also linked with politics as he is part of public administration. However, the state government and the Nationalparkkuratorium also might be included with relevant personnel or organisational matters. There is an affiliation with the other management bodies of Hohe Tauern National Park Tyrol and Salzburg through the National Park Council.

Management effectiveness (FoA-15) has been evaluated once by external institutions (WORKSHOP 5). In a further step, a scheme for internal management effectiveness evaluation is aspired. Financial issues are clearly defined *(FoA-16).* The budget is provided by federal and state government as well as the National Park Fonds and therefore allows predictable annual budget planning. However, budget is tight and, thus, the park increasingly cooperates with corporate sponsors to attract additional financial resources (e.g. Coca-Cola Junior Ranger programme).

Data and information management (FoA-18) is advanced and strongly based on IT structures similar to the Donau-Auen National Park. An online library and a project database provide valuable information for the staff. Every activity and all relevant documents are integrated into the database.

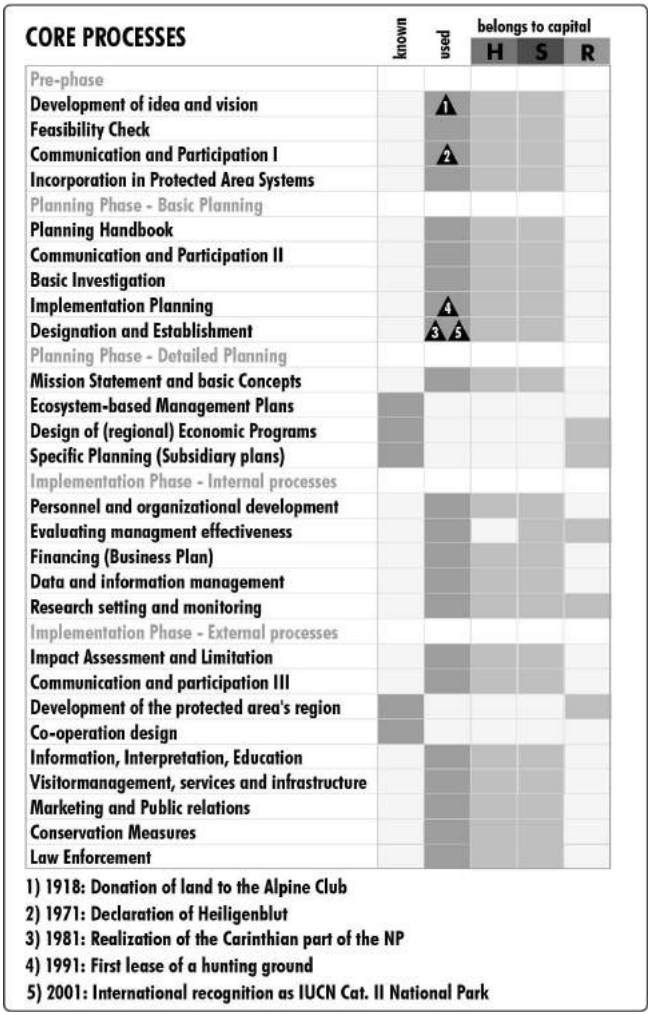

Figure 48: Use of FoAs in Hohe Tauern National Park (Carinthian part)
Known = FoA is known but not applied, used = FoA is applied, distribution of knowledge: H = human capital (knowledge bound to person), S = structural capital (knowledge is documented), R = relational capital (knowledge is externally available in the PA network); 1) –5) key events in the history of the protected area; self-assessment of PA management

In general, *Research setting and monitoring (FoA-19)* is a major issue for the national park. The area provides some of the most interesting spots in Central

Europe and is the largest protected area in the Alps. This attracts numerous researchers from different institutions. The management elaborated a research and monitoring concept (BAUCH et al. 2009). It provides a strategic and comprehensive framework for research and monitoring activities in the national park. Due to limited resources, much research is carried out by external institutions. The national park takes part in these activities and provides technical support, coordinates research but conducts few research projects on its own. There are several ongoing long-term monitoring projects because the Alpine area and its glaciers have good conditions for climate change monitoring.

All Fields of Activities of the *Implementation Phase (external processes)* are applied by the national park. Only two were deliberately chosen not to be applied because they are not considered relevant.

Impact assessment and limitation (FoA-17) is applied within the borders of the national park. If large infrastructure projects are planned in the protected area region, the national park management becomes involved to assess possible impacts on the natural system and the national park.

The national park established formalised, widespread stakeholder involvement structures such as the Nationalparkkuratorium *(FoA-20)*. Cooperative decision-making processes are important for everyday management. Measures and projects are mostly accorded with land owners and hunters.

Development of the protected area region (FoA-21) is not directly considered a task of the national park (WORKSHOP 5). However, a large number of well-developed packages and offers for visitors and tourists (e.g. National park card, www.naturerleben.kaernten.at, 2013) and the involvement in local projects show that the national park nonetheless contributes to the development of the region. Several studies indicate a positive economic impact of the Hohe Tauern National Park (GETZNER 2010; BODENHÖFER et al. 2009).

There is no formal *Co-operation design (FoA-22)* and no specific guidance for cooperation. It seems that this is not considered a prominent issue.

Information, interpretation education (FoA-23) is a fundamental task. A large number of offers for further education are provided for local residents and interested persons (national park academy, seminars, excursions). There are formal cooperation agreements with several schools in the national park region. These partner schools participate in specific programmes of the national park and are considered a major contribution to environmental education and awareness-raising activities. For information purposes, the national park frequently publishes its own newspaper to inform local residents about activities and offers of the national park.

The beautiful landscape (e.g. Krimmler Waterfalls, Gross Glockner High Alpen Road and the Pasterze Glacier) as well as ample hiking and mountaineering opportunities attract high numbers of visitors. This requires professional visitor management to minimise their impact on the natural system. Therefore, a variety of

measures is taken such as creating attractive tourist hotspots to steer the visitors. Numerous trails are available for visitors. In general, the *Visitor management, services and infrastructures (FoA-24)* are rather well-developed.

Marketing and public relations (FoA-25) is considered partly the task of the management. The park has its own corporate identity, frequently publishes articles in regional newspapers and has a well-managed website including an online shop.
Numerous *Conservation measures (FoA-27)* are taken. Wildlife-related measures are most prominent activities which sometimes attract quite some attention by national media (e.g. reintroduction of the bearded vulture). The national park management tries to develop traditional game management systems for an integrated wildlife management system. In this process, local hunters are involved.
Law enforcement (FoA-26) plays a minor role for the management. It is not considered a great problem and offences are subject to usual procedures.

5.2.4 Comparing the use and the distribution of knowledge

The previous chapter analysed the use of the individual Fields of Activity, the respective setting and framework for each case study area. This chapter provides a comprehensive overview and comparison of all case studies (Table 2). It is remarkable that all Fields of Activity appear to be relevant for protected areas in Austria and Nepal even though some activities observed in Nepal were not covered by this system (cp. chapter 5.3).

Considering the large number of different Fields of Activity and the huge differences between the individual protected areas, it is remarkable that most of the FoAs are applied by the majority of management units. However, this does not automatically refer to the detailed content or the quality of the implementation. It only confirms the relevance of individual issues from a general point of view.

There are three possible reasons why a FoA is not applied. It does not necessarily refer to the fact that they are irrelevant:

- The Field of Activity is applied but not in a systematic or detailed way. The management is not even aware of the fact that they are really applying this FoA. (E.g. *Co-operation design (FoA-22)*: A park management might have formal agreements with partners but states not to have formalised procedures for cooperation.).
- There is a deliberate decision not to apply a FoA because the specific objectives of the protected area do not require its application. This is especially true for regional development. Uninhabited national parks, for instance, cannot foster regional development inside the borders of the park. However, like in the case of Hohe Tauern National Park, the park management is an active partner in the *Development of the protected area region (FoA-21)* outside the national park.

- The Field of Activity is known and is considered relevant but external causes prevent their active implementation (e.g. limited resources or knowledge, undesired by politics, no legal basis etc.).

Table 2: Comparison of use and location of the Fields of Activity

dark grey = not applied, light grey = applied, D = documented knowledge, P = personal knowledge of staff, E = externally known

	Nepal						Austria					
	CNP			ACAP			NPDA			NPHT		
Pre-phase	D	P	E	D	P	E	D	P	E	D	P	E
Development of Idea and Vision			X			X	X	X		X	X	
Feasibilty Check		X					X	X		X	X	
Communication & Participation I					X			X		X	X	
Incorporation into PA-System	X	X		X	X		X	X		X	X	
Basic planning phase												
Planning Handbook										X	X	
Communication & Participation II		X			X	X	X	X		X	X	
Basic Investigation	X	X	X	X	X	X	X	X		X	X	
Implementation planning	X			X			X			X	X	
Detailed planning phase												
Designation & Establishment	X	X		X			X			X	X	
Mission statement & basic concepts	X	X	X	X	X	X	X	X		X	X	
Ecosystem-based management plans	X		X				X	X				
Design of regional economic programs				X	X							X
Specific planning		X	X		X		X	X				X
Implementation phase - internal processes												
Personnel & organizational development		X		X	X	X	X	X		X	X	
Evaluating management effectiveness	X	X	X			X	X	X	X		X	X
Financing (Business plan)	X			X	X		X	X		X	X	
Impact assessment and limitation		X					X	X		X	X	
Data & Information management	X	X	X	X	X		X	X	X	X	X	
Implementation phase - external processes												
Research setting and monitoring		X	X	X	X		X	X	X	X	X	X
Communication & Participation III	X	X	X	X	X	X	X	X		X	X	
Development of the PA region				X	X	X						X
Co-operation design							X	X				
Information, Interpretation and education		X	X	X	X	X	X	X		X	X	
Visitor management, services & infrastructure		X	X		X		X	X		X	X	
Marketing & Public relations							X	X		X	X	
Law enforcement	X	X	X		X		X	X		X	X	
Conservation measures	X	X	X	X	X	X	X	X		X	X	

Pre-phase

In general, it was confirmed that during the *Pre-phase*, the same issues are taken into account in both countries. However, it is difficult to evaluate this because the protected areas investigated were established decades ago and many nowadays used tools were not in practice by then. Hence, recent extensions (NPHT), the planning process of the buffer zone (CNP) and the latest extension phase (ACAP) were taken into account.

Planning phase

A *planning handbook (FoA-5)* was unknown to three out of four case studies. However, basic planning steps like collecting *basic data (FoA-7), implementation planning (FoA-8), designation and establishment (FoA-9) or mission statement (FoA-10)* are universally applied planning steps. *Ecosystem-based management plans (FoA-11)* are not available at all case study sites. Especially NPDA and CNP have rather detailed ecosystem-specific management plans. ACAP has a system of different *"management zones"* based on ecological and land use criteria but is not further specified (ACAP/NTNC 2008). NPHT does not yet have a comprehensive ecosystem-based management plan.

Economic programmes (FoA-12) are based primarily on the location and the specific goals of the protected area. Local culture does not seem to significantly determine the contents of such programmes.

The *Development of the protected area region (FoA-21*) is actively promoted in ACAP and indirectly supported by NPHT. However, often associated organisations like buffer zone management committees (CNP) are in charge of this task. Some protected areas such as NPDA do not consider this task relevant. Thus, it seems that the application of this FoA highly depends on individual contexts and not on specific cultural characteristics.

Implementation phase

The Fields of Activity related to internal processes are relevant for all case studies. Even though they are not applied to the same extent, there is no protected area management body which is not concerned with *data management (FoA-18), personnel development (FoA-14)* or *financing (FoA-16)*. Frequent *evaluation of management effectiveness (FoA-15)* was not applied at any of the sites but was subject of serious discussion at all management units. *Impact assessment and limitation (FoA-17)* was not used in ACAP due to the fact that there is no legal basis but the need for it is subject to many discussions.

Basic tasks of protected areas as also demanded by IUCN such as *research and monitoring (FoA-19), information, interpretation, education (FoA-23)* and nature conservation are applied by all protected areas.

Participation and community involvement (FoA-20) was emphasised by all protected areas and a clear trend towards even more participative approaches was observed (e.g. community-based management approaches in ACAP).

All parks stated that *visitor management (FoA-24)* aspects are important. However, all protected areas visited are either major tourism destinations (ACAP, CNP, NPHT) or an important recreation area for residents of the region (NPDA). This might be different for protected areas with little tourism. Residents of protected areas in Austria and Nepal focusing on tourism both have very high expectations regarding the positive effects of tourism on the area.

Three out of four protected areas stated that they do not have specific *co-operation design (FoA-22)*. However, all protected areas showed most extensive regional, national and international networks. It seems that there indeed have to be some kind of arrangements but the management bodies are not fully aware of that. Austrian protected areas were attentive concerning their *public relations and marketing (FoA-25)* activities and see it as a separate task except for Nepal (where this is not the case).

Law enforcement (FoA-26) is realised by any protected area. In Austria, it is a very small part and not even considered a separate task. By contrast, there are comprehensive strategies for law enforcement and active protection of protected areas in Nepal, particularly in Chitwan.

The distribution of the knowledge about the FoAs

According to the knowledge assessment model, there are three possible carriers of this knowledge:

- Individual members of the organisation (Personal – P)
- Structures, databases or documents of the organisation (Documented – D)
- The relational network associated with the PA (External – E)

Often, knowledge is available in various forms (e.g. knowledge of individuals integrated into the database of the organisation is available in two forms). Knowledge only bound to persons might be in risk of being lost if the person leaves the management.

Most knowledge of Austrian protected areas is available within the organisation. The respective management fulfils its tasks and stores the knowledge about it within the organisation. The fact that almost every activity is bound to persons and documents implies that the respective persons add the results of all their activities to the central database or archive of the protected area. The fact that the managements of the Austrian protected areas stated to do almost everything on their own might imply limited awareness of externally available knowledge. Especially research activities are strongly linked with external partners like universities.

Contrary to a rather homogenous internal knowledge distribution in Austria, Nepalese protected area managements show highly interconnected structures. All FoA-phases and the application of all FoAs usually involve more organisations than in Austria. There is a high share of external expertise, even a sharing of tasks. In CNP, for instance, the national park is responsible for conservation and protection matters, the buffer zone management for regional development and education and NTNC performs a supporting role for everyone. The distinction between external and internal knowledge is unclear as there is no clear separation between internal and external. This is also valid for co-managed protected areas such as ACAP because local residents directly bring in their external knowledge and ideas through project propositions and participation.

5.2.5 Knowledge flows

The knowledge assessments described the knowledge and its location in detail. In a next step, the knowledge is linked to the flows of knowledge between and within the respective protected area. These flows are closely connected to the relational network and the organisational structure of the protected areas. The knowledge flowing models generated are based on the knowledge assessment and on interviews conducted on site.

Chitwan National Park

Chitwan National Park has two major knowledge circuits (Figure 49). One is located within the national park system and administration of Nepal. There is permanent exchange of knowledge between the park management, other Nepalese national parks and DNPWC in Kathmandu. DNPWC is the centre node of this national network which also facilitates the transfer of experiences made in any of the countries national parks to CNP. Additionally, Chief Wardens rotate in two-to-three-year intervals between the different parks and the headquarters. Thus, they can develop new ideas and share their experiences with the staff of different parks or the headquarters. A permanent exchange of all parks is guaranteed by DNPWC. This circuit makes knowledge of the respective park available for other parks.
Besides DNPWC, the work of national and international NGOs which are not bound to specific locations makes knowledge and experiences available all over the country. The recent focus on landscape-based conservation approaches requires a frequent exchange of knowledge on a national or regional scale. The Institute of Forestry (IoF) at Tribhuvan University, which educates human resources for the protected areas of Nepal, is an important partner for all Nepalese national parks and an important factor in the creation, sharing and distribution of knowledge about CNP.

The second main knowledge circuit is found within the national park and the buffer zone. The main institutions are the national park management, the buffer

zone management and NTNC Biodiversity Conservation Centre. These institutions share tasks and support each other depending on the topic. However, the national park management has the main power and functions as the core of the national park. International and national NGOs cooperate at all levels but basically through the three above mentioned institutions. The buffer zone management is the main institution transporting information to local residents through its different organisational levels.

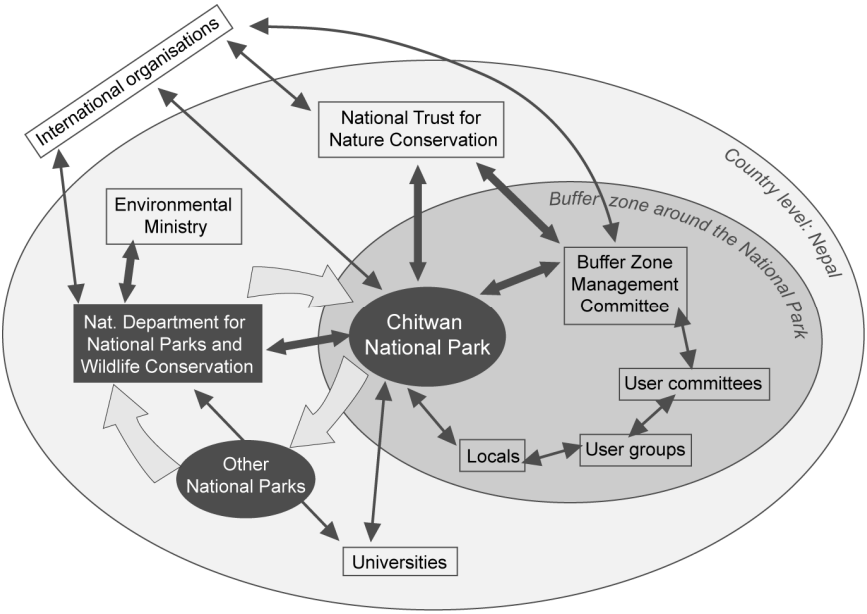

Figure 49: Knowledge circuit in CNP
Authors' draft

In Chitwan National Park, knowledge- and information-sharing strongly refers to wildlife issues and human-wildlife conflicts. Research activities and issues related to regional development are very important. Even though the exchange is intense, organisational, internal or planning issues are of minor importance and the main aspect of the exchange is related to external processes of the FoAs.

International exchange of knowledge in CNP is strongly favoured by the presence and activity of numerous development agencies, universities and international NGOs such as WWF, IUCN or others. It mainly happens at a meta-level through these organisations and not primarily by the protected area managements itself. International researchers are a major resource for creating new knowledge. Even though they have to register and need a permit from DNWPC to conduct research,

they often leave the country with their results when finished and do not provide the final reports or publications. Knowledge is "lost" for individually protected areas.

CNP is considered a successful example for protected area management in Nepal and thus attracts international attention.

Cooperation and exchange with India is of great importance in the field of counter-poaching operations. Especially high-level staffs from the NP and DNPWC participate in international congresses and workshops.

Annapurna Conservation Area

In Annapurna Conservation Area, internal and external knowledge circuits are more separated (Figure 50). There is a strong internal knowledge circuit exchanging knowledge, experiences and information between ACAP headquarters and the seven Unit Conservation Offices (UCOs). Next to frequent exchange of individual UCOs, there is also a constant exchange of personnel (INTERVIEW 13). The sharing of information and staff strengthens the local network (INTERVIEW 14). Staff rotation is similar to CNP but intervals are longer.

The CAMC, the local management committee, links the UCOs to the local population and transfers ideas and knowledge in both ways down from ACAP headquarters and UCOs to local residents and from local residents, NGOs and individual residents to UCOs and further on to ACAP headquarters. This exchange allows sharing knowledge made in one part of ACAP with other parts of this protected area. Due to the institutional strength and knowledge of the CAMCs, the system keeps working even if one element of the management system is inoperable (e.g. during Maoist Insurgency when ACAP staff was evicted from the field).

Much of the interaction and knowledge exchange is related to concrete projects and actions. Issues that are not of immediate interest for local communities like research and international cooperation are less frequently addressed (INTERVIEW 12). For Annapurna Conservation Area the exchange of knowledge at a local level and the integration of local knowledge forms an integral part of the management system (co-management system) (INTERVIEWS 2 & 3).

The second, external knowledge circuit consists of ACAP headquarters, NTNC in Kathmandu and other Conservation Areas of Nepal. The link to the UCOs is the major link of ACAP headquarters to the Conservation Area (INTERVIEW 13). However, there is intense collaboration between NTNC headquarters, international organisations and other conservation areas on a national scale (INTERVIEWS 3 & 12).

All conservation areas are closely interlinked, not only in terms of financing (revenues by NTNC are shared with all conservation areas) but also in terms of collaboration, exchanging of best practice examples. To strengthen the exchange of ideas and knowledge, study tours and excursions are offered for CAMC members and staff of conservation areas (INTERVIEW 14).

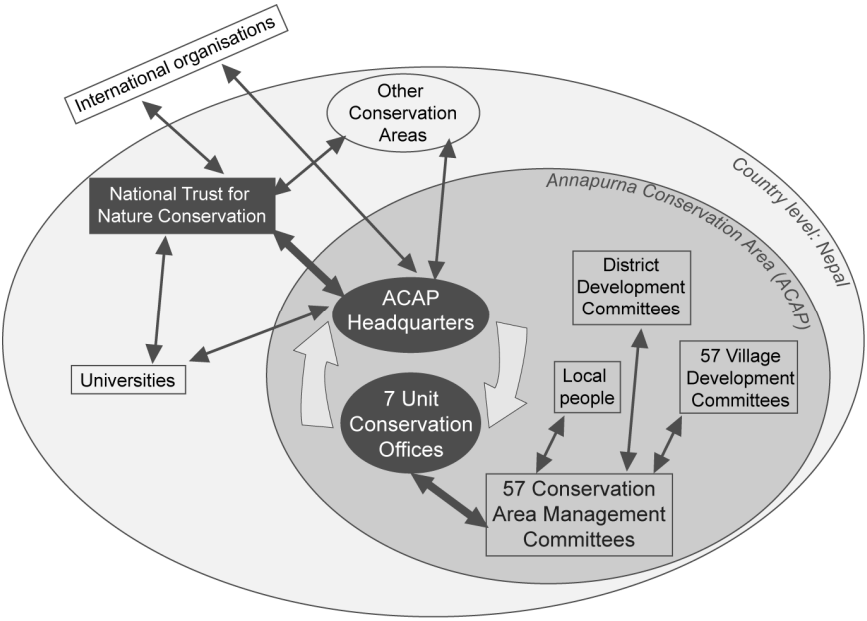

Figure 50: Knowledge circuits of ACAP
Authors' draft

While UCOs possess an extensive regional network having very few relations outside ACAP, ACAP headquarters have few direct relations with local organisations but have an ample national and international network available. This matches with the goals of ACAP to function as a matchmaker between different institutions and groups (NTNC 2008; INTERVIEW 3).

Individual UCOs or CAMCs are less involved in international knowledge exchange activities. International trainings, cooperation and joint projects are mostly realised by ACAP headquarters or NTNC (INTERVIEW 14). Most of the knowledge shared with the international community is transported by international NGOs, academic institutions and publications. However, in the course of the last years, there has been an increasing effort to link protected areas in the Hindu Kush-Himalaya region trying to use synergies and exchange knowledge by institutions such as ICIMOD.

Donau-Auen National Park

A large amount of the overall knowledge and information exchange in NPDA happens within the management. Hence, the major knowledge circuit can be found

within the management of NPDA (Figure 51). The management forms the central node in the relational network of the national park. Even though there are extensive flows of knowledge and information to other organisations, all information passes the management.

External relations to universities, schools, relevant stakeholders, political institutions are solely performed by the NP. There are hardly any information and knowledge exchange processes of issues related to the national park that occur without the involvement of the park management. Knowledge transfer and exchange of the region and the management is limited to specific projects and measures. The stakeholder boards are the link to local residents and political institutions. They guarantee the integration of local knowledge and transportation of information from the national park management. Stakeholder boards are able to provide an overview of the protected area's activities and are important for the distribution of knowledge.

However, especially for Donau-Auen NP local cooperation and knowledge exchange is not as fundamental as the linkage with the national system. The park management body is an active member of the Nationalparks Austria, a national NGO, which puts efforts into standardising management of national parks in Austria (e.g. implementation of a national strategy). The wetlands of the park are of national importance. Universities and research institutions from adjacent Vienna are important players for exchanging and transferring new knowledge mostly regarding conservation issues. The management of a riverine, peri-urban and economically important system like the Donau-Auen National Park requires the permanent involvement of many different disciplines. Hence, much knowledge is gained and shared with institutions which are involved in some aspects of river management.

International exchange is of considerable importance because the Danube passes several European countries. Successful management, therefore, requires coordinating activities. Additionally, the national park almost borders Slovakia. Hence, there is frequent bilateral cooperation with organisations working along the Danube as well as constant working in international Danube-related networks (e.g. Danube Parks).

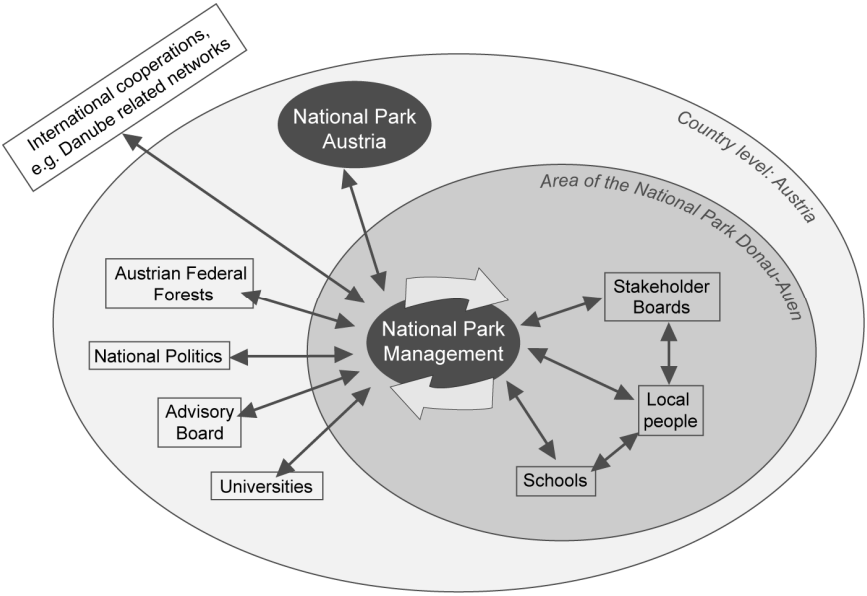

Figure 51: Knowledge circuit of Donau-Auen National Park
Authors' draft

Hohe Tauern National Park (Carinthian part)

Similar to NPDA, the knowledge circuit at the Hohe Tauern National Park (Carinthian part) is predominantly internal (Figure 52). There is frequent cooperation of the management units of adjacent parts of Hohe Tauern NP in Salzburg and Tyrol steered by a joint national park council. Exchange activities as well as management are comparable to the structures of transboundary protected areas.

Knowledge exchange and sharing activities on a national scale are linked to the extensive network of research institutions, universities and the "Nationalparks Austria", which agreed on a joint strategy for national parks (BMLFUW 2010).

All local institutions and stakeholders directly cooperate with the national park management. Stakeholder boards are an important institution for providing a comprehensive overview of the protected area's activities, for the distribution of knowledge and are an important link between local stakeholders (e.g. land owners, hunters, farmers).

The management is a very strong node in the regional network extensively cooperating with numerous regional organisations and institutions. It plays an important role in the development of the protected area region.

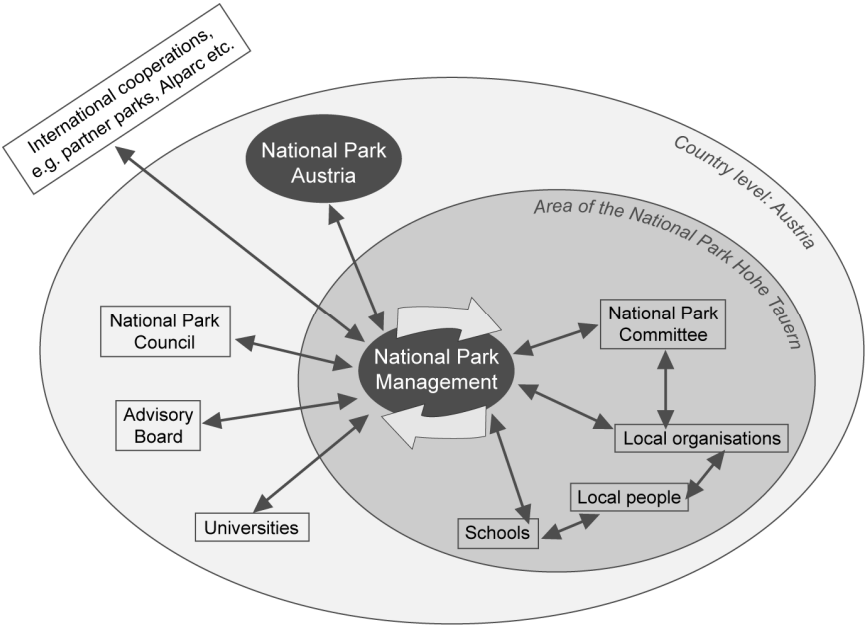

Figure 52: Knowledge circuit of Hohe Tauern National Park (Carinthian part)
Authors' draft

For Hohe Tauern National Park, international knowledge exchange is of minor importance for everyday management. However, there are frequent international activities. The national park is an active member of Alpine and European protected area networks (e.g. ALPARC, EUROPARC) and regularly involved in INTERREG projects (e.g. in Alpine Space of SEE). Intensive research and publication activity of (inter)national research institutions and occasional contacts and meetings of European umbrella organisations contribute to an ongoing international exchange of knowledge.

Comparison of knowledge-exchanging structures

There are fundamental differences of how and with whom protected area managements in Nepal and Austria share knowledge and information. Whereas in Austria, the national park management represents a central node in the local network and is a rather independent system, protected area management units in Nepal are more interlinked.

Consequently, Austrian protected areas show a less extensive exchange of knowledge at a national level. Joint strategies, programmes and constant exchange improve the performance of individual protected areas but are not vital for everyday work. International exchange of knowledge is not fundamental for individual protected areas. Its importance depends on the location of protected areas (transboundary parks, proximity to borders). In Austria, staff often stays with the management for a long time and is able to accumulate a lot of local expertise and establish a long-term local network.

There is no comprehensive system to exchange information and knowledge with other protected areas at a national level. However, Austrian national parks try to develop a more intense cooperation and intend to develop joint strategies and programmes.

In Nepal, NTNC and DNPWC act as superior institutions at a national level. This favours a comprehensive exchange of persons, knowledge and experiences. Legal issues such as anti-poaching activities, landscape-based conservation approaches, species-based management plans require nation-wide coordination. The national level in Nepal is very important.

Despite central management, knowledge is not concentrated at a single institution but distributed amongst various organisations and persons in Nepal. However, it is difficult to gain an overview of which knowledge is available and where it can be found. Frequent rotation of staff at a national scale allows effective capacity building for individuals. However, if individuals leave the system, they take their experiences with them. Staff members in Nepal are able to aggregate a lot of different experiences and knowledge. However, the quick rotation of staff and political influence on national parks may inhibit a long-term establishment of local networks and accumulation of knowledge within the protected area.

The rotation of staff has various effects on ongoing management and on the knowledge and network available. Frequent fluctuation and rotation within the national system show some interesting characteristics:

- They favour and strengthen the national network
- They keep a system dynamic and open
- There is a constant flow of new ideas favouring the synthesis of new knowledge and the knowledge exchange of different protected areas

- They might forestall local corruption as persons in charge frequently change
- Remote protected areas also find sufficient staffing
- Staff can accumulate much knowledge by working in varying places

However, if the rotation intervals are short, some potentially disadvantageous features may occur:

- It becomes more difficult to build up long-term and extensive local networks as responsible persons frequently change
- Building up trust with local representatives takes a long time
- Too many and too quick changes may destabilize the organisation and affect performance
- Rotation favours accumulation of personal knowledge bound to persons. By rotation, this knowledge is no longer available for the protected area

In Austria, the staff and the network of protected areas often remain the same in the long run. Austrian NP directors may be in power for decades as well as their staff. This results in an accumulation of personal contacts and place-related implicit knowledge of staff. This has some advantageous effects on the management:

- Stable and predictable network
- Extensive local network and built-up trust to local organisations
- Accumulation of relevant place-related knowledge at the management

However, it also features some possibly disadvantageous features

- It is more difficult to establish a national or international network
- There is the danger of a *"frozen system":* Few new ideas and inspiration from outside enter the protected area

Universities and research institutions play a major role in sharing and exchanging knowledge of protected areas. Together with (international) NGOs, umbrella organisations, consultancies and development agencies, these meta-organisations play a crucial role for the exchange of knowledge on a national and international level. In Nepal, additionally, the national network (DNPWC, NTNC) plays a role of similar importance.

5.2.6 Examples for knowledge exchange at case study sites

The following examples are shortly described and their characteristics are presented in Table 3.

Table 3: Selected knowledge exchange activities of case study areas

Content	Type of Exchange	Type of method
Job rotation at NTNC and DNPWC	horizontal, national, internal, external	Institutional setting
National park annual retreat	internal, short-term, vertical and horizontal, local	Institutional setting
Nationalparks Austria - Joint platform	national, horizontal, long-temr, external	National platform
CAMC and co-management	vertical, long-term, local, external and internal, two-way	Institutional setting
GLORIA Network	horizontal, international, external, long-term	Joint programme
ICIMOD and Alparc - Intergovernmental organisations	horizontal, vertical, international, external, long-term	International Platform
Stakeholder boards in Austria	vertical, external, two-way, long-term, local, national	Institutional setting
Nature guide training in CNP	vertical, local, mostly one-way, external	Training programme
TAL - Landscape based conservation	horizontal, vertical, (inter)national, long-term, external, two way,	Joint programme
Elephant safari for buffer zones	local, national, external, horizontal, mid-term	Joint project
Junior Snow Leopard Scouts in ACAP	external, vertical, local, mid-term	Education programme
Teaching materials in ACAP	vertical, long-term, local, external, one-way	Education programme

Job rotation principle of NTNC and DNPWC

DNPWC rotates its staff, especially the chief wardens. After a period of two to three years, they are designated to a different national park or the headquarters of DNWPC in Kathmandu. The management of ACAP is based on a similar principle. Staff frequently rotates between headquarters and different UCOs and is able to accumulate knowledge and to apply issues perceived in one park or area in a new context. The decision where to be designated to is affected by politics and short rotation periods may inhibit building local networks and long-term application of accumulated knowledge.

National park annual retreat in NPHT

Once a year, the complete management meets for two to three days to reflect, discuss and plan current issues of the protected area. All levels of the management have the opportunity for a comprehensive joint exchange. Spending one or two

nights somewhere else intensifies the knowledge exchange as there is ample space for additional informal exchange. Periodical reflection such as this annual retreat allows discussing issues which are not addressed during everyday work.

Nationalparks Austria – A platform for national exchange

Austrian national parks operate rather independently. However, there are issues of overall interest such as national strategies. It is a loose network to address critical issues on a national level and includes all national park directors. They meet a few times per year for joint planning, strategy development (e.g. National Strategy for Austrian National Parks in 2010).

CAMC and co-management in ACAP: Integrating local knowledge

The Conservation Area Management Committee (CAMC) and their sub-committees are a management system to actively involve local representatives who know the area and its specific features and needs in the management of the area. Their active role in project development and management allows integrating the local perspective into the management plan. ACAP staff provides technical and financial support. This system provides the opportunity to combine technical-organisational knowledge of ACAP with local knowledge of residents.

GLORIA – A topic-related international network

The Global Observation Research Initiative in Alpine Environments (GLORIA) is an initiative to build a global network of ecologists to monitor temperature and vegetation changes in mountainous environments around the globe. The network enables scientists to collect comparable data on climate change. It is a huge success and many protected areas participate in this programme (e.g. ACAP). The network facilitates topic-related global exchange for scientists and allows combining local data with international knowledge and experiences.

ICIMOD – An intergovernmental organisation for comprehensive international exchange

ICIMOD is an intergovernmental organisation working in eight countries (Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar and Pakistan) of the Hindu Kush-Himalaya region. It focuses on biodiversity conservation and management on a transboundary level in the countries of the region. The staff consists of citizens of all member states who work together on a mid- to long-term basis. This organisation is able to strengthen the exchange of countries in the region by multi-cultural staff, transboundary cooperation and projects. It proved to be effective to address issues of supranational importance and to realise transboundary projects such as the Kaylash Sacred Landscape or the Sacred Himalaya Landscape. Foreign aid is used to develop the organisation which is supposed to realise conservation and development. Projects are likely to be more successful because the staff has its origin in the region and knows the cultural background of the area. It is

an organisation of considerable size able to participate in international conferences and exchange beyond the regional level.

The Alpine Convention and the organisation of Alpine Parks (Alparc) follow a similar approach. All countries of the Alps are members of this organisation.

Stakeholder boards in NPHT and NPDA – Institutionalized exchange opportunities

The stakeholder boards as realised in NPHT and NPDA are committees involving all important stakeholders. They can be considered a local platform for exchange and discussion between the protected area region and the protected area management.

Guide training in Chitwan National Park – Local knowledge transfer

CNP provides training courses for nature guides from the area. They are trained in ecological knowledge, environmental awareness and sustainable tourism ideals. Practical experience is a pre-condition for becoming a nature guide. After completion of the course, guides are allowed to lead tourists through the national park providing increased income opportunities for local people.

This training programme is able to convey knowledge of national parks and nature conservation from the management to a broader public. Understanding of conservation issues in local residents is enhanced and local residents become involved in conservation.

The Austrian training for national park rangers is organized in a very similar way as in Austria, national park rangers often fulfil the same tasks as nature guides in Chitwan.

TAL – Terai Arc Landscape – Joint programme

This programme follows a landscape-based conservation approach. DNPWC, various national parks (e.g. Chitwan NP) and NGOs (particularly WWF) work closely together. By integrating all these organisations, a comprehensive combination of knowledge reaching from a local and national level to an international level is made possible.

Joint project: Elephant safari in Buffer zone community forest

Chitwan National Park is famous for its abundant wildlife. Tourists prefer to experience this wildlife on the back of elephants. Hence, in the Baghmara Community Forest, a package for tourists was developed where tourists do not enter the national park but stay the community forest which offers the same wildlife-viewing quality. The project is completely managed by the community and all revenues contribute to the development of the region and provide a constant income for local people. This project proved to be so successful that local people and NTNC decided to replicate it in other community forests of the buffer zone. First numbers show that the set-up of similar programmes is successful and has improved the situation of local people.

Junior Snow Leopard scouts in Annapurna Conservation Area

School children in ACAP participate in the monitoring of snow leopards. They cooperate with researchers to locate snow leopards and to find their traces for a mapping and population count. The integration of children into research and monitoring activities makes nature conservation more tangible and interesting for local children. This may support anti-poaching operations as well. Knowledge of environmental issues and snow leopards is also indirectly transferred to the families of the children.

A similar approach is followed by the "Coca-Cola Junior Ranger programme" in NPHT in Austria. The national park offers short term training for children. In a further step, they accompany and support park rangers during their work.

Teaching materials and regular classes in ACAP

ACAP developed teaching materials on environmental-related issues for at least two years at school on an elementary level. Books are published by NTNC/ACAP in order to transfer knowledge to children in the area. In all schools in ACAP, environmental classes are obligatory. Through integrating the topics into regular education, there is a general raise in environmental awareness and a focus on a long-term development of the area.

5.3 Qualitative comparison of the FoAs

Obviously, there are differences in the extent of application of individual FoAs as well as in the detailed content and priority given to them. The following section provides an overview of the similarities and differences of the respective FoAs. The results are based on interviews, observations and discussions whilst visiting the case study sites.

Most Fields of Activity are of similar importance in both cultural contexts and require only minor adaptations with respect to the content (

Table 4). Only very few FoAs require major restructuring and adaptations.

Table 4: Similarities and differences of the Fields of Activity

Field of Activity	Similar, minor adaptations needed	Similar content, but different methods	Different content, different methods
Pre-phase			
Development of idea & vision		X	
Feasibilty check	X		
Communication & participation I			X
Incorporation into PA-System	X		
Basic planning phase			
Planning handbook		X	
Communication & participation II			X
Basic investigation	X		
Implementation planning	X		
Detailed planning phase			
Designation & establishment		X	
Mission statement/basic concepts		X	
Ecosystem-based management plans	X		
Design of economic programmes		X	
Specific planning	X		
Implementation Phase - Internal processes			
Personnel/Organizational development			X
Evaluating management effectiveness		X	
Financing		X	
Impact assessment and limitation		X	
Data & information management	X		
Implementation Phase - External processes			
Research setting and monitoring	X		
Communication & participation III			X
Development of PA-region			X
Co-operation design		X	
Information, education, interpretation			X
Visitor management and infrastructure		X	
Marketing & public relations		X	
Law enforcement			X
Conservation measures		X	

5.3.1 Fields of Activity in common use

There are a number of Fields of Activity which are very similarly applied in Austria and Nepal. These are mainly characterized by standardised methodologies and fundamental techniques from natural sciences which are independent from a cultural context, especially science and economy are subject to the global system of research and a globalized economy. Four examples outline the characteristic features of Fields of Activity in common use:

FoA-19: Research setting and monitoring

Research and monitoring is a basic task of every protected area no matter in which country and is demanded by international guidelines (e.g. IUCN criteria, UNESCO MaB guidelines). Culture may determine the main focus and extent of research activities.

In Austria, most large protected areas, also NPHT and NPDA, have a systematic and comprehensive research and monitoring concept which defines the framework for research, issues of specific interest and gaps.

FoA-15: Conservation measures

The realisation of conservation measures is an integral part of every protected area. Conservation measures are defined by targeted species or ecosystems. However, the direct implementation is linked to local communities because measures may have immediate impact on the everyday life of residents (e.g. changes in land-use, restrictions, limited use of certain resources).

Threats which make conservation measures necessary are often linked to local culture, traditional land-use patterns, traditional extraction activities or priorities of politics or society. Because most of Austrian protected areas are on privately owned land, various schemes for nature conservation contracting have been developed to oblige land owners to follow certain regulations. In Nepal, most of the land is government-owned or owned by communities leading to different sets of methods and measures.

FoA-27: Evaluation of management effectiveness

The evaluation of management effectiveness is not bound to specific cultures or countries. Approaches for evaluating management effectiveness have been tested in many different countries and were often developed by international organisations (e.g. RAPPAM by WWF). All protected areas at the case study sites acknowledged the importance of the evaluation of management effectiveness even though no park has an implemented system of evaluating management effectiveness.

FoA-11: Ecosystem-based management plans

Ecosystem-based management plans are considered important by all protected areas in the case study areas. Basically, the structure of ecosystem-based manage-

ment plans follows international guidelines (e.g. ALEXANDER, 2008, IUCN, 1994). Basic structures such as description of setting and surrounding, definition of goals, vision, measures and actions are generally the same. However, content, structure and extent of the management plan is influenced by the context and priorities of society.

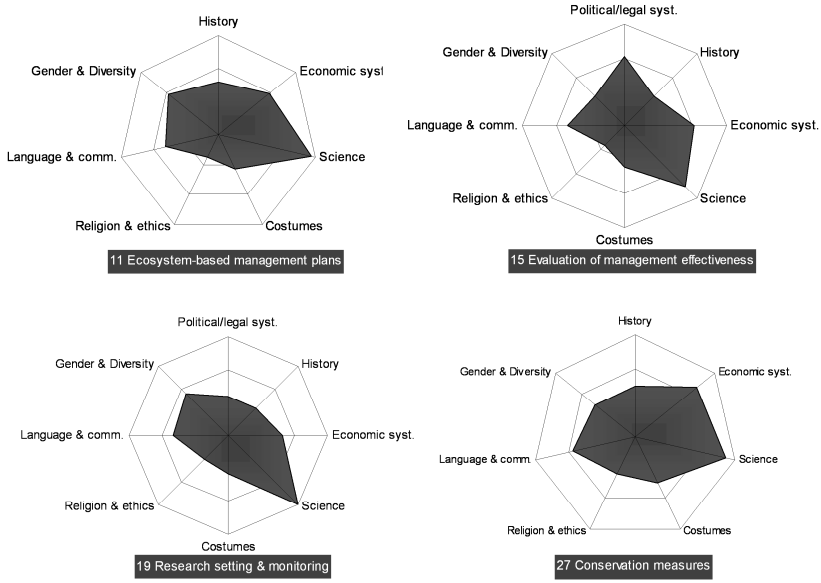

Figure 53: Cultural characterization of similar Fields of Activity
FoA-19 "Research setting and Monitoring", FoA-15 "Conservation measures", FoA-27 "Evaluation of management effectiveness", FoA-11"Ecosystem-based management plans", 0 = not relevant, 3 = very relevant, N = 25

5.3.2 Fields of Activity in different use

Most Fields of Activity were considered relevant but were applied differently. The differences may refer to contents, methodologies, priorities or approaches. Adapting these FoAs requires considerable modification of certain aspects, even though the general relevance is not questioned at all.

The following section outlines four examples in detail. The respective FoAs have in common that they touch many different cultural dimensions, which makes their application more complex (Figure 54).

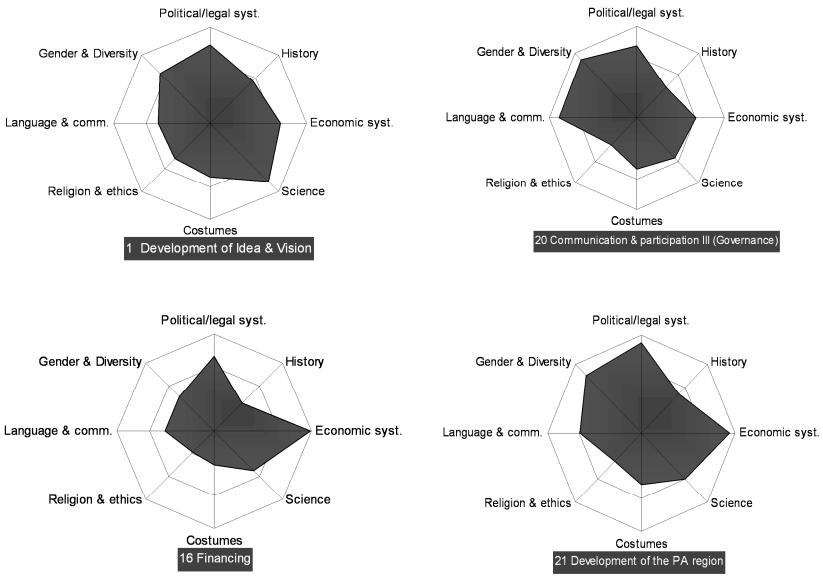

Figure 54: Cultural profile of differently applied Fields of Activity
FoA-1 "Development of Idea and Vision", FoA-20 "Communication and Participation III (Governance)", FoA-21 "Development of the protected area region", FoA-16 "Financing"0 = not relevant, 3 = very relevant, N = 25

FoA-1: Development of Idea & Vision

The idea to establish a protected area and to formulate a first vision is the first step in the creation of a newly protected area and can have a wide range of different reasons reaching from conflicts, civil society movements or political visions reflecting every aspect of a society or culture (PICHLER-KOBAN et al. 2006).

However, there are some basic ideas and visions of protected areas which are widely shared around the globe.

- Conservation of biodiversity, natural resources, ecosystems or species
- Protection of areas against development (e.g. infrastructure or urban development)
- Development of marginalized regions to improve the overall situation of local residents (e.g. tourism development, regional development, education)
- Protection of important natural phenomena (e.g. sacred mountains)

Austrian landscapes have mostly been modified by human presence; national parks seek to restore wilderness areas. The rest of the areas are often modified but

still ecologically valuable, they are habitats, which require active management to maintain them (e.g. dry grassland areas). In Nepal, depriving poaching activities and solving human-wildlife conflicts are central goals for protected areas. Regional development (e.g. education, infrastructure building) is a fundamental goal to improve the situation of residents and to ease the pressure on the protected areas. The preservation of natural resources has a high priority. Many protected areas in Nepal preserve primary habitat.

FoA-20: Participation III (Governance)

This FoA is strongly influenced by various cultural dimensions. Permanent involvement of stakeholders is indispensable for the success of protected areas in Nepal as well as in Austria. Structures and decision-making procedures and different types of boards result in different levels of involvement of local population. Nepalese protected areas focus either on strongly government managed approaches (national park and DNPWC), on co-managed protected areas with extensive competences and decision-power of local communities (Buffer Zones and Conservation Areas) or on community-managed protected areas (e.g. Kangchenjunga CA). Nepal developed a large variety of mostly successful governance approaches.

Stakeholder groups in protected areas strongly differ between Austria and Nepal. Whereas game hunters and land owners are important stakeholders in Austria, there is no hunting and few land owners in Nepal as most protected areas are on public land. Different ethnic groups and castes are important Nepalese stakeholders.

FoA-21: Development of the protected area region

Most protected areas foster sustainable development to improve the overall situation in a region. Protected areas in Nepal and in Austria have in common that regional development is considered relevant and important. However, there are differences of any kind as in terms of structures, stakeholders, goals, approaches and measures.

In Nepal, the main partners for regional development are local NGOs, communities and protected area managements (e.g. ACAP plays a prominent role in regional development), international development agencies and international NGOs. In Austria, protected areas play a less prominent role in regional development as there are more institutions in charge of regional development like LEADER-regions (European programme for strengthening rural areas) or regional managements. Protected areas in Europe are often only one player amongst many.

In Nepal, successful regional development is a vital factor for the successes in conservation. People strongly depend on natural resources and often face poverty. People are often forced to counteract the goals of protected areas in order to survive. As a reaction to this, Nepal focuses on linking conservation to development

by applying the ICDP approach (chapter 5.1.3). Consequently, local development in the surrounding of protected areas focuses on issues such as:

- Benefit-sharing
- Poverty alleviation
- Infrastructure development
- Alternative livelihoods and renewable energies
- Safeguarding natural resources and the provision of natural resources
- Basic education

In Austria, protected areas are often perceived as a tool for promoting tourism and locally grown products. Economic effects of protected areas are positive and quality of life is improving on an already very high level.

FoA-16: Financing

All protected areas have in common that there is a lack of funding for additional activities. Business planning and acquisition of additional funding sources become increasingly important due to sparse funding regardless of culture, country or protected area category. A corrupt the political system or society may inhibit transparent distribution and allocation of money.

Table 5: Comparison of funding sources for protected areas
Based on Gutman and Davidson (2007)

Local level	CNP	ACAP	NPDA	NPHT
Park entrance fees	+++	+++		
Tourism related income (tours, merchandising, visitor centre...)	+++	+++	+	+
Local market for traditional products	+	++		
Local NGOs	++	+		+
Local business (sponsoring, public-private partnership)	+	+		++
National level				
Government budetary allocations	+++	++	+++	+++
National NGOs funding	++	++	+	+
National business (sponsoring, public-private partnership)	++	++		++
International level				
European Union			+++	+++
Bi- and multilateral aid	++	++		
Development banks	++	++		
International NGOs	+++	++		
International foundations	+++	++		
International business (sponsoring, public-private partnership)				+

Income sources of the protected areas investigated were analysed according to the structures provided by GUTMAN & DAVIDSON (2007). Basically, all protected areas except ACAP mainly depend on government budget allocations. The main additional source of money in Nepal is international money (e.g. international

NGOs, development agencies, international tourism). Consequently, budgets are likely to vary (e.g. decrease in tourism revenues in ACAP during Maoist Insurgency). In Austrian, protected areas subsidies and programmes of the European Union and new models for acquiring additional funding (e.g. Coca-Cola Rangers NPHT) supplement government budget allocations.

5.3.3 Major aspects inadequately or not addressed by FoAs

All FoAs relevant in Austria were also relevant in Nepal, but some aspects were not sufficiently addressed by the existing FoAs even though they are of major importance for protected areas in Nepal. Depending on their characteristics and their priority, they might form the basis of new FoAs or be integrated into existing FoAs.

FoA-26: Law enforcement

Even though this already represents an existing FoA, law enforcement is an activity of Nepalese protected areas, which is different in any respect. Poaching and illegal use of natural resources are a major problem. The protection of large mammals such as tiger and rhinoceros is of fundamental importance and is an integral part of protected area management in Nepal.

Consequently, a comprehensive and extensive system for law enforcement was installed. The involvement of the army into the protection of national parks is a characteristic feature of law enforcement in Nepalese national parks. It is widely appreciated that the army substantially contributes to the successful prevention of poaching (INTERVIEW 1). Additionally, national parks collaborate with the local police and a network of anonymous informants reporting illegal activities. Many transboundary co-operations are also related to law enforcement activities (e.g. Chitwan NP – India, see chapter 5.3.2). In Austria, *Law Enforcement* plays no important role for protected areas.

Wildlife management and human wildlife conflicts

Wildlife management is a fundamental topic of the Nepalese protected area system. In Austria, the topic is not as prominent but still more important than addressed by *FoA-27 Conservation Measures.*

The protection of large mammals of global importance such as Bengal tigers, rhinoceros or snow leopards are of high priority and even are the raison d'être of many protected areas. The presence of large predators and animals which may threaten human existence and have a huge range are challenging for management bodies. Nepal developed a comprehensive system of wildlife management including elements of several Fields of Activity and a large variety of tasks. Major issues related to wildlife management are:

- Species-based management plans: Nepalese authorities developed species-based management plans which are valid on a national scale. These plans are available for species of outstanding importance.
- Landscape-based conservation approaches: The range of many large mammals often spans the borders of protected areas. This has led to a landscape-based conservation approach linking different protected areas to improve the conservation of large mammals such as tigers (e.g. TAL).
- Human-wildlife conflicts are a major challenge for almost every protected area in Nepal. Elephants, tigers, rhinoceros and other animals do not only cause minor damage but threaten human life, raid crops and destroy houses. The protection of these animals has led to an increase of population numbers and, thus, to increasing migration of animals, which intensified human-wildlife conflicts. Compensation schemes are inadequately developed but become increasingly important. Hence, many activities of the park directly refer to the human-wildlife relationship.

The importance of this issue in Nepal as well as in Austria may justify a more prominent position in the concept even though wildlife management is included in several FoAs. It is considered a task among others and reflects by no means the importance of this issue. Hunting might also represent an important issue. In Austria, hunting is a vital part of local culture and represents a component of wildlife management whereas every hunting activity in Nepal inside and outside of parks is prohibited.

Natural resource management & traditional land use

In Nepal, three quarters of the population directly depend on farming and the use of natural resources. Nepal has decade-long experiences in developing sustainable natural resource use models and community-based natural resource management models (e.g. community forestry and conservation areas). Numerous protected areas in Nepal are part of IUCN management category VI areas (all conservation areas and buffer zones) emphasising the importance of the sustainable resource use issue.

In Austria, the maintenance of traditional land use patterns and cultural landscapes is an important task regarding protected areas. Consequently, land use is essential for protected area management even though the focus is different. Whereas natural resource management in Nepal may be considered a separate task, the Austrian focus on traditional land use is closely linked to *FoA-27 Conservation measures.*

Poverty alleviation and benefit sharing

Poverty and high dependence on the use of natural resources requires the addressing of these issues by any protected area management. This is fundamental for the success of protected areas and therefore a basic goal particularly of buffer

zones and conservation areas. Several models and approaches were developed and are applied in Nepal:

- The Integrated Conservation and Development Programme approach (ICDP) is a basic approach of the Nepalese protected area system (chapter 5.1.3). It is a basic assumption that people need to obtain something in return, if conservation should be successful. This is realised by sharing revenues, supporting education, the creation of infrastructure and contributing to local development.
- In Nepal, numerous and innovative benefit-sharing schemes have been developed. This should guarantee that the local population receives benefits from the protected area. The Buffer Zone Management Committee, for instance, receives 50 per cent of the national park's revenues. It is distributed according to a fixed scheme for regional development, education, infrastructure development and conservation in the buffer zone. In ACAP, revenues are similarly distributed.

  The concept of community forests guarantees the provision of natural resources such as firewood and is not bound to protected areas. They facilitate conservation through use all over the country and are managed by local communities. Several approaches for ecosystem service payment are on the way of being tested and realised. Most approaches developed and applied in Nepal are quite successful and serve as best practice models.

Consequently, economic and infrastructural development plays a superior role in buffer zones and conservation areas. This encompasses for instance:

- Fostering alternative livelihoods (Ecotourism development, fostering the use of non-timber forest products (NTFP), supporting local initiatives to develop new products like tea plantations or to support the promotion of old products like local handicraft
- Supporting alternative energy programmes (renewable energy, solar energy)
- Fostering the development of infrastructure (roads, communications, electricity, schools, and medical care)
- Enhancing education by providing educational programmes for local residents or scholarships for students. This includes environmental education
- Building-up human and organisational capital

The topic of benefit-sharing and local development is also relevant in Austria. However, in Austria, it refers to different methods, different goals and methods. There is no direct benefit-sharing, even though there are positive economic effects of protected areas (provision of infrastructure, education and increasing tourism revenues). The *FoAs FoA-12 "Regional Economic Programmes"* and *FoA-21 "Development of the protected area region"* address these issues but contents and methods differ on all levels in Austria and Nepal.

Development aid and development cooperation focus

International development aid efforts have been concentrating on Nepal for decades and many international NGOs and development agencies have offices in Nepal. Many activities in protected areas such as capacity-building, realisation of conservation measures, ecotourism development, organisational development and education offers are financed, supported and realised by international organisations or agencies.

Thus, fundamental knowledge of international collaboration and development cooperation issues form an integral part of protected area management and need to be addressed more prominently in *FoA-22 "Co-operation design."*

Strengthening of regional identity

The focus on strengthening regional identity is an increasingly important goal for protected areas. Integration into *FoA-12 "Regional Economic Programmes"* or into *FoA-21 "Development of the protected area region"* seems reasonable. The issue is also included in the goals of biosphere reserves according to UNESCO guidelines. The social capital of a region becomes more and more fundamental for active sustainable development of rural regions in the long run. The strengthening of regional identity is an important task of Austrian protected area managements.

Knowledge management and sharing

The literature review and the case study analyses showed that protected areas, regardless of where they are located, accumulate huge amounts of knowledge. Not only the generation of new knowledge but structures, methods and approaches to identify existing knowledge and to provide access to this knowledge are likely to become increasingly important. Based on the assumption that protected areas are knowledge-based organisations and that the issue touches every FoA, knowledge management and sharing can be considered an important *Forming Principle* (chapter 2.5.1).

Gender and diversity aspects

Particularly in Nepal, the diversity of cultures and languages and different castes represent a considerable challenge for protected area managements. The dealing with these issues requires specific intercultural and social competences, especially from people working in protected areas with high cultural diversity.

This is also an issue important for Austria. The knowledge assessment shows that protected area regions are still predominately managed by middle-aged or older men (chapter 5.2.2).

Trends in protected area management such as an accumulation of tasks related to regional development require a comprehensive set of skills of the staff of protected areas. Hence, the importance of diversity within the management is likely to increase.Gender and Diversity aspects could be considered a forming principle (chapter 2.5.1) as they touch most Fields of Activity (chapter 2.2.4). However, a

separate addressing may increase awareness of people working with protected areas.

5.3.4 Dimensions influencing exchangeability of knowledge

The analysis of the Fields of Activity, the realised knowledge assessments and the accompanying interviews revealed several key dimensions which explain most of the differences in the management of Austrian and Nepalese protected areas (Table 6). Not all of them are directly related to cultural factors.

Table 6: Key dimensions explaining differing tasks of protected areas

	Nepal	Austria
Culturally influenced key dimensions		
Ethnic diversity	Multiethnic and multilingual country	Low ethnic diversity, monolingual
Available resources (human, structures, financial)	Many staff, low technological infrastructure	Few staff, complex technological infrastructure
Management-type	Government, co- or community managed protected areas	Government managed or non managed protected areas
Development status of the country (poverty, education)	Limited education, poor infrastructure, poverty	Good infrastructure
Use of natural resources	High direct dependency on natural resources	Intensified land use; use of landscapes for recreation
Culturally independent key dimensions		
Topography and natural environment of the protected area	Mountaineous or lowland characterstics define management	Mountaineous or lowland characterstics define management
Type of wildlife present	Presence of potentially dangerous megafauna (tiger, rhino), large ranges	Few dangerous, life-threatening wildlife
Habitat and landscape quality	Mainly primary, pristine habitat	Much secondary, anthropogenically modified landscapes
Number of residents in protected area	National parks sparsely or not inhabitated, Conservation areas inhabited	National parks sparsely or not inhabited; many users

5.4 Knowledge barriers in protected areas

A successful exchange and transfer of knowledge is a complex and comprehensive process which can be inhibited by numerous factors. Only few significant knowledge barriers have directly been observed in the case study sites. This confirms the assumption that protected areas as knowledge-based organisations are well aware of the value of their internal knowledge.

Figure 55 provides a comprehensive overview of knowledge barriers as observed in the case study sites. They are sometimes only valid for a single site and differ concerning the impacts they have on knowledge-exchanging processes. The categorization of knowledge barriers refers to the systematic overview provided in chapter 2.4.3.

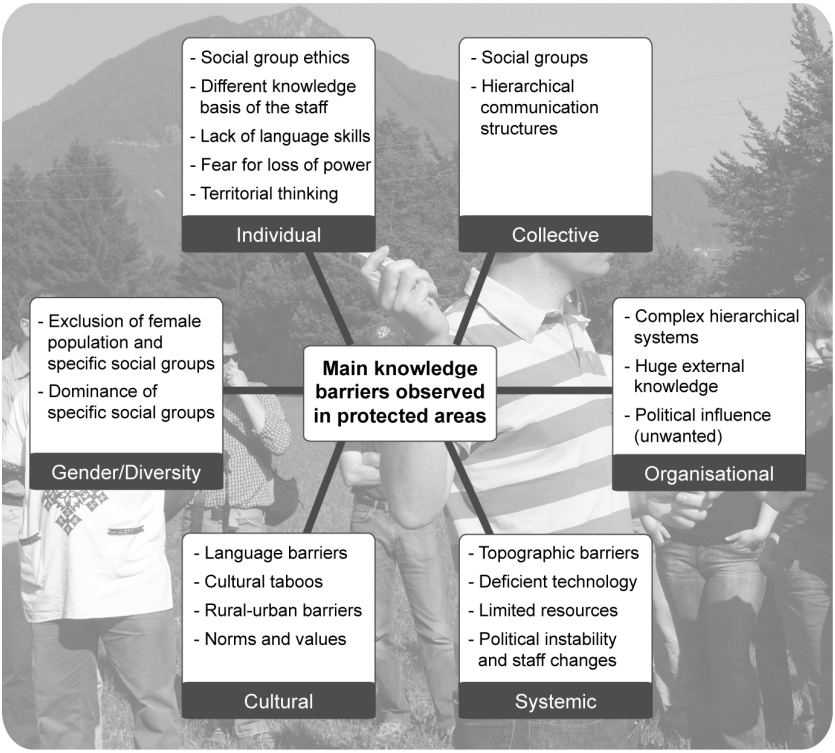

Figure 55: Knowledge barriers in the case study areas
Authors' draft

Individual barriers: This kind of barriers is difficult to observe because they vary from person to person and are not immediately visible. The general attitude towards women, some ethnic groups or castes is considered a major individual knowledge barrier in Nepal. This often defines the position, influence, power and credibility of individuals (INTERVIEW 11).

Additionally, heterogeneous knowledge background and language barriers are likely to make knowledge exchange challenging (high education gradient).

The willingness to share knowledge and the ability to absorb new knowledge are fundamental in a dynamic field like protected area management. However, observations imply that power aspects are a relevant knowledge sharing barrier in Austrian protected areas. This is particularly important when it comes to sharing knowledge with persons or organisations outside the management or the/a particular federal state.

Collective barriers: Barriers in communication are less likely to occur in Austrian protected areas due to small staff sizes, flat hierarchies and few communication taboos. In Nepal, the unwillingness to share knowledge with members of lower castes, different ethnic groups and women may pose a problem because their knowledge might be disregarded. Additionally, it is not considered appropriate to criticise higher hierarchical levels limiting critical discussion.

Intergenerational barriers pose a vertical barrier and are likely to occur frequently regardless of the cultural background. In most societies, credibility is bound to the age of persons, making it difficult for younger staff to be heard. However, it can also work the other way, if younger, well-educated persons do not appreciate traditional knowledge of the area as it is sometimes considered outfashioned.

Organisational barriers: Different knowledge barriers caused by the organisational setting have been observed in Nepal. The hierarchical organisational system and the sharing of tasks between different organisations are likely to limit the exchange of knowledge because knowledge has to pass numerous different stations, especially if the knowledge comes from lower hierarchical levels. The decentralized structure of ACAP is confronted with the same situation. Political influence on protected area management is very strong.

The amount of research realised by external, international researchers is very challenging. Even though researchers have to obtain a permit to conduct research in protected areas, they often do not share their results once they leave the country. No working mechanisms to improve the situation have been implemented yet.

In Nepal, persons in charge change very quickly. This leads to a constant loss of personal contacts and networks and may inhibit knowledge exchange similar to the effects of fluctuation in private companies.

In Austrian, protected areas staff fluctuation is low. This makes it challenging for new ideas from new persons to enter.

Systemic barriers are a major limitation for knowledge exchange in Nepal. Especially topographical and natural barriers physically limit extensive exchange of knowledge. In Chitwan NP, different offices and outposts are located throughout the park, limiting direct interaction. In Annapurna Conservation Area, communication between different UCOs is often limited to phone calls. Inexistent or deficient roads, landslides and large distances or altitude differences physically inhibit an extensive knowledge exchange. Additionally, a limited availability of communication means (e.g. access to internet) and frequent power cuts affect communication structures.

In Austria, there are hardly any systemic barriers. Especially because of extensive infrastructure and small sized staffs, all employees are mostly working together at the headquarters.

Cultural barriers are less likely to occur within a protected area or within the borders of a nation. Stereotyping of different groups is a major barrier regardless of the cultural context.

In Chitwan NP and Annapurna Conservation Area, different ethnic groups living inside the protected areas favour cultural barriers (e.g. language barriers).

Vertical barriers between scientists and local residents frequently occur as different worldviews inhibit mutual understanding. Local residents often do not understand the intention of research and researchers frequently lack the ability to display the practical use of results. This can be considered a cultural barrier regardless of the national cultural context.

Gender and diversity barriers were observed in Austria as well as in Nepal. In Nepal, traditional society disadvantages women and lower castes. For instance, a different valuation of knowledge of men and women in the field of ethno botany in Nepal was observed. Traditional knowledge of commercially useful plants of man is more likely to be documented than knowledge of women of using medicinal plants and traditional herbs, which are mostly for the usage at home. Gender- and diversity-related barriers are also relevant for Austria. A rather homogenous composition of the stakeholder and advisory boards dominated by middle-aged or older men became visible during the research process. In both countries, this leads to a disregarding of knowledge of certain parts of society.

5.5 General framework for the exchange of knowledge

Against the background of the cultural differences between Austria and Nepal (cp. chapter 5.1), the different sort of knowledge relevant for the park managers in the respective countries, and the different organisation of knowledge flows, the question remains whether and how knowledge can and should be shared between Austria and Nepal.

5.5.1 Different local culture and common global subculture

Even though differences between cultures such as Austria and Nepal are obvious (chapter 5.1), the global network of protected areas provides a common framework. According to HOFSTEDE, a culture might also be a more or less homogenous social group sharing common features and values regardless of national borders.

Consequently, there are features in the field of protected areas which are globally shared. The question rises whether there even might be a phenomenon like a global *"protected area (sub)culture."* The following aspects observed support this assumption:

Joint technical understanding

Observations from an international master programme at the University of Applied Life Sciences (BOKU) in Vienna indicate that a common technical background is able to provide a common basis for a potential "subculture." No relevant intercultural issues hampering cooperation, communication or exchange of knowledge between forestry students from Austria and Nepal were reported (INTERVIEW 18). Professionals in the same field of expertise share the same technical vocabulary and a similar way of judgement and approaches. Mutual understanding and cooperation on technical issues are rather easy. The same phenomenon was observed amongst students of the master programme MPA in Klagenfurt. A survey amongst the students and graduates (2012, not published) indicates that from the beginning, there has been a basic common understanding and a lively exchange amongst the students. Despite of representing different cultures, the students have obviously been united by their similar professional and technical backgrounds as well as by similar goals and visions for nature conservation (Inner circle, Figure 56).

Joint framework and guidelines

In the field of protected areas, these features go well beyond a mere joint understanding from a technical point of view. Professionals are part of a global protected area network (e.g. IUCN, CBD, World Network of Biosphere Reserves). The network provides globally applied frameworks and guidelines structuring the work in and with protected areas (Inner circle, Figure 56). Due to a permanent exchange of experiences and joint projects, this framework will be developed further.

Joint objectives, goals and values

Protected areas around the globe follow a joint vision also expressed in the above mentioned international frameworks. This vision includes values and objectives which in general are in accordance with protected area professionals. The analysis of the Fields of Activity (chapter 5.3) shows that on a general level, this common framework encompasses not only guidelines, values and objectives but also tasks at a rather general level.

Understanding the role of global and local culture

Despite the global framework, all protected areas are bound to a certain piece of land, its inhabitants and their local culture affecting and shaping the concrete management of the area. By exchange within the global network, the local and the global level influence and shape each other. Consequently, protected areas can be

considered transcultural institutions. The unique combination of global and local elements brings forth some more characteristic features.

Gradual differentiation of knowledge

Global guidelines are usually adapted to the national or local cultural context. Different priorities, threats and development goals require a specific set of tools, methods and approaches to accomplish the overall goals. These focus topics are often similar on a greater regional level (e.g. focus on conservation of traditional cultural landscapes in Central Europe) or the focus on poverty alleviation and natural resources in South Asia). These issues and their approaches and related methods are all shared on a supra-national level but are mostly confined to larger regions (Greater Region in Figure 56). Methods, approaches and applications become gradually more diverse as the adaptation of the common basis to specific situations require individual solutions.

Gradual differentiation of organisational and institutional framework

The joint framework and guidelines are integrated into national nature conservation legislation. Politics and society define the importance of nature conservation, the amount of resources dedicated to it and the individual shape of the protected area system. Consequently, this leads to a differentiation due to organisational and legal settings (e.g. European Union; SAARC countries).

Individual background shaped by local and national culture

Nobody is monocultural (DEMORGON & MOLZ 1996). Even though sharing common values in terms of nature conservation, protected area professionals are mainly affected by values, norms, religions and rules of the societies they were born and raised in. This also defines the ways of living and communication styles, which is particularly relevant for a transcultural exchange of knowledge.

Protected area knowledge in a global cultural system

Figure 56 illustrates some key results regarding the global knowledge-culture system in the field of protected areas.

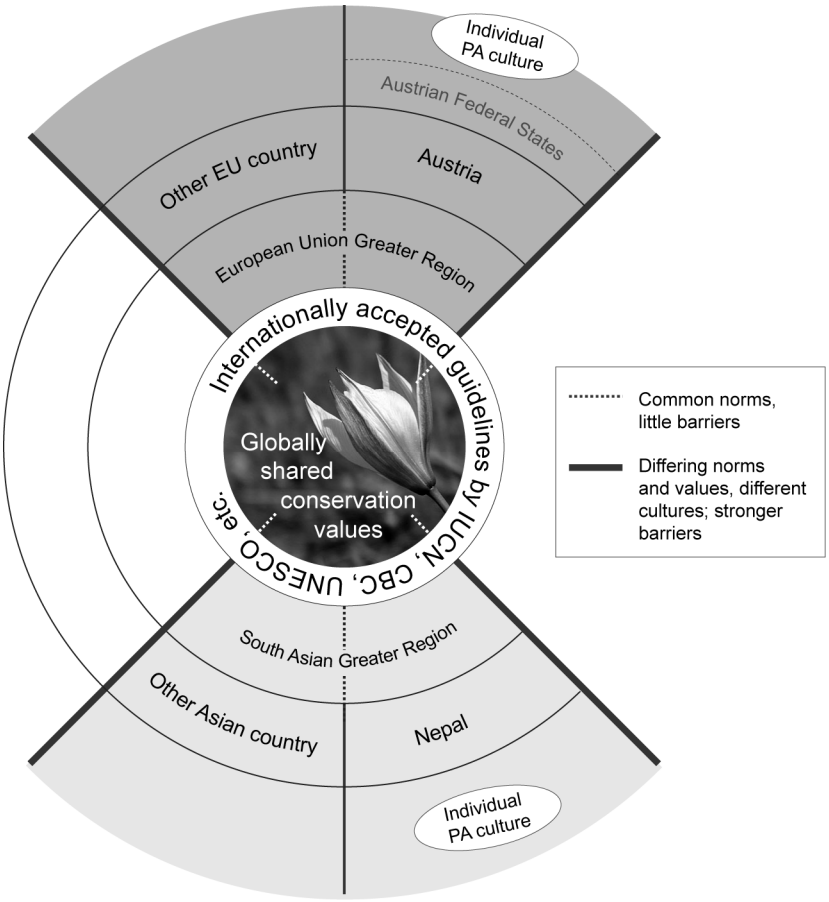

Figure 56: A basic common understanding in a global system
Globally valid knowledge, norms and values in the inner circle, gradual (cultural) diversification of knowledge by adaptation of knowledge to specific local contexts. Based on empirical data, an expert-based approach and transcultural discussion

Professionals involved in transcultural knowledge transfer processes have to be well aware of the respective cultural context. Even though all protected area professionals have a common "sub-cultural" background and share a common technical language, they also have an individual cultural background defining their norms, values and communication styles. Being rooted in different cultures might result in substantial barriers. Awareness of these differences allows for an adequate

organisation of a knowledge transfer with a minimum of misunderstandings. The cultural dimensions of Hofstede are particularly helpful in this context.

The example of Austria and Nepal

Figure 57 provides an overview of how the cultures of Austria and Nepal are evaluated according to the cultural dimensions of Hofstede. Basically, the country scores are relative and only serve for comparing countries (www.geert-hofstede.com, 2012). The comparison with respective neighbouring countries showed that those countries often have a similar cultural fingerprint (e.g. Nepal–India, Austria–Germany). Even though this approach strongly stereotypes cultures, it provides a useful approach to understand barriers, challenges, opportunities and some cultural features and derive hints how to choose appropriate intercultural methods.

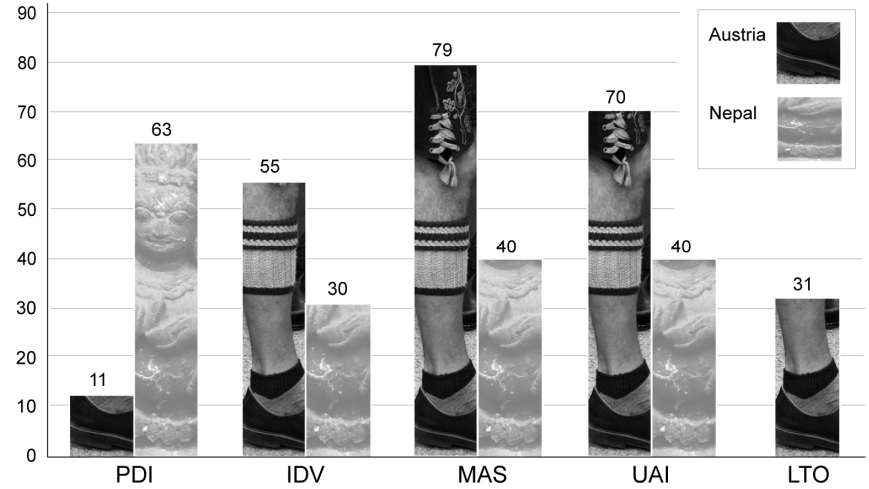

Figure 57: Cultural characteristics of Austria and Nepal
Based on the cultural dimensions of Geert Hofstede, www.geert-hofstede.com (2012). PDI = Power Distance IDV = Individualism vs. Collectivism MAS = Masculinity vs. Feminity UAI = Uncertainty avoidance LTO = long term orientation

Power Distance

Austria scores low on power distance index (PDI) indicating that superiors are accessible by inferiors. Independency is an integral part of society. This is visible in the structure of organisations which are characterized by a low distance between managers and their employees. Staff members are trusted to work separately and are used to be involved in decision-making processes. Control is somehow disliked.

Nepal shows a high power distance index indicating a preference for strong hierarchical organisational structures. Superiors are accessible but only the ones that are one layer above. Power is centralised even though it might not always appear like that. Managers expect their employees to be obedient. By contrast, employees expect clearly defined tasks and functions. Control is familiar to everyone. Nepalese society is also strongly influenced by the hierarchical Hindu caste system.

It is important whom and how to address the colleagues in case any joint activity shall be initiated between countries with high and low power distance. Teaching methods focusing on critical open discussion may be difficult to apply. Asian students at universities in Austria, for instance, usually need some time to adapt to the Austrian training system as they are rarely used to interactive teaching, which involves controversial discussions and collaborative learning. Challenging the lecturer with critical questions is considered disrespectful in Asia (INTERVIEW 18).

Countries showing high PDI often have powerful and centralized administrative structures such as DNPWC in Nepal. Being a country showing low PDI, Austrian protected areas are characterised by comparatively flat hierarchies and decentralised structures.

Individualism and Collectivism

A high IDV score of Hofstede identifies Austria as individualistic society with a preference for loose social frameworks. People are responsible for themselves and employer-employee relationships are on a contractual and professional basis. Like most Asian cultures, Nepal is a collectivist society preferring a large social framework individuals belong to. The well-being of the social group (extended family, caste, working group) a person belongs to is more important than the individual well-being. This group provides security but also results in individual duties (e.g. sharing the income with other family members). In terms of work, employers expect loyalty from their employees who at the same time expect familial-like protection by the employer. Hiring and promotion are usually closely linked with personal relationships and connections.

The Nepalese protected area system is characterised by a large network of organisations and personal relationships. The importance of private and professional networks emphasises the collectivist orientation of Nepalese culture.

Masculinity and Feminity

Hofstede describes Austria as a rather masculine society driven by competition and success. People in masculine societies tend to live in order to work. Managers are often decisive and pushing. Competition and performance are key issues for success. Nepal is a slightly feminine country where people value more equality, solidarity and quality in their working lives. Managers strive for consensus and conflicts are resolved by compromise and negotiation. This often results in a long process of discussion to reach a compromise. Involvement of all parties is impor-

tant. The advanced and numerous community-based management and participation approaches underline this characteristic feature.

Uncertainty avoidance

Austria is ranked very high on the uncertainty avoidance index indicating that Austrians tend to avoid uncertainty and prefer to rely on codes of belief and behaviour. Security is a main motivation of people and innovations are often resisted. The process of decision-making is rather long analysing all available information. People often have an inner urge to be busy and work hard. Nepal shows a rather low UAI, which means that there is acceptance of imperfection and tolerance if things do not work out exactly as planned. Rules are often circumvented and methods are developed to "bypass" the rules. This often leads to the development of new and innovative methods. However, the strong formality and extended bureaucracy in Nepal contradicts a low UAI score.

Students from cultures with high UAI show a preference for clear and concrete answers, clearly structured teaching materials and detailed description of tasks whereas in societies familiar with uncertainty students show a preference for semi-open structures in teaching and no concrete outcome is demanded. Methods are adapted according to different purposes.

In Austrian protected areas, structures are well-established. The handling of information and planning processes is highly structured. In Nepal, protected area management is very easily adaptive to individual situations and needs.

Long-term Orientation

According to Hofstede, Austria is a rather short-term oriented culture where there usually is a comparatively small propensity for saving money and considerable pressure to keep up with latest developments from a materialistic point of view. For Nepal, there no data about LTO is available from Hofstede. However, generally, the Asian cultures are more long-term oriented than western cultures. Time is not linear and, thus, not as important as to western societies. There are many truths depending on the seeker and plans are often adapted based on changing realities. Hofstede indicates that long-term oriented students show more talent for applied and concrete sciences whereas more short-term oriented students tend to have a talent for abstract and theoretical sciences.

This is somehow perceivable in the protected areas as well. Nepalese protected areas strongly focus on practical tools and projects. However, difficulties in implementing and developing rather abstract concepts such as management plans are reported (INTERVIEWS 2, 18).

5.5.2 Institutional framework for exchanging knowledge

Successful knowledge exchange does not only depend on choosing the right contents and adequate methods but also on the right institutional setting. It is a

fundamental prerequisite to involve the right institutions according to the intended goals and extent of a knowledge exchange.

The following section provides an overview of the most important and influential institutions in Austria and Nepal which can possibly be involved in knowledge exchange activities. Selection and integration of the right partners in both countries are fundamental and strongly depend on the contents to be exchanged (e.g. national strategy development with central institutions).

Table 7: Institutional setting in Austria and Nepal

	Nepal	Austria
National Institutions	DNPWC	State Government Bodies
	NTNC	National Parks Austria
	Park managements	Park managements
	Consultancies	Federal Ministry of Agriculture, Forestry, Environment and Water Management
	National and local NGOs	MaB committee at the Austrian Academy of Sciences
		National and local NGOs
		Consultancies
Local Institutions in PAs	Buffer zone managements	National and local NGOs
	CAMCs	
	National and local NGOs	
International Institutions	WWF	CIPRA and ALPARC
	IUCN	Danubeparks
	ICIMOD	WWF
	Development agencies	
Research & Education	Tribhuvan University and Institute of Forestry	University of Applied Life Sciences Vienna (BOKU)
	Kathmandu University	University of Klagenfurt (MPA Program)
		Biology and Geography Faculties at various universities

There are numerous public, private and non-profit organisations involved in the development and management of protected areas (Table 7). In Nepal, DNPWC and NTNC are the main organisations on a national level. They are actively involved in the management and planning of national parks and conservation areas. NGOs and international organisations such as WWF, IUCN or ICIMOD play a comparatively important role in realising projects and supporting national organisations and institutions. They often collaborate with NTNC or DNPWC. Tribhuvan University, particularly the Institute of Forestry, are the most important national research and education facility in the field of protected areas.

In Austria, the park managements (for national parks, biosphere reserves and nature parks) are the main bodies involved in protected area management. State governments are responsible for non-managed protected areas and legislation.

There are national organisations such as Nationalparks Austria, the Environmental Agency Austria, the Austrian Man and Biosphere Committee or the Federal Ministry of Agriculture, Forestry, Environment and Water Management, which are also working with and in protected areas. National and international NGOs play a minor role even though they are partly quite active.

The University of Applied Life Sciences (BOKU) in Vienna, Geography and Biology Faculties at various universities and private or public research institutions realise most of the research and education in the field of protected areas and sustainable development.

5.5.3 Knowledge barriers for a transcultural exchange

Particularly cultural differences lead to an increase in knowledge barriers. Knowledge sharing always is a process of some kind of communication. Hence, the cultural approaches of Hofstede, Trompenaars or Hall are helpful in identifying knowledge barriers in intercultural interaction (Chapter 2.4.3).

Individual barriers: Knowledge exchange across cultural borders requires not only personal openness towards other cultures but also a wide set of skills like language skills to be able to share the knowledge. Experiences at the University of Applied Life Sciences in Vienna confirmed this assumption (INTERVIEW 18). The success of intercultural knowledge-sharing is strongly dependent on the willingness and ability of individual students to share knowledge. Success or failure of exchange was above all based on personal characteristics regardless of teaching methods or contents (INTERVIEW 18).

Collective barriers: Different communication and learning styles misunderstandings are possible and the context of knowledge is likely to be misinterpreted. Successful communication across cultural borders requires high individual skills as well as adequate teaching methods. Case studies and problem-oriented teaching is a most successful approach because it allows integrating an individual context (INTERVIEW 18).

A different professional and educational background of people exchanging knowledge poses a challenge and can hamper a knowledge exchange. Finding a common (technical) understanding is crucial for a successful exchange of knowledge.

Hierarchical communication barriers – Teacher-student relationship: If members of a culture used to flat hierarchies interact with members of a culture used to strong hierarchies, communication and knowledge exchange may be inhibited because of difficulties in whom to address and how to address the right person. This often goes along with the principle of seniority. Elders are taken more seriously and respected (age-related hierarchy). Hence, people change their usual communication patterns and contents depending on age or hierarchical position.

This hierarchy has to be obeyed and can even be a formalised barrier. Experiences assured that for students from Nepal and China, for instance, it is inappropriate to criticise lecturers. This also makes it difficult for them to deal with discussions at eye level with lecturers as common in Austria (INTERVIEW 18).

Strategies for bridging this barrier can be an additional informal exchange outside of official structures. People who are considered to be on the same level can exchange their knowledge in a more open way.

Language barriers in communication are critical factors even though English serves as an internationally recognized language in science. Limited language skills and the different semantics can result in major barriers in understanding.

The use of "yes" and "no" in different cultures serves as the most basic example. Depending on the culture and their communication strategy, saying "yes" can also mean "no" or "perhaps" depending on intonation and context. The same applies to the use of "regional" in an Austrian or in a Nepalese context. Whereas region refers to a smaller area in Austria, in Nepal, region refers to the greater region (e.g. South Asia, Central Europe). In Spanish, two terms for sustainable development are used, "Desarrollo sostenible" and "Desarrollo sustentable." The distinction in Spanish is lost in translating it to other languages in which both terms are translated into "sustainable development" (WORKSHOP 11).

To overcome this barrier, a cultural translator may be useful as well as intensive communication to be able to reveal the real content by knowing the context.

Organisational barriers are numerous if organisations trying to impart knowledge are located in different countries. This refers to joint international education programmes and project cooperation. Good personal relationships are a critical factor for establishing a successful setting to exchange or transfer knowledge across large physical distances. Consequently, high fluctuation of high-level staff, particularly in political functions as common in Nepal, is a major barrier for a successful knowledge transfer (INTERVIEW 18).

The most fundamental *systemic barrier* in intercultural exchange of knowledge is the distance as the exchange is likely to take place over physically large distances.

Stereotyping of cultures

Cultural stereotyping is a common human feature and the basis for prejudices. By being a member of a certain culture or group, people associate certain characteristics. This might lead to incomplete information because knowledge is either not shared with people from certain cultures or adapted in a way people think it will please the other side.

Hidden barriers – Hidden agendas and filters: Organisations often have hidden ambitions, goals and intentions which they do not reveal. This is common during

planning processes but is particularly relevant for intercultural cooperation because cooperation partners from different cultures may follow completely different principles and goals. Hidden agendas are a possible reason for suddenly failed cooperation projects.

Voluntary or forced censorship: The openness of a knowledge exchange is influenced by the willingness to share the knowledge. Politics often affect and determine the contents and extent of knowledge exchanged. This can be strictly enforced (censorship). However, there is also voluntary censorship if deciding not to share critical information (especially about one's own system or culture, about failed projects or negative evaluations). This may strongly influence knowledge flows.

A viable way to overcome this barrier can be an informal exchange on the horizontal level. Building mutual trust is an indispensable prerequisite.

Resource related barriers: Limited knowledge exchange is not only caused by unwillingness of individuals, cultures or structures. Limited availability of resources can be a most basic barrier:

- Limited technological resources: Limited access to communication technology, lack of web-based platforms for exchange
- Limited financial resources: Financial resources are fundamental for knowledge-sharing, but seldom sufficiently addressed.
- Limited human resources are a critical factor. If available staff is limited, no time remains to invest into intercultural knowledge exchange.

The question of resources should adequately be addressed in the planning process.

Gender-related barriers can limit the success of knowledge exchange because knowledge and experiences from women or marginalised social groups might be disregarded in some societies. In Nepal, protected area management is a rather male sector, which may automatically increase male credibility whilst granting less credibility to women. Knowledge of specific groups is given more or less value by society which has direct impact on the type of knowledge shared. In Nepal, it was showed that ethno-botanical knowledge is only shared and documented if it is economically important. However, this knowledge is located mostly with men whereas women have ethnobotanical knowledge for everyday use, which is less appreciated, and, thus, is lost step by step. This knowledge never even enters the knowledge-sharing process.

5.5.4 The role of cultural translators

As a consequence of the findings of the interviews and workshops, cultural translators who are familiar with both cultures are considered indispensable for a

successful knowledge exchange of cultures. Knowledge related to protected areas management is embedded in the respective local and regional context (cp. chapters 2.3.3 and 5.1, which show the large variety of different characteristics of protected areas). Thus, concrete measures, projects and approaches can hardly be copied and taught without understanding the ample cultural background.

Even though people are often not aware of this fact but most international or intercultural projects somehow involve cultural translators. In workshop competences, skills and criteria for a successful cultural translator were formulated:

A cultural translator…

- Has to know both interacting cultures well.
- Has to have enough technical knowledge in the respective field because he/she also has to be able to communicate on a technical level (e.g. management plan does not mean the same everywhere, hence there has to be a technical understanding as well). Translation may not be limited to mere language translation but also refer to different meanings of similar terms (e.g. as mentioned above, in Austria, "region" often refers to the region directly adjoining the protected area whereas in Nepal, it refers to the South Asian region).
- Is able to recognise possible cultural misunderstandings and cultural barriers.
- Has to be able to permanently reflect his/her own role in an ongoing process of interaction.
- Has to be able to balance both sides in terms of values and knowledge. He/she has to respect both cultures and stay neutral not favouring any side.
- Has to possess superior networking and organisational skills. He/she has to know how to establish contacts, whom to address and how to organise things.
- Has to have superior communication skills as he/she keeps interacting with different cultures.
- Must be well aware of communication styles and guidelines of the cultures which are supposed to interact.
- Is able to make comparisons to illustrate certain issues for other cultures helping to interpret specific events or issues.

Basically, cultural translators should be involved right from the beginning or even in the planning phase before a project or cooperation starts (WORKSHOP 11). In the beginning, they may serve as facilitators between both parties and support the process of negotiation and definition of processes or goals. Involving cultural translators later on in an ongoing process is considered risky because the other party may perceive it in a way that something may be wrong because no translator was needed before.

In general, cultural translators often appear in the course of cooperation or even provide an idea for cooperating. They are mostly part of the personal network of one of the parties involved in an intercultural exchange activity.
In Nepal, cultural translators are even employed by park managements. They are called *"community mobilizers."* Their main task is to facilitate communication between the protected area management and local residents. The skills they need and the tasks they fulfil are very similar to those of cultural translators.

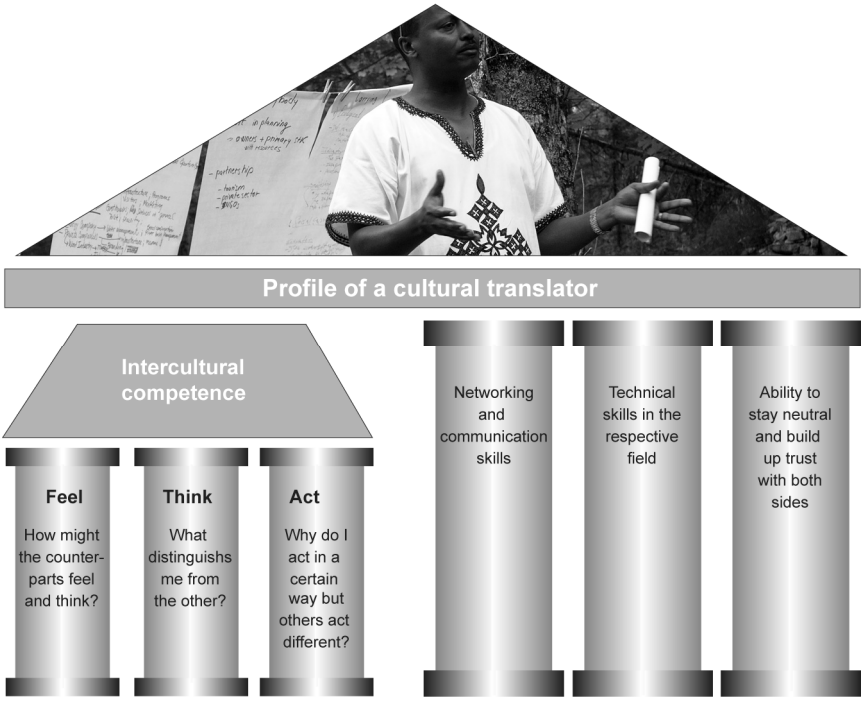

Figure 58: Profile of cultural translators
Intercultural competences based on draft of Ringeisen et al. (2006)

An exemplary list of most common background of cultural translators is provided in the following:

- Professionals who have a migratory family background (e.g. immigrated, emigrated, married to a person with a different background);
- Professionals who have lived or worked in another culture;
- Students and alumni of university programmes who maintain the contacts to their professors and lecturers;

- Professionals who have worked or work for international organisations and regularly interact with different cultures.

5.5.5 Exchange of systematic knowledge (competences)

Regardless of the cultural background, the transfer of knowledge is considered to be more effective if aggregated knowledge is exchanged because detailed information on specific topics is likely to refer to a specific culture-bound context (cp. North's concept of the knowledge ladder, 2011). For professionals coming from outside of Europe, for instance, details about the INTERREG programme, an important source of financing for many Austrian parks, is of no use. However, on the concept level, exchanging knowledge on funding strategies for strengthening regional development seems to be quite relevant. This is related to Figure 56, which explains the culture-knowledge system.

Exchanging skills and competences

International students of the MPA-Programme in Klagenfurt assured that all subjects of the course contributed to having full knowledge of protected area management (Chapter 5.5.6). As the responding students are based in ten different European and three non-European countries (Nepal, Malaysia and Tanzania), it can be assumed that a successful trans-cultural knowledge transfer has occurred on the concept level. A respondent from East Africa, for instance, stated that the acquired knowledge of business planning enabled him to support a local community in drafting a business plan for their wildlife management area in a Tanzanian national park. Other participants declared that the acquired communication skills were very beneficial for the work with local communities in Nepal and also for successfully preparing project proposals.

All examples have in common that the useful knowledge was explicit and highly aggregated. The ability and understanding of how to implement certain processes or how to apply new approaches are independent from specific information found lower on the knowledge ladder. Successful communication, strategic planning or project management follow basic principles and applies basic tools which are commonly relevant. Participants were able to integrate this knowledge into their own cultural context, no matter whether they are based in Europe or in Africa. A successful knowledge integration process has taken place regardless of the cultural context.

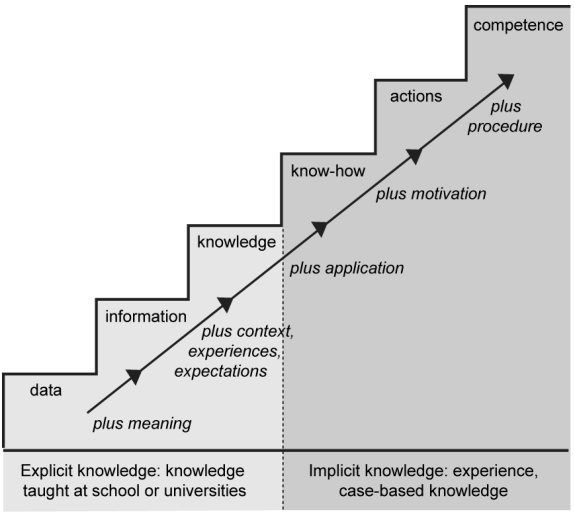

Figure 59: Knowledge exchange and creation based on the knowledge ladder Authors' draft based on North (1998)

Case study based exchange approaches

The importance and use of skills and competences becomes visible as soon as skills are applied in practice in a concrete local context. Applicability of knowledge requires a full understanding of the circumstances of the respective case: Why have problems been solved in a specific way? Which circumstances determined the success or failure of a specific approach?

The solution is the combination of exchanging skills and competences and demonstrating their practical use by case studies or best practice examples. This allows connecting specific skills with concrete situations and outlines ways to adapt them to a local context (INTERVIEW 18). This type of knowledge can only be transferred via an interactive exchange with experienced experts, allowing for critical questions and discussions (STUDENT SURVEY).

However, a certain level of common basic knowledge is necessary to be able to understand concrete situations and is a main challenge for an intercultural exchange of knowledge (INTERVIEW 18).

The role of personal interaction

Personal interaction becomes particularly important if people from different cultures interact because knowledge is always codified according to one's own cultural context (INTERVIEW 18). An isolated exchange of reports hardly allows further explanation of underlying motivations and circumstances. Referring to the onion model of culture (see chapter 2.3.2), obvious similarities may not mean the

same at all. Consequently, knowledge exchanged by different cultures in an impersonal way is likely to be misunderstood and to not become applicable.

Figure 60 shows that an impersonal exchange requires two separate steps to transfer knowledge from a sender to a receiver. The steps of coding and decoding complicate the process and misinterpretation is likely to occur if previous existing knowledge does not allow correct interpretation. However, once being codified, it allows sharing the knowledge with many recipients. Personal exchange requires only one single step. The advantage in an intercultural context is the opportunity to explain, question and communicate to avoid misinterpretation.

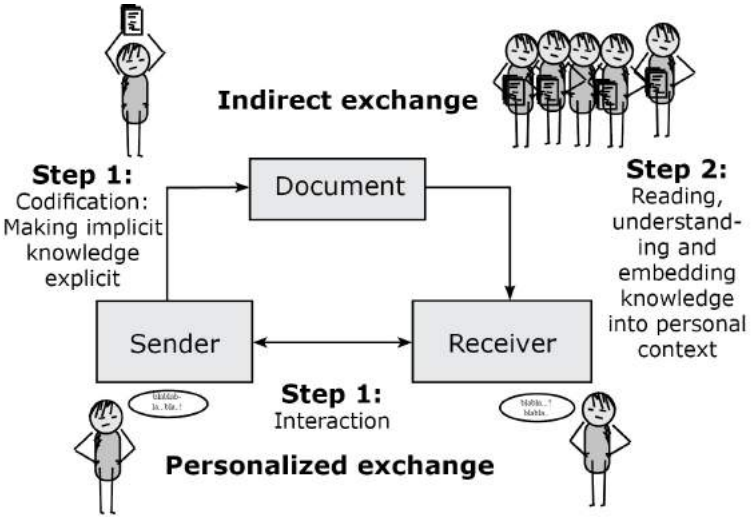

Figure 60: Steps for indirect and direct exchange of knowledge
Authors' draft based on drawing of Karl Ritsch

Mixture between personal and impersonal interaction

An ideal mixture of indirect and codified knowledge and personal interaction is necessary (Workshop 6). Codified knowledge allows imparting fundamental knowledge to a large number of people. If people have sufficient knowledge in a certain field of expertise, they become able to understand also codified knowledge. However, based on the assumption that it is very improbable that the target group always has enough basic knowledge, there is no alternative to personal interaction (WORKSHOP 6).

The important role of personal interaction is acknowledged by current and former international students of the master programme in Klagenfurt. The majority of

the students confirmed that a personal exchange of experiences between participants during the modules was a crucial part of the study course (Figure 61). The answers indicate that knowledge transfer is more effective if personal exchange is involved.

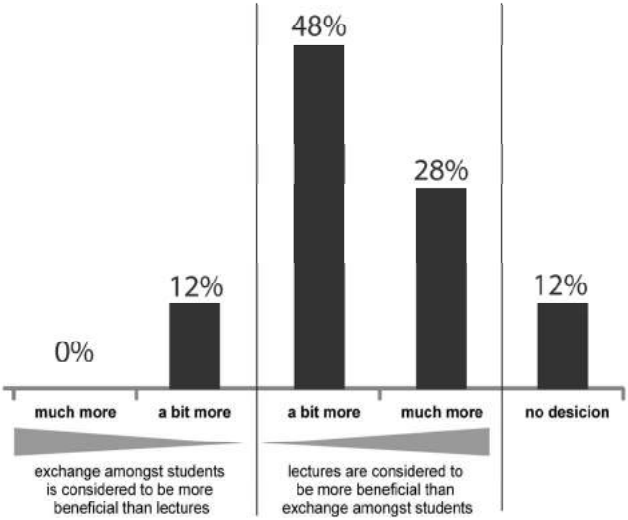

Figure 61: Evaluation of knowledge exchange during the master programme
Student and Alumni survey (N=25)

Personal interaction as a foundation for long-term networks

A crucial side effect of personalized ways of exchange is the building of international networks and mutual trust. This is considered a basis for any international cooperation across cultural borders (INTERVIEW 18). The Alumni Club of the Klagenfurt programme, for instance, facilitates the cooperation of graduates. Many of the students stay in contact with graduates, lecturers and advisory board members allowing for a quick problem-solving in daily work and facilitates inter- or transnational project cooperation. The network and personal contact with experts around the world has been helpful for the professional careers of many participants.

5.5.6 Evaluation of success of knowledge exchange

The last phase of the model for instigating successful transcultural knowledge exchange as presented in chapter 3 is the evaluation of the knowledge exchanged after testing it in practice. A short survey amongst alumni of the MPA-Programme outlined some central aspects relevant for evaluating the effectiveness of the programme and the adequacy of contents.

Key aspects for successful knowledge exchange

Knowledge exchange is a rather complex and resource-consuming process for students as well as for institutions or organisations involved. Consequently, applicability of the knowledge is of fundamental importance for most alumni. Based on this survey and several workshops in the course of the research process, three main characteristics affecting the applicability of knowledge emerged:

- Knowledge exchange on the level of competences (chapter 5.5.5)
- Knowledge exchange by using examples and case studies (chapter. 5.5.5)
- Knowledge exchange by focusing on personal interaction (chapter 0)

Students announced that the most valuable teaching approach provides concrete practical best practice examples and general applicable tools whereas mere scientific knowledge is less appreciated. This emphasises the importance that the acquired knowledge must be practically applicable.

Asked to name the lecturers from whom they benefited most, they mentioned only two scientific lecturers but six internationally experienced consultants who presented examples from daily practice, provided relevant background-information and provoked controversial discussions.

Relevance of contents

Participants of the survey stated that the content of the programme basically was beneficial for their daily work. More than 40 per cent of the respondents stated that all subjects of the course contributed to having full knowledge on protected area management, like pieces of a puzzle. Participants outlined that it always depends on how contents are presented and on the suitable time and circumstances to find the practical relevance of the contents.

Asked about the most beneficial course contents, the international students predominantly referred to *Communication and Participation* (52%) as well as to *Strategic Planning* (44%) and *Environmental Economics* (32%). *Business planning skills* (28%) were also considered to be relevant. All these subjects highly related to skills and competences as defined in chapter 5.5.5.

Even though the *FoA "Communication & Participation"* was characterized as being strongly culturally affected (Chapter 5.3), it was rated highly beneficial. This confirms that skills and competences are a rather exchangeable type of knowledge.

6 SYNTHESIS

Protected areas are embedded in a huge diversity of cultures and natural environments. Similarly, the diversity of methods, approaches and measures seems very incomparable. However, at a second glance, there is a common core of values, goals and guidelines providing a common frame for an understanding regardless of cultural borders.

The following section outlines which implications this phenomenon can possibly have on efforts to achieve a global exchange of knowledge of protected areas.

6.1 Seven steps to a successful transcultural exchange of knowledge

No comprehensive framework which includes the assessing adapting, exchanging and evaluating of knowledge for a transcultural exchange is available.

Consequently, according to the goals of the project, a seven-step framework based on the works of FAN (1998) and KROGH & KÖHNE (1998) is presented (Chapter 3, Figure 17, Figure 62). It is used to assess the knowledge of protected areas and its exchangeability. Phases 1 to 3 are analysed in detail. Phase 7 is only addressed by a short survey amongst alumni and students of the existing master programme in Klagenfurt, giving some hints for further improvements. The model proves to be a useful and a comprehensive framework. Especially the phases of *Knowledge Flow* and *Re-evaluation and Improvement* are crucial for a transcultural exchange.

This framework can be applied to any type of knowledge exchange in any field and provides information how to assess the exchangeability of knowledge with attention to intercultural issues and how to exchange this knowledge particularly in the field of protected area management. Consequently, the model as developed to assess the Fields of Activity (Figure 17) was generalized for assessing all kind of contents which shall be exchanged or transferred (Figure 60).

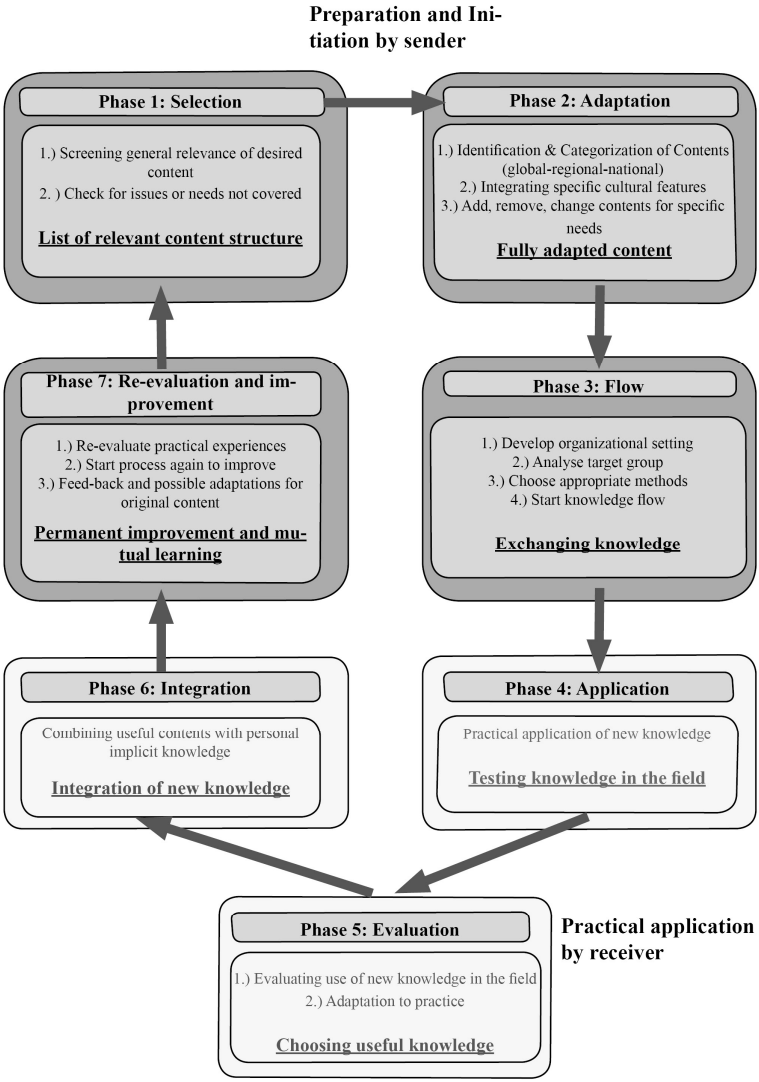

Figure 62: Seven steps to a successful transcultural exchange of knowledge
Author's draft adopted from Fan (1998) and Krogh & Köhne (1998)

6.2 Conclusions according to research questions

The relevance of the Fields of Activity for protected area management (RQ1)

A most fundamental question is whether the Fields of Activity provide a sound basis for a transcultural exchange at a general level. The analysis of different case study sites (Chapter 5.2), interviews and surveys amongst international students revealed that this structure indeed works as a rather comprehensive superior structure. Students described it as *"pieces of a puzzle, which allow getting full knowledge on protected area management" (Chapter 5.5.6).*

However, the analysis shows that especially developing countries have additional and different priorities for protected areas (Chapter 5.3). These are mostly not due to cultural differences but due to different natural environments (e.g. wildlife management, accessibility of the area) and different development stages (e.g. degree of individual dependency on the natural resources, literacy rate).

Nepal and Austria both have long grown institutional structures of protected areas being strongly integrated into local and national culture (Chapter 5.1). Nevertheless, the analysis of the cultural context shows that the protected area managements are confronted with similar tasks, challenges and conditions. Many mountainous protected areas, for instance, face the same challenges of climate change (glacier melting) or emigration. This proves to be true for Annapurna Conservation Area as well as for Hohe Tauern National Park. Lowland protected areas, on the contrary, face more pressure from human activities and have to manage the areas in a more proactive way. This is a common feature of Chitwan National Park as well as of Donau-Auen National Park.

The rather general level of the Fields of Activity consequently represents a common set of issues relevant regardless of national contexts. This leads to the conclusion that the Fields of Activity are a structure which belongs to the common core level of the culture-knowledge system as displayed in Figure 56. Thus, these Fields might be of interest for the international efforts of IUCN in developing a global standard syllabus for educating protected area managers (WEBER 2012). The global discussion on joint education and training structures outlines that it is more beneficial to focus on skills and competences rather than on contents (e.g. APPLETON et al. 2003; BLICKLEY et al. 2013). Following this approach, APPLETON et al. (2003) provide a profile of competences for protected area managers in Southeast Asia.

The findings support the conclusion that the structure of the Fields of Activity is applicable on a larger scale especially for the training of mid- or high-level professionals in protected area management and, thus, can be transferred from Austria

to Nepal. The concrete content, related tools and required competences, however, have to be adapted to the specific needs of the respective users.

The transferability of individual FoAs and the need for adaptation (RQ2)

After having assured that the structure of the Fields of Activity is relevant beyond the cultural context they were developed in, a closer look is taken on a more detailed level. The simple fact that the structure is applied elsewhere does not support any conclusions about the quality, the extent of application and the priority of the respective FoA. Different cultural settings have led to different adaptations and priorities. Nepal, for instance, is well known for its community-based conservation approaches, whereas Austria has started to develop those concepts only quite recently.

Whereas the common basis, the FoAs, are considered part of the common core knowledge. Their practical application, related tools and methods are subject to strong adaptation to the local context. The culture-knowledge system (Figure 56) is able to explain this quite well.

A more detailed and qualitative analysis of the case study sites shows a great variation between the work of protected areas in Nepal and in Austria. Issues which are mainly based on international standards, on scientific methods or on environmental conservation are applied in a rather similar way. They require less adaptation to local contexts. Organisational issues, regional development or participation, for instance, are of major importance in every protected area but solved in very different and adapted ways. Tasks such as *Law Enforcement (FoA-26)* are of superior importance in Nepal whereas it plays only a minor role in the management of protected areas in Austria. Amongst others, the FoAs Communication and Participation, Development of the protected area region, Information & Education or Financing are applied in a very different way (Chapter 5.3).

Several key dimensions determining the local or national relevance of knowledge have been derived (Chapter 5.3.4). Various studies prove that these are not necessarily related to local culture but also to development issues, use of natural resources and the natural environment (e.g. TIRU et al 2012; CHAUDRY et al. 2006; ALLENDORF 2006; GUDKOVA 2012; COUTINHO 2012, PETRI 2012; ALKAN 2009). They indicate that many differences are not bound to nation- or culture-specific contents but to a larger context (e.g. level of development, natural environment, local livelihoods). Obviously, similar competences and skills of protected area professionals are required in Austria as well in Nepal even though detailed measures and approaches differ.

Based on their findings, the authors conclude that the Fields of Activity may serve as transcultural core structure for exchanging knowledge of protected areas. However, there must be freedom to evolve according to a specific context.

Each Field of Activity shows different contents partly consisting of globally useful contents, partly of knowledge relevant for a larger region context and of country-specific knowledge. This provides a possible key for categorising and adapting FoA-related knowledge according to Phase 2 of the seven-phase Model (Figure 62).

Table 8: Categorisation of knowledge related to participation
Exemplary categorisation of the FoAs Communication & participation (FoAs 3-6-20)

	Communication & Participation I-II-III (FoAs-3-6-20)
Global relevance	Basic principles and tools of communication processes (e.g. stakeholder analyses, function of influencial opinion leaders, memory maps, specific workshop settings, such as world cafe method, kitchen table talks etc.)
Regional relevance	Common communication principles in the greater region (e.g. relevance of hierarchical orders, status of women and men, etc.) and legal participation rights (e.g. Aarhus Convention in the European Union which allows for public participation in environmental decision-making)
National-local relevance	Organisational structures and participation rights of specific stakeholder groups (e.g. co-managed ACAP), status of local minority groups, relevance of local opinion-leaders etc.
Skills and competences	# Ability to plan and perform strategic communication processes # Understanding the different levels of participation (from information to an involvement in the decision-making process) # Ability to deal with different people # Perceiving conflicts not only as obstacles but as chances as there is an interest in the topic # Ability to filter success stories from the day-to-day work"
Methods and approaches	# Stakeholder analysis # Workshop settings and tools (e.g. World Cafe, Future Workshops; see Getzner et al. (2010) # Citizen juries # Conflict resolution methods and mediation tools # After Action Method"
Contents	Concrete content of the communication strategy, e.g. composition of advisory or stakeholder boards, definition of key messages for defined stakeholder groups, planning for information events

To determine exchangeable and non-exchangeable contents, the authors propose the following categories:

- Knowledge of global relevance
- Knowledge of (greater) regional relevance
- Knowledge of national or local relevance

Furthermore, a categorization according to the type of knowledge is proposed:

- Skills and competences (not bound to a cultural or national context)
- Methods and approaches (not or only partly bound to a cultural or national context)
- Contents which refer to a certain place, programme, situation of a non-global scope

Using these categorizations allows identifying contents worth to be exchanged and contents requiring adaptation (e.g. Table 8). Based on the categorisation, the right mix between different contents can be chosen depending on the intended scope of any exchange activity.

Knowledge barriers for the transcultural exchange of knowledge of protected areas (RQ3)

In our analysis, intercultural barriers do not play a major role because the common understanding and joint basis between protected area professionals from both countries are strong enough to overcome most possible cultural barriers.

Knowledge exchange on n international level is mostly realised by meta-organisations such as WWF, IUCN, conventions (CBD), universities or consultancies working for different protected areas. The following barriers occurring in international knowledge transfer processes were compiled during a workshop:

- *Inhomogeneous knowledge basis:* People with different levels of technical knowledge may have problems to participate in discussions or follow lectures making knowledge exchange less efficient and more challenging.
- *Individual barriers:* Dealing with different cultures strongly depends on the individual's ability and willingness to interact with other cultures (CUMMINGS 2003). Openness towards people with a different cultural background is indispensable. Frequently observed barriers are personal feelings of superiority or inferiority towards members of a different culture or cultural stereotyping.
- *Organisational barriers:* These are most frequent barriers. Limited resources often prevent a successful exchange in the long run. Successful long-term exchange is strongly based on personal, stable and reliable contacts such as a network of international alumni or professor-alumni relationships. This is essential, especially if dealing with Nepalese organisations in which frequent fluctuation of staff, particularly of government staff, occurs.
- *Cultural barriers:* These mainly arise during communication processes and are likely to occur between Austria and Nepal. Diffuse versus concrete communication styles are major sources for misunderstandings. Language barriers are of minor importance, especially on higher levels of professionalism because English is an adequate and accepted working language. The cultural frameworks of Hofstede or Hall as presented in this book are comprehensive and outline many aspects relevant for overcoming cultural misunderstandings.

Experience shows that knowledge barriers within protected areas are mostly related to vertical exchange. Hierarchical organisational structures in Nepal make

communication and knowledge exchange of local residents, protected area management and other organisations or the government a lengthy process. Furthermore, the exchange of scientific staff or researchers and local residents is very complex. This is a major issue in Nepal due to limited education of local residents. In Austria, knowledge-sharing is often limited by deliberate non-sharing of certain knowledge considered to be for internal use only.

In both countries, limited resources (human, financial or technical resources) are identified to be a limiting factor for knowledge exchange.

Organisational setting and impulses for a transcultural exchange of knowledge of protected areas (RQ4)

The international participants of the Master Programme at the University of Klagenfurt stated that an exchange of knowledge across cultural borders was very beneficial for their work. With the 27 FoAs, a generally applicable structure exists whilst contents require adaptation for the respective needs. However, the question remains what might be the most promising and beneficial ways of exchanging this knowledge.

Whereas the exchange of explicit knowledge in forms of books, publications or reports is easily possible regardless of physical distances, there are only limited opportunities for more sophisticated and intense forms of exchange. Even though there are numerous efforts to stimulate and create long-term knowledge exchange opportunities for protected areas, NGOs, universities and administrations, comprehensive education and training opportunities in the field of protected area management are still limited. However, transboundary protected areas are a very successful concept which could inspire further improvements also for international exchange of protected areas.

Systematic training and joint education is assumed to be an important approach for international and intercultural knowledge exchange because of long duration and constant interaction. This allows frequent transcultural exchange and forms the basis for long-term networks (CUMMINGS 2003). Numerous organisations are currently working on developing comprehensive training structures applicable on a larger scale for protected area managers (e.g. BLICKLEY et al. 2013). Most protected area professionals can only choose between a mostly academic education and on-the-job training. There is no comprehensive approach for successfully combining theory and practice (BLICKLEY et al. 2013).

The organisational setting – a basic prerequisite

According to the results of this study, the authors want to stress that joint activities involving personal meetings (e.g. joint training programmes, joint workshops and conferences, staff exchange programmes) are beneficial in an intercultural context.

Interviews and observations outline that personal, reliable and enduring contacts are the basic prerequisite for developing joint activities. There has to be trust between the key players and cultural translators shall be involved in the process from the beginning. They know which buttons to push, whom to address and how to proceed. In the course of the study, it turned out that these cultural translators are often alumni of international education programmes who stay in touch with other alumni or professors.

Especially in politically less stable countries, there is usually a high fluctuation of contact persons, which makes permanent exchange very difficult. This situation makes alumni and personal contacts assets even more valuable. The integration of NGOs, consultancies or universities showing less fluctuation of staff could be beneficial due to more stable environments. Additionally to a reliable contact to key players, broad organisational support in the respective country from all relevant institutions is fundamental as outlined by LEE (2006) and CUMMINGS 2003).

Consultancies play a rather interesting role. They are institutions which constantly generate new knowledge and transfer it from one place to another.

The applicability of exchangeable knowledge

It is considered fundamental that knowledge is applicable and not generalized in a way that it cannot be related to practice anymore (BLICKLEY et al. 2013, Chapter 5.5.6). A close collaboration of academic institutions, NGOs, public administrations and individual protected areas is required in order to combine theory with practice and apply the exchanged knowledge and competences.

There is an increasing focus on teaching skills and competences (not bound to certain places or cultures). Individuals have to apply the new skills and adapt them to a specific context. Skills and competences are even rated more important than specific technical expertise (BLICKLEY et al. 2013). This focus is probably amongst the most promising approaches to broadly accepted training or education standards which go beyond cultural boundaries (APPLETON et al. 2003).

However, knowledge of concrete contents, site-specific information and its application in practice (bound to certain places or cultures) is indispensable to illustrate how skills and competences can be useful in specific cultural settings of protected area management (e.g. legislation, land-use patterns, local people, financial setting).

The methodological setting

An ideal mixture of personal and impersonal exchange is necessary. In multicultural settings, personal knowledge exchange approaches clearly gains importance. Individual cultural contexts can strongly influence the integration and understanding of new knowledge. Personalized exchange requires only one step between sender and receiver of knowledge whereas indirect communication is a two-step process increasing the risk of misinterpretations (cp. Chapter 0).

Skills and competences can be found on a high level of the knowledge ladder of NORTH (1998). Consequently, this knowledge is part of the implicit knowledge of experienced professionals. To share this information, a personalized way of communication is advantageous.

Case studies as an effective mean of exchange

Case studies or best practice examples are a widely used tool for exchanging experiences. They may be rounded with lessons learned from failure.

Analysing case studies allows understanding the full cultural and local context a certain approach is applied in. However, if knowledge transfer is only based on case studies but lacks accompanying theoretical background, a comprehensive understanding of the process might not be achieved but lead to a simple copying of successful projects or approaches without understanding the underlying context.

Intercultural Issues – Frameworks of Hofstede

The framework of Hofstede provides a basic understanding of different cultural characteristics in terms of learning and communication styles and suggests how to address those differences (cp. Chapter 5.5.1.). Even though this approach stereotypes cultures, it can provide valuable information for setting up international programmes and projects and support the selection of appropriate methods.

6.3 The Charta of Klagenfurt

In the final stages of the research project, experts, students and lecturers agreed on a *"Charta of Klagenfurt,"* which shall serve as a starting point for an international discussion about principles and guidelines for intercultural cooperation in the field of protected area management.

This document serves as a guideline and orientation for professionals interacting with different cultures in teaching, working or consulting.

Preamble

In a globalized world, exchange of knowledge across cultural borders is an essential feature. Particularly in the field of protected areas, international exchange is fundamental as nature is not confined by man-made borders. Similarly, protected area professionals have to permanently cross their cultural borders in order to meet the great challenges of the present, such as climate change, biodiversity loss or depletion of natural resources.

Thus, generally accepted principles are needed as understanding human diversity leads to a better understanding of biodiversity.

Justification

(1) Global challenges can only be met by global collaboration.

(2) International actions have local implications, and local actions have international implications.
(3) Transcultural work and coproduction of knowledge is the most promising way to generate new and innovative knowledge as heterogeneous groups show better results.
(4) Understanding of cross-cultural aspects is important for securing biodiversity and leads to a better management of protected areas.
(5) Transcultural exchange of knowledge is the basis for a better mutual understanding between people of different cultural backgrounds.

Basic principles

(6) Exchange has to happen in both ways: Exchange benefiting all parties is a good exchange.
(7) Mutual respect, trust and equal partnerships are the fundamental principles for exchange processes.
(8) Transcultural knowledge exchange has to focus on the process, not on the solutions.
(9) Methods have to be adequate for the respective cultural context and have to be mutually agreed upon.
(10) The principle "Do *with* the people not *for* the people" shall be considered.
(11) Diversity in society has to be reflected in the process of knowledge exchange.
(12) Different ways of thinking have to be recognised and accepted.

Indispensable Prerequisites

(13) Every exchange activity should be able to answer the following questions:
i. Why should this knowledge be exchanged?
ii. What kind of knowledge should be exchanged?
iii. Who are partners and who benefits from this exchange?
v. Are there sufficient resources to successfully realise an exchange?
vi. What happens with the results of the exchange? Who has access to them?
vii. Is there a mutual agreement on the framework, goals, targets, roles and fixed benefits?
viii. Is equal access for all social groups granted in the exchange process?
ix. What are possible impacts or repercussions of the knowledge exchange?

Scope

(14) This charter shall apply for all professionals, researchers, consultants and administrative staff involved in international and intercultural knowledge exchange activities.

The following concrete recommendations may additionally improve exchange processes of knowledge across cultural boundaries.

(a) Use cultural translators: Cultural translators are considered useful in any kind of exchange activity of members of different cultures. They are able to improve exchange processes and forestall misunderstandings and problems. They might be useful even within protected areas. Scientists and local residents often live in "*different cultures.*" Translators within a protected area might improve communication and exchange of population and management (e.g. Science-Practice translators or community mobilizers as used in Nepal).

(b) Respect transcultural principles: Principles of good collaboration seem necessary if dealing with different cultures. A fundamental code of conduct both parties agree upon is recommended to guarantee successful intercultural interaction.

(c) Apply a framework for transcultural exchange: If deciding to exchange knowledge across cultural borders, the application of a clear framework such as presented in chapter 6.1 is strongly recommended to structure these processes.

(d) Put attention not only to content, but also to the process and its evaluation: Any exchange across cultural boundaries is a highly sensitive process. Consequently, the process and the evaluation of the process and its contents are crucial. The adequacy of methods and contents cannot be completely foreseen. Several feedback loops with practitioners and planners from all involved cultures have to permanently accompany the process.

(e) Use informal settings: Informal settings are an effective method to overcome knowledge barriers and stereotypes. They should deliberately be included in international projects to build trust and personal connections, which are fundamental for a successful process.

6.4 Recommendations for knowledge transfer in protected areas

Protected area managements are knowledge-based organisations and it is likely that the topic of knowledge measurement and management will increase in the coming years. Consequently, some recommendations for protected area managements are presented:

(f) Improve and increase focus on knowledge management: This study revealed that protected area management and related institutions accumulated huge amounts of knowledge of the protected area region. Questions about accessibility and availability of this knowledge should be addressed more thoroughly to keep the knowledge available. Systems for knowledge management are recommended.

(g) Enhance diversity in protected area management: Protected area management is traditionally linked to originally "male" disciplines such as agriculture or

hunting. The tasks have changed throughout the years. Nowadays, a protected area management has to fulfil more than just mere conservation tasks. The composition of management bodies, stakeholders and advisory boards is still traditional. For developing towards a contemporary and effective management, protected areas should focus on diversity within the management and boards to integrate neglected knowledge and perspectives of different groups. Chapter 2.2.4 (Diversity and Knowledge) and Chapter 3.3.1 (5-R Method) provide useful input.

(h) Being aware of and address intercultural issues: International cooperation is constantly gaining importance for protected area management bodies. Protected area managers frequently involved in intercultural activities should attend an intercultural training, involve intercultural translators or check at least cultural frameworks (e.g. Hofstede). This study indicates that despite a common understanding, intercultural issues still persist and can chiefly affect intercultural cooperation. A permanent process of self-reflexion and (self-)observation is recommended.

(i) Make use of modern information technologies and share them: There are many advanced tools that can be used for exchange of knowledge and experiences. Those tools should be increasingly used for networking, sharing, and maintaining continuous exchange of knowledge in protected area management. If there are new tools that can be applied to protected area management, then there should be provision of transfer of tools from one part to another.

A comprehensive set of different methods for exchanging knowledge was collected in the course of the project and are presented in Table 9 to inspire the election of appropriate methods.

Table 9: Methods for international exchange of knowledge
Comprehensive set for protected areas, international organisations, universities, public institutions or researchers

Method	Internal exchange in prot. areas	Exchange of prot. areas	Exchange with local residents	Exchange at meta-level (eg. NGOs)	Interna-tional exchange	Cultural Translator needed
Hire science-management translators	+++		+++	++	+	
Informal extra activities	+++	+++	+++	+++	+++	
Joint education programs (e.g. MPA master)		+++		+++	+++	yes
Student exchange		+		+++	+++	
International education/studying abroad		+		+++	+++	
Mentorship Student-Student				+++	+++	
International conferences		++		+++	+++	
Short term trainings	++	+++	++	+++	++	yes
Joint projects	+++	+++	+++	+++	+++	yes
Staff exchange		+++	+	+++	+++	
Short visits/tours/excursions	+	+++	+++	+++	+++	yes
Homestay			++		++	
Joint publications	+	+		+++	+++	
General jobs (international background of staff in organizations) - joint working, long term	+	+++		+++	+++	
Rotation of staff (in international orga-nizations)	++	++		+++	+++	
Review of reports or publications	++	++		+++	+++	
Intercultural training (both sides)		+++		+++	+++	yes
Check available intercultural frameworks (e.g. Hofstede)				++	+++	
Internships-Volunteers		+++	++	+++	+++	yes
Mentorship Lecturer-Student				+++	+++	yes
Mentorship Professional-Volunteer	+++	+++	+++	+++	+++	

6.5 Recommendations for training and education

This work contributes to the global discussion about joint training and education schemes for protected area professionals by providing:

- A comprehensive structure for international training and education programmes for protected area management. The findings support the development of a programme in other countries similar to the MPA-programme in Klagenfurt.
- A framework how to adapt and assess knowledge, which shall be integrated into the training programme (Chapter 6.1).
- Details on characteristics of protected area systems in Austria and Nepal (Chapters 5.1 and 5.2)
- A set of methods for transcultural exchange

- A set of key dimensions to analyse the exchangeability of protected area knowledge (Chapter 5.3.4).

The authors also want to give the following recommendations:

(j) Use the 27 Fields of Activity (FoAs) as a starting point for a comprehensive structure: The FoAs or similar super-ordinate structures provide a useful framework to set up comprehensive training programmes for protected area managers still allowing for regional or local adaptations within the structure. Common structures are useful to guarantee an international "common language" amongst protected area managers.

(k) Find the right scope for a knowledge exchange: A focus on the greater region seems appropriate and most effective in the field of protected areas as it allows addressing local as well as international issues. Findings indicate that goals, methods, challenges and threats are often similar within a greater region.

(l) Focus on skills and competences: Many skills and competences are independent from the cultural context. As soon as they are applied in the field, they become adapted to the local context. This makes them useful for exchange.

(m) Find the right mix of personal and indirect exchange: Personal exchange is fundamental for exchange of any knowledge and information across cultural boundaries because it allows addressing the individual cultural context and communication to minimise misinterpretation. Additionally, personal contacts are fundamental for building up trust and long-term networks.

(n) Use case studies for applied knowledge: Case studies are an appropriate method to exchange knowledge in an international setting because it relates realised measures or approaches to a concrete setting in a specific cultural context.

(o) Be aware of the networking aspect of international training: Trust and personal relationship are the basis for any international and intercultural project or collaboration. International trainings serve as a major tool for establishing these long-term relationships. Consequently, opportunities to maintain the created relationships should be thoroughly addressed and integrated.

6.6 The added value of international exchange

In a globalised work, international exchange gains in importance. There are many different approaches for exchanging knowledge on international and intercultural levels (cp. Table 8). However, exchanging knowledge between cultures or nations requires additional resources and it can be questioned whether this is worth the effort. The authors would like to stress the high value of intercultural exchange in the context of protected area management but even beyond.

Participants of the Klagenfurt course, for example, stressed that the international training programme is much more than mere education. It forms the basis for international long-term networks and is able to enlarge the individual horizon. Interac-

tion in the worldwide network of protected areas becomes easier and effective because alumni are familiar with international settings. Alumni from developing countries also outlined the importance of studying in donor countries because it facilitates understanding of donors, their priorities and procedures as well as establishing contact with possible donors. Long-term international education or training basically also educates future cultural translators.

6.7 Future research

The dealing with the transdisciplinary topic of protected areas, sustainability, culture and knowledge leads to a number of open question due to its explorative character. Some issues which deserve further research are shortly outlined to inspire other researcher and practitioners to explore this fascinating transdisciplinary and transcultural field.

In the field of protected area management, there is only limited research on gender and diversity. During this research, it became obvious that changing expectations towards protected area managements and new tasks will also require further diversification on terms of staffing and management. In this publication, this topic is addressed in short but a need for further research is obvious.

The findings of this study indicate that there is huge knowledge in any kind. However, protected area managements are facing major challenges in dealing with the exponentially increasing amount of knowledge. Further exploration of tools to evaluate, select and manage knowledge seems necessary.

It seems as though protected area managements can function as bridging organisations between national or international policy and local communities facilitating vertical exchange of these levels. They fill the gap between theoretical and general guidelines and practical implementation. These impacts on local systems are a highly interesting field, which deserves further attention.

This study assumes that the Fields of Activity are a comprehensive structure for sustainable protected area management at a general level. Findings indicate that there are key dimensions to explain differences between Austria and Nepal. Further research may clarify whether the findings of this study correspond to the needs of protected area managements in other cultures such as Africa, South America or other Asian countries. Results indicate that the use and prioritisation of the Fields of Activity are greatly bound to a development aspect rather than a cultural aspect.

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7.2 Tables

7.3 Figures

7.4 Interviews and Workshops

	Location	Date	Function
Interview 1	Kathmandu	07.06.2012	WWF
Interview 2	Kathmandu	07.06.2012	IUCN
Interview 3	Kathmandu	08.06.2012	NTNC
Interview 4	Kathmandu	08.06.2012	DNPWC
Interview 5	Sauraha	10.06.2012	NTNC
Interview 6	Sauraha	10.06.2012	BZ CNP
Interview 7	Kasara	12.06.2012	CNP
Interview 8	Sauraha	13.06.2012	CNP resident
Interview 9	Sauraha	13.06.2012	CNP
Interview 10	Sauraha	13.06.2012	NTNC
Interview 11	Sauraha	15.06.2012	CNP resident
Interview 12	Pokhara	17.06.2012	ACAP
Interview 13	Lwang	17.06.2012	ACAP
Interview 14	Lwang	17.06.2012	ACAP
Interview 15	Lwang	18.06.2012	ACAP residents
Interview 16	Jomsom	19.06.2012	ACAP
Interview 17	Jomsom	20.06.2012	ACAP residents
Interview 18	Vienna	19.10.2012	University

Workshop 1	Klagenfurt	27.07.2011	Theory-Hypotheses Development
Workshop 2	Klagenfurt	29.08.2011	Theory-Hypotheses Development
Workshop 3	Vienna	23.09.2011	Theory and Hypotheses
Workshop 4	Klagenfurt	25.04.2012	Method development
Workshop 5	Klagenfurt	20.07.2012	Gender & Diversity and evaluation of results
Workshop 6	Sauraha	15.06.2012	Knowledge Assessment
Workshop 7	Lwang	17.06.2012	Knowledge Assessment
Workshop 8	Jomsom	20.06.2012	Knowledge Assessment
Workshop 9	Orth	25.06.2012	Knowledge Assessment
Workshop 10	Mallnitz	26.07.2012	Knowledge Assessment
Workshop 11	Klagenfurt	27.11.2012	Transdisciplinary workshop on results

7.5 Acronyms and Abbreviations

ACAP	Annapurna Conservation Area Project
ALPARC	Alpine Network of Protected Areas
CAMC	Conservation Area Management Committee
CBD	Convention on Biodiversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DNPWC	Department for National Parks and Wildlife Conservation
EIA	Environmental Impact Assessment
FoA	Field of Activity
ICIMOD	International Centre for Integrated Mountain Development
ICDP	Integrated Conservation and Development Project
ICR	Intellectual Capital Reporting
IoF	Institute of Forestry (Tribhuvan University, Nepal)
IUCN	International Union for Conservation of Nature and Natural Resources
NP	National park
NPDA	Donau-Auen National Park
NPHT	Hohe Tauern National Park
NTNC	National Trust for Nature Conservation
PA	Protected area
RAPPAM	Rapid Assessment & Prioritisation of Protected Area Management
SAARC	South Asian Association for Regional Cooperation
SHL	Sacred Himalayan Landscape
TAL	Terai Arc Landscape Project
UCO	Unit Conservation Office
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WWF	World Wide Fund For Nature

7.6 Authors

Michael Huber holds a diploma degree in landscape architecture and planning (University of Applied Life Sciences, BOKU, Vienna) where he worked after graduation in 2011. Since 2012, he has been project manager at the E.C.O. Institute for Ecology in Klagenfurt and is responsible for international and research-related projects in the field of protected area management.

He is specialised in protected area management and planning. Mr Huber gained ample experiences in the field of protected areas in Ecuador, Nepal, Mexico and the USA. He is about to start working on his PhD degree exploring people-parks relationships.

Michael Jungmeier is CEO of the E.C.O. Institute for Ecology in Klagenfurt and university lecturer at several universities. Since 2011, he holds a PhD degree (University of Greifswald, Germany). E.C.O. is specialised on planning and consulting protected areas, mainly in Europe but also in Central Asia and Africa. Mr Jungmeier is expert in communication and participation design, in the interface between biodiversity conservation and regional development. Since 2004, he has been co-director of the MSc Programme “Management of Protected Areas” in Klagenfurt.

Sigrun Lange holds a diploma degree in Biology (University of Bayreuth, Germany) and an MSc degree in protected area management (University of Klagenfurt, Austria). For 20 years, she has been working in the field of biodiversity conservation management and public relation, with field experiences in Europe, East Africa (Kenya, Ethiopia), South America (Ecuador, Peru) and Asia (Armenia, the Philippines, and Papua New Guinea). For nine years, she has been dealing with the broad field of protected area management with particular focus on biosphere reserves and transboundary cooperation. In 2008, she became CEO of E.C.O. Germany in Munich, specialised on communication, management and planning processes in protected areas. She is honorary communication coordinator of the alumni club of the MSc Programme "Management of Protected Areas" and also gives lectures in this international course.

Sunita Chaudhary holds a master's degree in management of protected areas from the University of Klagenfurt, Austria, a bachelor's degree in forestry from Tribhuvan University in Nepal and also graduated from the University of Hawaii, United States. Since 2010, she has been with ICIMOD as a research associate in ecosystem services and working for transboundary biodiversity conservation and management. She has been awarded several scholarships for study and individual projects in Nepal and abroad including Nuffic fellowship scholarships from the East West Centre, United Nations University, International Tropical Timber Organisation (ITTO), Prince Bernhard and Ford Foundation. She received the 'National Academic Excellence Award 2010' for outstanding grades in her master studies. Based on her work experience in Europe, Southeast Asia, and the Hindu Kush-Himalaya region of South Asia, she has published numerous articles and essays.