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In Transit towards a Third Generation of Protected Areas?
Analysis of Disciplines, Forming Principles and Fields of Activities by Example of
Recent Projects in Protected Areas in Austria

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Abstract

The paper presents an empirical analysis of recent activities in the management of protected areas (PAs) based on eleven projects in Austrian PAs, ranging from the development of the idea and vision to the planning and implementation of these projects. In a systemised review, these projects are presented as graphic representations (“fingerprints”) of attributes, such as the underlying scientific disciplines (SciDs), the forming principles (FoPs) and the fields of activities (FoAs). The FoPs, such as sustainable development, good governance and innovation, were assessed.

The analysis clearly indicates that sustainable development is an emerging issue in all projects. Recent concepts of the management of PAs may be seen as an ongoing intervention to maintain sustainability at the local or regional level. However, the fingerprints also prove that there is an inherent link between sustainable development and good governance. Sustainable development cannot be achieved without the appropriate means and mechanisms for empowering and involving the stakeholders and partners, and for holding them responsible. Furthermore, there is evidence that this interrelation requires a new understanding of planning (“extreme planning”).

From the results, the author draws the conclusion that PAs, stringently put into the context of sustainable development, form a “third generation” of PAs. The most important and distinctive elements of this new generation are the new mechanisms of steering and governing, an increasing number of scientific disciplines and a new understanding of the socio-sphere in the eco-sphere. The management has increased in complexity and thus requires particular personal and technical competencies.

Keywords: Protected area, conservation, concepts, integrated management, governance

1. Background: Changing society, changing concepts

Protected areas (PAs) are instruments for prioritising, structuring and organising competing uses, needs and trends in space. There is no doubt that a PA is a regulatory, territorial concept, since this land and/or sea is “especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources” (Dudley, 2008, p.4). Diverse authors point out the spiritual origins of the concept (Succow, Jeschke, and Knapp, 2001). Holy groves were not to be trampled, already paradise was fenced in. Later, the hunting grounds of kings and abbots were not to be disturbed by the common people (Weixlbaumer, 2010). American parks and biodiversity should become the pride of a young nation seeking for an identity. An analysis of parks in their social and historical context can give surprising insights into the ideological conglomerates *behind* today’s understanding of PAs (Pichler-Koban et al., 2007).

So the territorial frame has been here for decades (centuries), but what is *in the box*, has changed fundamentally. Weixlbaumer (2005, p.1) has identified a “change of paradigms” towards “innovative protection landscapes”.

As matter of fact, a new understanding of PAs can be identified in many different contexts. UNESCO’s Seville strategy is a most powerful conceptual manifestation urging biosphere reserves, scientific research sites since the 1970ies, to become “model regions for sustainable development” (www.unesco.org/mab). Ramsar Convention, the first international treaty on nature conservation in the 1970ies, dedicated itself later on to the concept of “wise use” (Ramsar Convention Secretariat, 2004). This term differs significantly from a strictly prohibitive conservationism. The attempts made by IUCN have brought in many elements of business administration, focussing for instance on management effectiveness (Leverington, Hockings, and Costa 2008; Phillips, 2000a) sustainable financing (IUCN, 2008; IUCN/WCPA, 2005a; Phillips, 2000b) and, increasingly, on co-operation with local communities and stakeholders (IUCN/WCPA, 2005b) and creating and sharing benefits (IUCN/WCPA, 2005c).

2. Method: systemised review

2.1. Analysis

These changes in the conception of protected areas must lead to innovations on the ground (Akkar and Fonseca, 2004). The empirical analysis, as presented in this paper, aims at identifying and systemizing recent developments based on projects which have been

carried out recently in diverse PAs in Austria. The projects which are presented are fully market-based and therefore refer to relevant activities and manifest needs.

The workflow is presented in Figure 1. The project string is based on some 150 projects. These projects have been implemented in different Austrian protected areas over the past two decades. According to certain criteria (quality, relevance, effort) 11 projects are selected and later assessed in detail. The projects are experimentally “crashed” against three theoretical concepts (SciDs, FoAs, FoPs). An expert-based analysis and screening of the documents on the projects leads to elements indicating or referring to the three concepts. These are used to fingerprint the projects and to make it possible to discuss them systematically. A comparison of fingerprints provides an opportunity to identify characteristic patterns and to revise theoretical as well as practical assumptions.

<Figure 1 about here>

Concept 1: Underlying scientific disciplines (SciDs)

The interdisciplinary character of MPA is evident and inherent as it involves synthesizing planning sciences, natural sciences, economics, philosophy and cultural sciences, techniques, human- and social sciences as well as jurisprudence (Jungmeier, 2011).

Concept 2: Forming principles (FoPs)

Integrative MPA, as a scientific discipline, is constituted by ten FoPs: 1.) Sustainable development, 2.) Internationality, global perspective, 3.) Inter- and trans-disciplinary approach, 4.) Ecological and economic effectiveness, 5.) Benefit sharing, 6.) Participation, communication, good governance, 7.) Long-term perspective, 8.) Innovation, intervention and change management, 9.) Ethically based approach and 10.) Knowledge management (between cultures, regions and generations) (Getzner and Jungmeier, 2009; [Getzner, Lange, and Jungmeier, 2010](#); Jungmeier, 2011).

Concept 3: Fields of activity (FoAs)

Following the life cycle of a PA from the preparatory phase through the basic and detailed planning stages to the activities of the on-going management, 25 FoAs can be distinguished (Wagner et al., 2005; [Getzner, Lange, and Jungmeier, 2010](#); www.ipam.info);). All of the relevant activities in the integrated MPA are represented in these FoAs.

2.3. Projects analysed: representative actions

The projects, as analysed in this context, are distilled out of a sample of some 150 planning and consulting projects, as implemented within the last decade. The eleven projects are examples taken from Austria only. Being on-market-projects, they represent the typology and variety of standard activities in PAs. Inherently, the presentation of the projects correlates to the planner’s and consultant’s point of view.

Vision for the Alpine Park Karwendel, Tyrol

The Alpine Park, situated in the limestone rocks to the north of Innsbruck, is the umbrella brand for the 11 protected areas, the oldest of which dates back to 1928. In a process of intensive discussion, a regional NGO has a vision and developed accordingly a plan of action plan to re-launch the park (Jungmeier, Zollner and, Sonntag, 2008; Jungmeier et al., 2009).

Landscape windows Nature Park Pöllauer Tal, Styria

A changing cultural landscape in the hilly slopes which lie north-west of Graz was analysed from the historic as well as future perspectives (from 1860 to 2030). A strategic plan for actively shaping the landscape of the nature park could be developed by visualization and the use of maps and constructive discussion (Dullnig and Jungmeier, 2003).

Feasibility study National Park Gesäuse, Styria

The idea of an IUCN category II National Park in the calcareous formations of the Enns Valley has been assessed taking into account certain criteria, such as the given situation of this area/region, the economic potentials, social and political acceptance and also the technical, legal and financial constraints. The study was to be carried out in a region in which all those involved and concerned in the development expressed very emotional views in highly controversial discussions. The study forms the foundation for planning and legal establishment of the park (Jungmeier and Velik, 1999).

Planning handbook Biosphere Reserve Nockberge, Carinthia

A national park, established in the 1980ies in a traditionally cultivated landscape (alpine pastures, alpine meadows) should be transformed into a biosphere reserve. A political prerequisite was that the transformation process should be participatory and on a strictly voluntary basis only. The handbook identifies stakeholders, anticipates relevant issues and outlines the framework and means of participation (Jungmeier, Pichler-Koban, and Zollner, 2007; Jungmeier et al., 2010).

Planning of core zones in Biosphere Reserve Wienerwald, Vienna, Lower Austria

Based on a systematic assessment of the potential of high-value-forests the potential core zones of the biosphere reserve were identified. Following the principle of consensus and compensation as a *conditio sine qua non*, the strictly protected core zones of the biosphere reserve were delineated in agreement with the land-owners and established on the basis of contracts (Kirchmeir, Kühmaier, and Jungmeier, 2005).

Implementation planning Nature Park Weißbach, Salzburg

A nature park, targeted as an instrument for regional economic and tourist development of a peripheral community close to the German National Park Berchtesgaden, should be developed in a participatory planning process. The planning identified potentials and ideas, delineated boundaries, prepared the legal and institutional setting and designed

measures to empower regional stakeholders and institutions (Zollner, Jungmeier, and Jaritz, 2007).

Economic effects of Natura 2000 in Austria

The impact of Natura 2000 on selected regions in Austria was calculated in scenarios. The results have provoked a most controversial debate. However, the results clearly indicate that, of 161 Austrian sites, the majority are beneficial in terms of regional economy and that the chances prevail over the risks. Only industrialised regions (in particular mining areas) are at risk to make economic losses, mainly by discouraging investment because of a lack of information and in management (Getzner, Jost, and Jungmeier, 2002; Getzner and Jungmeier, 2002).

Evaluation of National Park Gesäuse, Styria

Five years after the installation and recognition of the National Park the results achieved and the effectiveness of management were assessed by means of the European Site Consolidation Score Card (Pfleger, 2007). The results refer to regional complaints as well as to international standards and make way to some improvements (Getzner et al., 2008). However, the study also helps to provide an Austrian guideline for the evaluation of National Parks (Pfleger et al., 2009).

Research concept National Park Donau-Auen, Vienna and Lower Austria

The park contains the riverine landscapes of the Danube flood-plain that lies west to Vienna. The concept shall help to regulate, *restrict* (sic!) and focus research activities in a park that feels *overrun* by researchers (Jungmeier and Hausherr, 1999).

Branding of protected areas in Carinthia

Some 25 national and international categories of PAs have been described, analysed and made communicable by means of branding. Tags, information panels and materials are presented in a new co-operative design (Pichler-Koban et al., 2005).

Certification of interpretive trails in Carinthia

Some 130 interpretive trails in the Federal Province have been visited, documented and evaluated. The indicators for quality which could be extracted should be a help for planners, funding agencies and operators to improve the mostly insufficient infrastructures. The results would lead to the systemized certification (i.e. a quality label) for interpretive trails (Jungmeier and Zollner, 2002; Kreimer and Jungmeier, 2011).

3. Results of analysis: fingerprints of projects

3.1 Scientific Disciplines: the emerging interdisciplinary approaches

The projects that were analysed are part of a broad portfolio of scientific disciplines. The topics are diverse, such as conservation and evolutionary biology, constitutional and administrative law, ethics, public management, system analysis and modelling, remote

sensing, taxonomy, ethnology, environmental economics and many other applied sciences (Getzner and Jungmeier, 2009; Dudley and Mueller, 2011). The graphs in Figure 2 show the fingerprints of SciDs on an aggregated level. Projects related to feasibility checks, planning and evaluation have an especially broad fingerprint (see Figure 2c, d, e, h), whereas those of other projects are focussed on just one or two disciplines only (Figure 2g, i, j, k). Dealing with inter- multi- and metadisciplinary tasks is obviously a constituting element of these projects. However, the sketch of the projects (see previous chapter) proves that the projects are just *standard* in PAs and do not address any particularly complex problems.

<Figure 2 about here>

3.2 Forming Principles: emerging sustainability

The FoPs (forming principles), as fingerprinted in Figure 3, indicate that the projects analysed refer to all the principles that were postulated. However, the majority of the projects relate to sustainable development and questions on participation, communication and good governance. Figure 3 makes it obvious that the two FoPs are correlated and refer to each other. Sustainable development cannot be achieved without the appropriate means and mechanisms for empowering and involving the stakeholders and partners and for holding them responsible!

The fingerprints show a differentiated relevance of the FoPs. Again, projects related to a feasibility check, planning and evaluation have a particularly broad fingerprint. The more a project is focussed on just one problem only, the fewer the FoPs that will be addressed (e.g. Figure 3b, f). The FoP of an ethically based approach becomes visible in one project only (Figure 3i). It may be assumed that ethical constraints are not addressed so frequently, since a recent understanding of MPA claims to be rather rational (see also: Table 1).

<Figure 3 about here>

3.3 Fields of Activity: the emerging complexity of planning

Firstly, many projects directly connect to particular FoA (fields of activity) (e.g. Figure 4a, c, e), whereas others may be termed cross-cutting topics, connecting to diverse FoA in the life cycle of a PA (e.g. Figure 4 b, g). This implies that results achieved in the project are relevant in different contexts. Once again, the projects related to planning and evaluation are very wide-ranging: Inherently, planning projects anticipate the whole life cycle of a PA. Similarly, evaluations analyse and reflect the whole life cycle (if not focussed on a particular question or activity). Jungmeier et al. (2010, p.88) have investigated the planning of three Austrian biosphere reserves: Because of their complexity the authors termed these processes “extreme planning”.

<Figure 4 about here>

4. Discussion: a third generation of Protected Areas?

By comparing the pattern of each of the projects against the background of historical development and recent literature, some new constituting elements become visible.

- Sustainability has become a cross-cutting issue in many activities, mostly connected to the new mechanisms of governing and steering (Borrini-Feyerabend and Kothari, 2004; Borsdorf, 2010; Jungmeier et al., 2010)
- The inter- and transdisciplinary nature of the activities in MPA has accelerated.
- The motivation in MPA is claimed to be more rational and evidence-based than in the past. (Weixlbaumer, 2010; Seville Strategy).
- The augmentation in the number of FoPs has made the management process more complex, and the complexity culminates in planning and evaluation (Leverington, [Hockings and Costa, 2008](#); Pflieger, 2007; Phillips, 2000a).

Referring to the ideas and concepts of Lane (2010), Weixlbaumer (1998, 2005, 2010), Mose (2005) and Imboden (2007) the author wants to sketch a third generation of PAs. The change in paradigms in nature conservation in general, and in PAs in particular, was detected and described by Weixlbaumer (1998, 2005). Undoubtedly, this change has provoked alternatives to the traditional top-down, sovereign and prohibitive concepts of PAs of the first generation. The second generation, “landscapes of hope” (Mose, 2005, p.10), focusses on mediating between different interests, in particular the discrepancies between conservation and development (Mose, 2007, ed.). This brings in a lot of new

understanding and practical solutions. However, the new developments seem to go beyond this line, constituting already a third generation of PAs. The constituting parameters of the three generations are presented in Table 1. The elements that may be most distinctive are the steering mechanisms deriving from the principles of public administration to management and finally to governance, upgrading the *people concerned* to become *stakeholders* and then to *owners*. Screening the different types and categories of PA, internationally some 20 IUCN categories, such as world heritage sites, biosphere reserves, Ramsar-sites, etc.) and the concept of biosphere reserves seems to be prototypes for a third generation of PAs.

The increased complexity as a summarising parameter of new requirements and principles, is a challenge to the person in charge of managing, planning and consulting PAs. The times of sectorally educated autodidacts in the MPA are over. New educational opportunities are required and will underly the consistent implementation of new concepts (“Turning Technical Experts into Multifunctional Managers of Protected Areas”: Lange and Mueller, 2009, p.63; www.mpa.uni-klu.ac.at). The enhancement of capacities, personally and institutionally, is clearly of importance (Dudley and Mueller, 2011; Stoll-Kleeman and Welp, 2008).

<Table 1 about here>

The concept of a third generation of protected areas is based mainly on data on Austria and it seems to be plausible in the middle-European context. The shift in conceptions, perception and principles has not yet been systematically assessed for other countries and continents. However, the need for further inter- and trans-disciplinary research is evident. It is hoped that the provocative findings of this paper will stimulate further empirical research.

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Abbreviations

PA: Protected area

MPA: Management of protected areas

FoA: Field of activity

SciD: (Underlying) scientific discipline

FoP: Forming Principle for the integrated MPA

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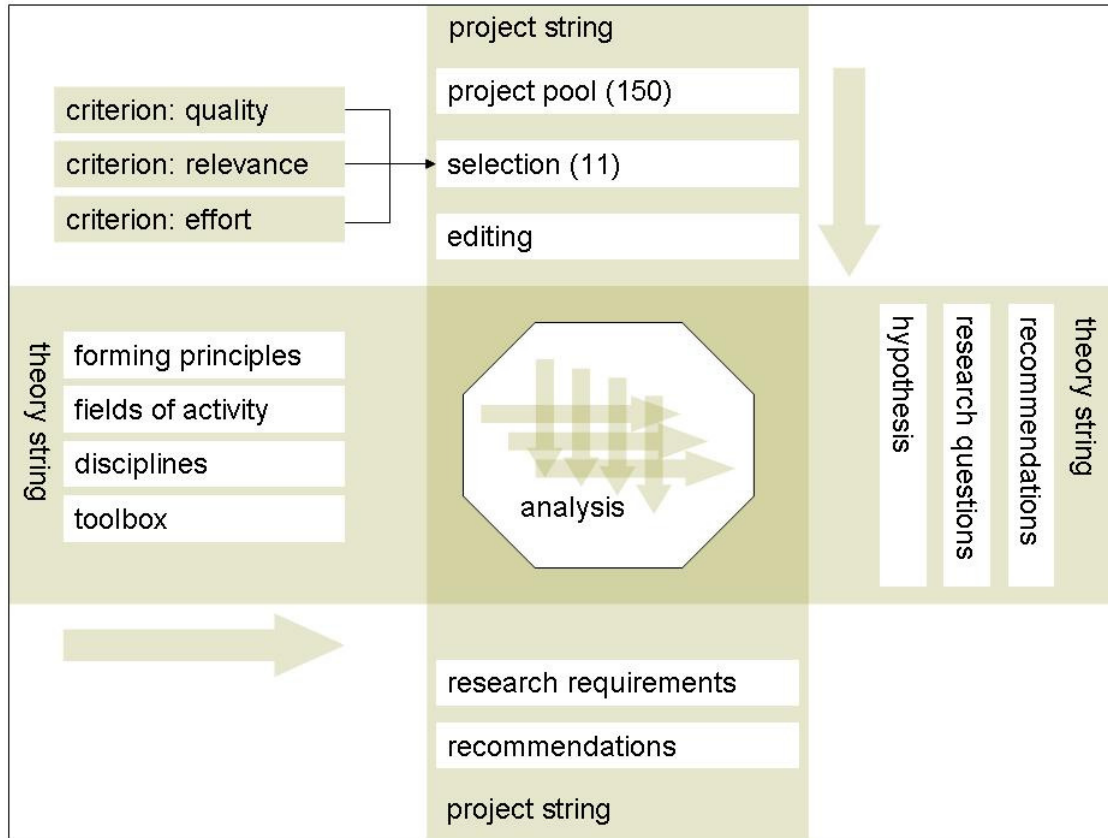
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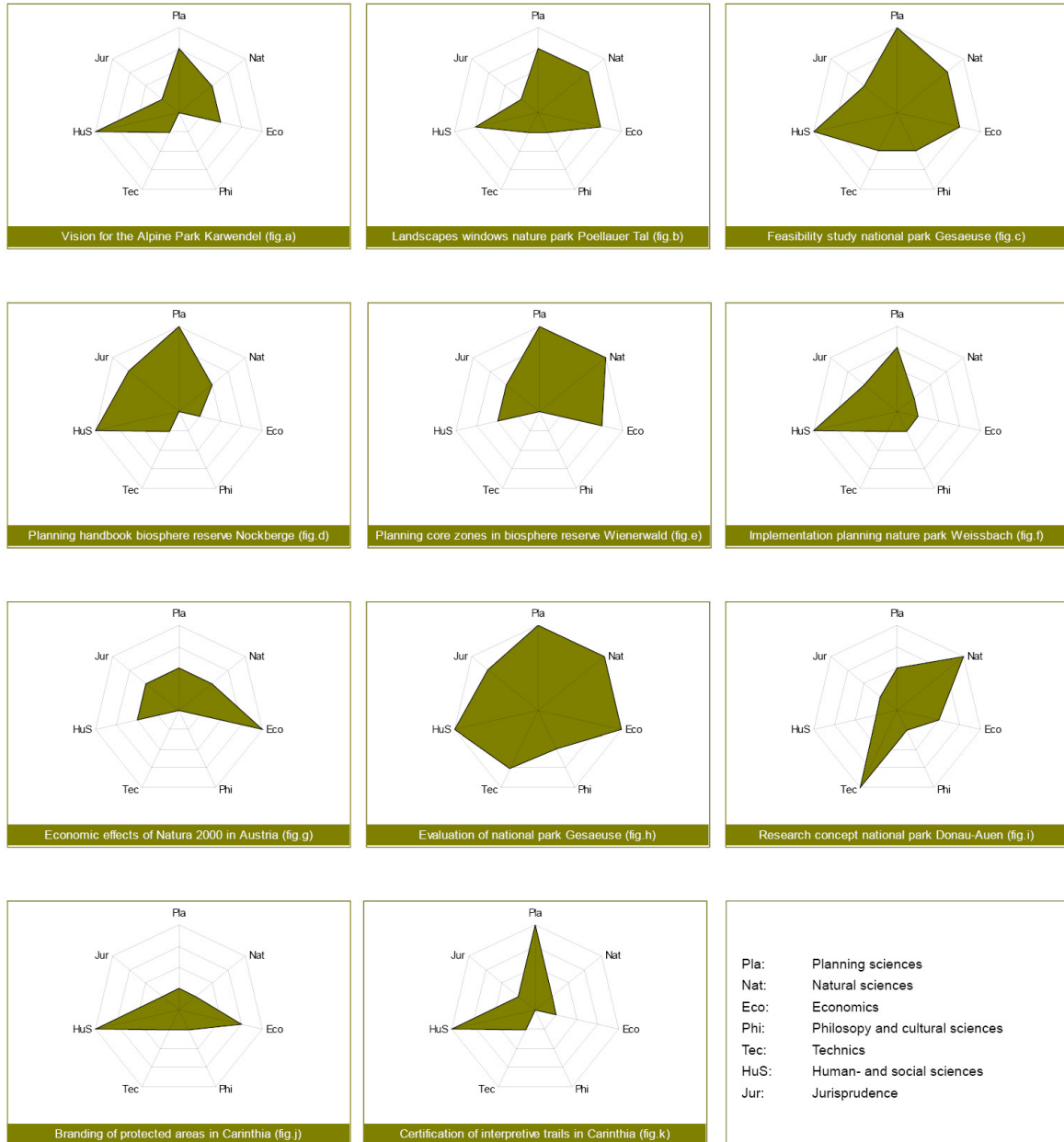
Figure 1: Research design



Source: Author's figure based on Jungmeier, 2011

Figure 2: Fingerprints of projects by SciDs

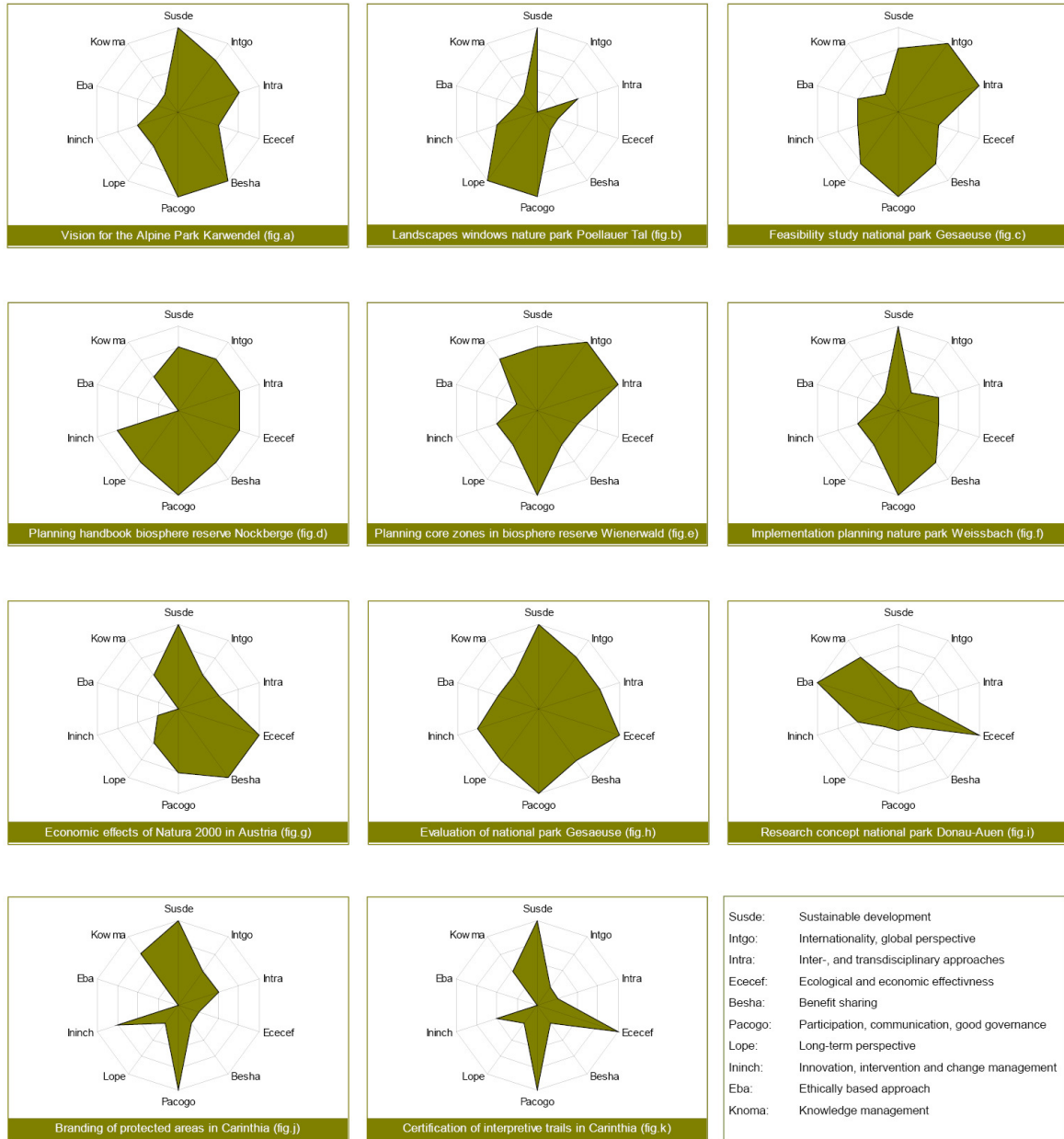
SciDs: profile of disciplines



Source: Author's figure based on Jungmeier, 2011

Figure 3: Fingerprints of projects by FoPs

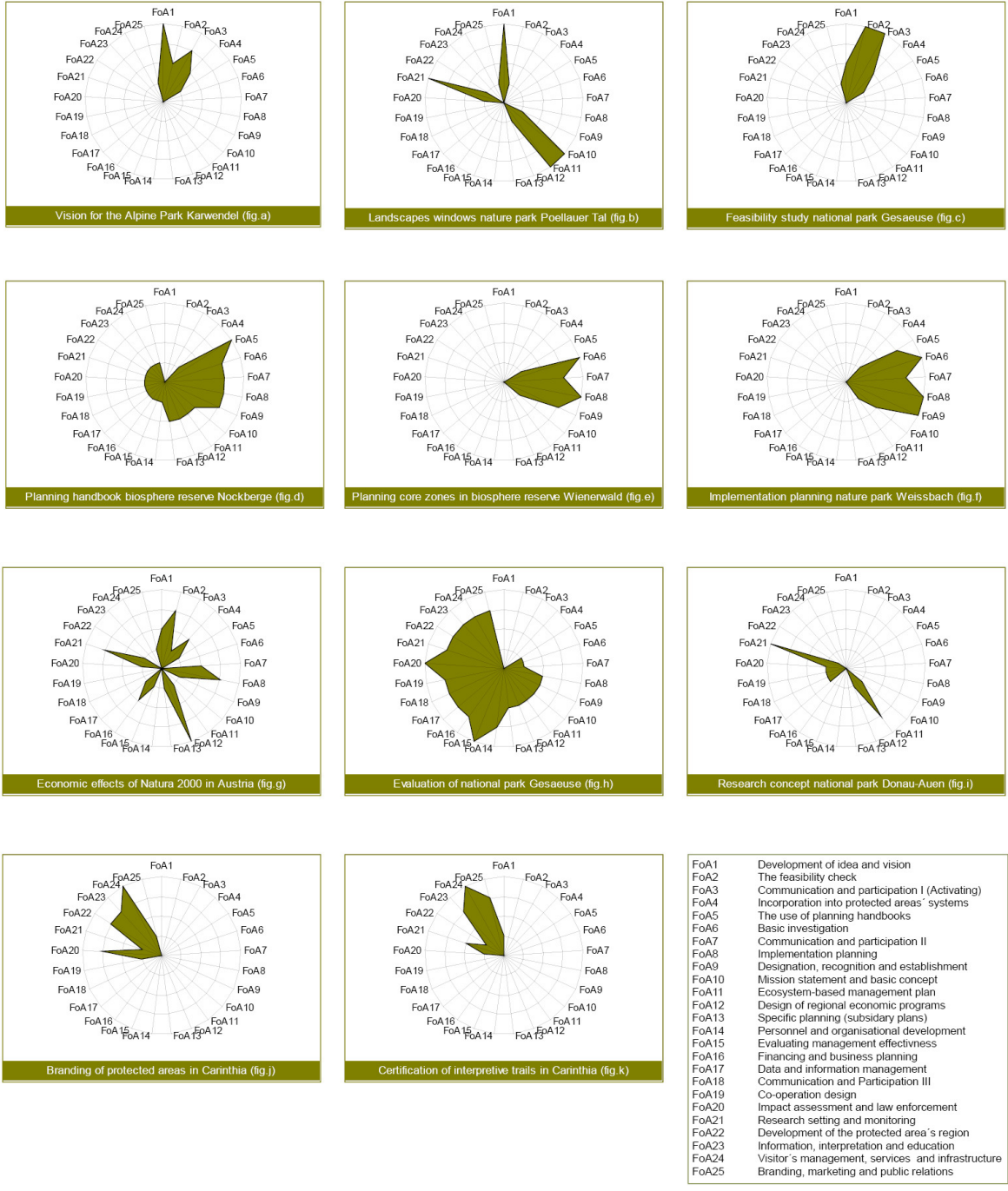
FoPs: profile of forming principles



Source: Author's figure based on Jungmeier, 2011

Figure 4: Fingerprints of projects by FoAs

FoAs: profile of fields of activity



Source: Author's figure based on Jungmeier, 2011

Table 1: Constituting elements of generations of protected areas

| | 1st Generation | 2nd Generation | 3rd Generation |
|-------------|---|--|--|
| Approach | static | dynamic | integrated |
| Concept | segregation | balance | integration |
| Motivation | ethic, romantic | emotional, ethic-political | rational, evidence-based |
| Steering | public administration top down regulating | management top down and bottom up mediating | governance network stimulating |
| Aim | species, habitats, sceneries | landuse- and ecosystems | socio-sphere in eco-sphere |
| Disciplines | natural sciences | natural sciences economics (human- and social sciences) | natural sciences economics human- and social sciences planning sciences technics philosophy and cultural sciences |
| Principles | long-term perspective internationality, global perspective ethically based approach | sustainable development internationality, global perspective benefit sharing participation, governance long-term perspective knowledge management | sustainable development internationality, global perspective inter-, and transdisciplinarity ecological, economic effectiveness benefit sharing participation, governance long-term perspective innovation, change management ethically based approach knowledge management |
| Process | constant | cyclic | ? |
| Complexity | low | high | very high |
| Staff | sectoral expert | multisectoral expert / manager | interdisciplinary manager |
| Education | sectoral | (autodidact) | specific education / training |
| References | Lane, 2010 Weixlbaumer, 1998 | Lane, 2010 Weixlbaumer, 1998 Imboden, 2007 Mose, 2005 | Imboden, 2007 Getzner & Jungmeier, 2009 Jungmeier, 2011 |

Source: Author's figure based on Jungmeier, 2011