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AN EVALUATION OF INTEGRATED PROTECTED AREA MANAGEMENT IN SLOVAK NATIONAL PARKS

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Abstract

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In this paper, theoretic and scientific elements of protected area management were analysed. Specifically, one of the tools for the implementation of the integrated management of Slovak national parks was applied, and at the same time the parks were advised of the steps that are necessary for improvement and greater effectiveness of national park management.
This paper comes out of European categories of protected areas from: the view of natural conservation strategy, the integration of social-cultural, economic and ecological aspects, a participative approach in protected area management, and new technologies and procedures. The paper pragmatically explains the mission and goals of protected areas in biodiversity protection in regional development, the development of lists with accessible tools in the management of protected areas, and support dialog with key stakeholders. It does this through implementation of integrated solutions and through the development of know-how, in order to create benefits for nature conservation as well as to attain the support of local people. From the outcomes of management analysis it is clear that, even though Slovak national parks have a long history and tradition, we have never thought about certain fields of activity that are causing problems in our specific situation. Therefore, this Paper also evaluates system methodology for integrated protected area management methodology. We underline the advantages of independence, interactivity and integration of the best practices.

Key words: evaluation, integrated protected area management, national parks, IPAM toolbox

Introduction

Protected areas are essential for biodiversity conservation. They are the cornerstones of virtually all national and international conservation strategies, set aside to maintain functioning natural ecosystems, to act as refuges for species and to maintain ecological processes that cannot survive in most intensely managed landscapes and seascapes (Dudley, 2008). The IUCN protected area management categories are a global framework, recognised by the Convention on Biological Diversity, for categorizing the variety of protected area management types.

Scientists have been warning of the decline of biological diversity for a long time. This is why the Convention on Biological Diversity was adopted in 1992, at the Conference on Environment and Development in Rio de Janeiro. Ten years after, in 2002, at the World Summit on Sustainable Development in Johannesburg, a concrete target was adopted. The aim was to achieve a significant reduction in the current rate of biodiversity loss by 2010. However some authors (Haber, 2008) have a critical overview of the different natural dimensions of the biodiversity concept. Without protected areas, biodiversity cannot be cared for and controlled. Protected areas can make a specific contribution to the conservation of biodiversity. Protected areas are seen as the most promising and effective response strategy to fight biodiversity loss (MEA, 2005). We can also mention the remarkable and highly appreciated achievement of EU biodiversity policy, which up to now includes more than 26.000 protected areas among the EU member states, comprising an area of 850.000 $km^{2,}$ or about 20% of the EU territory (EC, 2006).

Protected area system at the national level should be is established and maintained an ecologically representative and effectively managed. To achieve this, management effectiveness evaluations of protected areas are vital. They make it possible to assess the status of the so-called "paper-park crisis". This term refers to the designated protected areas that have turned out to exist exclusively "on paper" while failing to achieve their conservation objectives (Stoll-Kleemann, Job, 2008).

From the more than 117.000 protected areas worldwide, over 60% are classified under the IUCN system (Lockwood, 2006). The IUCN has defined a series of six protected area categories based on the primary management objective. The definition is clarified phrase by phrase and should be applied with some accompanying principles. Categories are described by their main objective, other objectives, distinguishing features, the role in the landscape or seascape, and unique points and actions that are compatible or incompatible. A national park (category II) is a protected area managed mainly for ecosystem protection and recreation (Table 1).

T a b l e 1. Matrix of management objectives and IUCN protected area management categories (IUCN WCPA, 2000).

Management objectives	**IUCN protected area management category**						
	Ia	**Ib**	**II**	**III**	**IV**	**V**	**VI**
Scientific research	1	3	2	2	2	2	3
Wilderness protection	2	1	2	3	3	-	2
Preservation of species and genetic diversity	1	2	1	1	1	2	1
Maintenance of environmental services	2	1	1	-	1	2	1
Protection of specific natural and cultural features	-	-	2	1	3	1	2
Tourism and recreation	-	2	1	1	3	1	3
Education	-	2	2	2	3	2	3
Sustainable use of resources from natural ecosystems	-	3	3	-	2	2	1
Maintenance of cultural and traditional attributes	-	-	-	-	-	1	2

Notes: 1 – primary objective; 2 – secondary objective; 3 – potentially applicable objective; – – not applicable.

The special characteristics of Europe – its relatively high population density and the long history of human modification of the landscape – complicate the designation of protected areas that are large and natural enough to fulfill the criteria of category II (Europarc, IUCN, 2000). However, this category is vital to ensure the protection of a proper representation of Europe´s natural heritage. Issues which have emerged in the interpretation of the system are: the size of protected areas, zoning within protected areas, management responsibility, ownership of land, regional variations, multiple classifications, the areas around protected areas and international designations. This should also be considered during the drawing up of business plans (IUCN WCPA, 2000).

Bishop et al. (2004) introduced the idea, that also for future management categories of protected areas a practical and philosophic system for planning, management and monitoring of them should be recognized. Study has resulted in three basic recommendations, leading towards improvement in monitoring and management, an increase of awareness, and building capacities and towards development of new guidelines for systems of categorisation of protected areas.

The main goal of protected area administration should be first of all the achievement of optimal relations between biodiversity conservation and suitable socio-economic development of protected areas, which can often support conservation. The main tool for the achievement of presented goals should be the methodology of participative management of protected areas and the valuation of conditions that are necessary for realisation in general practice.

A good example can also be the concept of biosphere reserves in the framework of UNESCO Man and the Biosphere program. These areas combine biodiversity protection and sustainable development. Management of ecosystems, research and education are the central focus of biosphere reserves. The concept of biosphere reserves has resulted in the designation of currently more than 500 sites in more than 100 countries, with the primary goal to serve as learning sites for information exchange on conservation and sustainable development. Seville's strategy (1996) introduces three main functions. The latest documents (Madrid declaration and Madrid action plan, 2008) discussed new challenges, such as climate change, ecosystem services etc. Biosphere reserves provide excellent cases for studying the interdependence of social and ecological processes.

Since planning and managing protected areas involves many different legal, administrative and technical realities, the experts in charge have to face an unmanageable variety of tasks (integration of different interests, diversity of categories, diversity of technical issues, diversity of approaches, international requirements and regional demands, permanent lack of resources). Many authors state shifting concepts, such as PAN Parks, the Seville strategy and the Ramsar in the management of protected areas (e.g. Jungmeier et al., 2008). New approaches are characterised by managerial control of the areas, protection of spaces and processes and the connection between nature conservation and economic development. Because no protected area is an island, some projects (PANET) are intended to theoretically prepare and practically implement a network of sciences in order to improve positive regional economic effects, cooperative management, the financial situation and conservation issues by creating synergies between individual protected areas. Some authors define a paradigm shift from "ecology first" to "people first" (Stoll-Kleemann, Job, 2008). On the

other hand, some authors (Fischer, 2008) challenge the paradigm "people first" protected area management, arguing in favour of a strict law enforcement approach.

Synge (2004) describes in an example of four case studies the most important aspects of protected area management: zoning, monitoring, collaborative management and the management of visitors. Management planning consists of 13 basic steps (Thomas, Middleton, 2003). An important question, especially in the last years,concerns management effectiveness in protected areas. Hocking et al. (2006) state basic reasons for evaluation management effectiveness in protected areas: better management, effective reallocation of sources, an increase of transparency, involvement of communities and the introduction of protected area values.. We can mention many examples: e.g. WWF Rapid Assessment and Prioritisation Methodology, which were applied in Slovak national parks (WWF, 2004b), the Management Effectiveness Tracking Tool, developed by the World Bank and WWF (Stolton et al., 2003) or assessments based on a WCPA framework, applied in Finland´s protected areas (Gilligan et al., 2005). Another example is the GoBi (Governance of biodiversity research project) group which evaluates and analyses success and failure factors of protected areas and biosphere reserve management and governance approaches. The results are based on a broad range of different quantitative and qualitative data sets. The last example is from the United States of America. In 1872, the American congress established Yellowstone as the world´s first national park. That single act was the beginning of a remarkable effort to protect the country's natural, historical and cultural heritage. Over the years, people learned that designating national parks does not automatically ensure the well being of the resources parks are meant to protect and the history those resources represent. The National Parks Conservation Association initiated the State of the Parks program in 2000 to assess the condition of natural and cultural resources in the parks, forecast the likely future condition of those resources and determine how well equipped the National Park Service is to protect the parks (Kloepfer, 2002).

We can see that change of the nature protection conception from a conservation approach to an active approach, taking into account not only ecological interaction but also economic and socio-cultural, creates a number of of questions connected with integrated planning and management of protected areas. These questions include the integration of different interests, different categories, different approaches, shortness of sources, regional demands and international commitments, communication, marketing, decision, financing, and the creation of benefits. The main goal of this paper is to recognize the situation in Slovak national parks. What are the theoretic and scientific foundations of protected areas management? What result can we receive from the application of one tool for the implementation of integrative management? And which steps are needed for improvement and more effectiveness of management?

Study areas

Slovakia is a relatively small country, yet abounds with exceptionally rich biodiversity. Despite this fact, natural habitat acreage, as well as flora and fauna species number, constantly decrease. The present system of regional nature protection in the world and in Slovakia is a result of historical evolution (Vološčuk, 2005). Accession to the EU

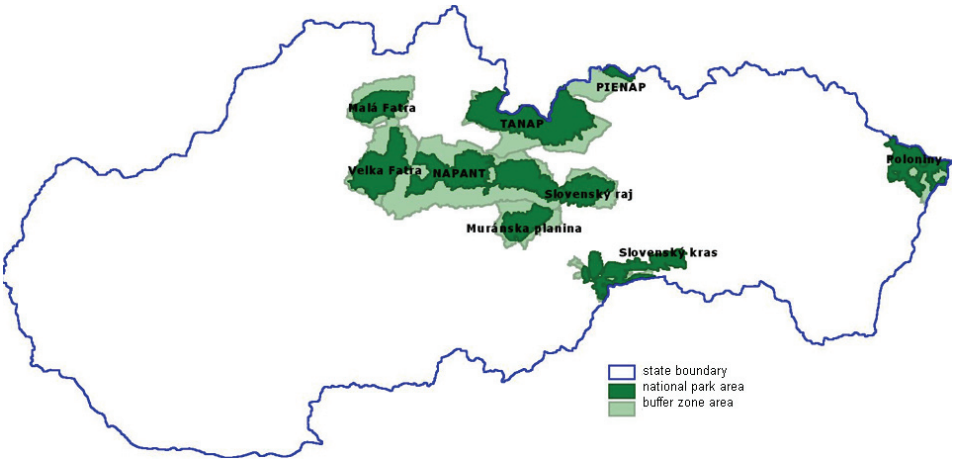

Fig. 1. Study areas (nine Slovak national parks).

brings a huge increase in investment in industrial production, tourism development, and agriculture intensification, which actually strongly increases pressure to hitherto well-preserved wildlife.

In the last years, nature protection also underwent many changes in Slovakia. The national system of protected areas consists of 9 national parks (Fig. 1, Table 2), 14 protected landscape areas and 1.073 small-scale protected areas – national nature reserves, natural reserves, national nature monuments, nature monuments and protected distribution ranges (according to Act of the National Council of the Slovak Republic no. 543/2002 on nature and landscape protection). Their total area is 1.135.209 ha, 23.1% of the area of Slovakia. In the last years, NATURA 2000 was the priority of the foundation and declaration of a complex European system of protected areas (38 protected bird areas: 1.236.000 ha, 25% of the area of Slovak Republic, 55,1% overlap with a network of existing protected areas; 382 areas of European importance: 570.000 ha, 11.7% of the area of the Slovak Republic, 86% overlap with a network of existing protected areas). In the next period, in the sphere of nature and landscape protection, it will be unavoidable to finish the revaluation of the national

T a b l e 2. Overview of study areas (including year of establishment and size).

National Parks (NP)	Year established	Area (ha)		
		Area of NP	Buffer zone	Total
Tatranský NP	1949	73.800	30.703	104.503
Pieniny NP	1967	3.750	22.444	26.194
Nízke Tatry NP	1978	72.842	110.162	183.004
Slovenský raj NP	1988	19.763	13.011	32.774
Malá Fatra NP	1988	22.630	23.262	45.892
Poloniny NP	1997	29.805	10.973	40.778
Muránska Planina NP	1997	20.318	21.698	42.016
Slovenský kras NP	2002	34.611	11.742	46.353
Veľká Fatra NP	2002	40.371	26.133	66.504

system of protected areas including their division into zones, to build a system of research and monitoring of protected species, to realize management plans, and to make more effective cooperation between landowners and land-users in protected areas (Urban, 2005). Other important challenges connected with NATURA 2000 sites are financing, communication and awareness raising, stakeholder involvement, management plans and threats to sites (WWF, 2004a). Three national parks are at the same time recognised also as biosphere reserves (Tatry, Poloniny, Slovenský kras). The situation is often complicated, overlapping of different categories, interfering in one protected area due to differently weighted goals (e.g. national park, NATURA 2000, biosphere reserve). Most of the national parks were pre-categorized from protected landscape areas (which corresponded with IUCN category V.).

Current Slovak legislation meets the IUCN criteria for protected areas (national parks) and defines the primary objectives. However, some critical points were noted in Tatranský National Park, e.g. exploitation in the national park area and the provision of environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor management (Crofts et al., 2005). This picture is very similar to other national parks. Also, based on the findings of the RAPPAM assessment, main strategic recommendations to improve management effectiveness of national parks and systems of protected areas in Slovakia were identified (WWF, 2004b). The Slovak case study showed that the most significant pressures and threats include forestry management, tourism and recreation, building and infrastructure development, agriculture, hunting and poaching. From the point of view of the biological and social significance of existing threats, Tatranský NP, Slovenský raj, Malá Fatra and Poloniny are leading areas. A supreme audit of institutions in Poland and Slovakia was performed in 2005, as well as a parallel audit of the functioning of national parks at the Polish–Slovak border area with regard to preservation, sustainable use and restoration of natural resources (Supreme chamber of control of the Republic of Poland, Supreme audit office of the Slovak Republic, 2006). Unfortunately, in the last years, we can observe that the situation in Slovak national parks has become worse despite EU legislation (e.g. warnings and starting infringement procedures against Slovakia from the EC, and reactions from the IUCN etc.).

Methodology

For the evaluation of integrative protected area management under Slovak conditions, we used the IPAM toolbox. The toolbox focuses on the evaluation, harmonisation and development of methods, instruments and infrastructures for planning and managing protected areas (Wagner et al., 2005). The IPAM toolbox consists of three components (self-assessment, knowledge base, and recommendations).

As a first step, we entered the system after logging in at the IPAM portal (user registration with name, address, country and language). After creating the user profile, we began with the self-assessment. We created profiles for nine national parks in Slovakia (name of the protected area, category, bio-geographic region and country were entered).

The self-assessment has the following aims: to identify the recent state of our protected area, to open a direct route to suitable, condensed information, to enable us to make a comparison with previous stages in the development of a protected area or with other protected areas, to gain an overview of all required activities and, on this basis, to plan and evaluate further activities (improving management effectiveness). The management of protected areas has been divided into three phases and 25 fields of activity (Table 3, Fig. 2). The phases follow the life-cycle of a protected area and differ fundamentally with regard to structure, requirements and activities.

When we were going through the self-assessment, we answered cross-checking questions based on interviews with national park managers. We found the status of each site with regards to phases and fields of activity shown by a percentage value and by traffic lights (100% = green). The smallest entities in the toolbox are actions. Three to six actions form a field of activity. We consider the actions of a field activity to be not started, started or completed. The toolbox calculates an index between 0% and 100% to indicate how much of our field of activity has been completed so far.

After running through the self-assessment (Fig. 3), a report shows the result of the consultation process in the form of a summary. We used three available options: a progress report, a detailed report and a recommendation report.

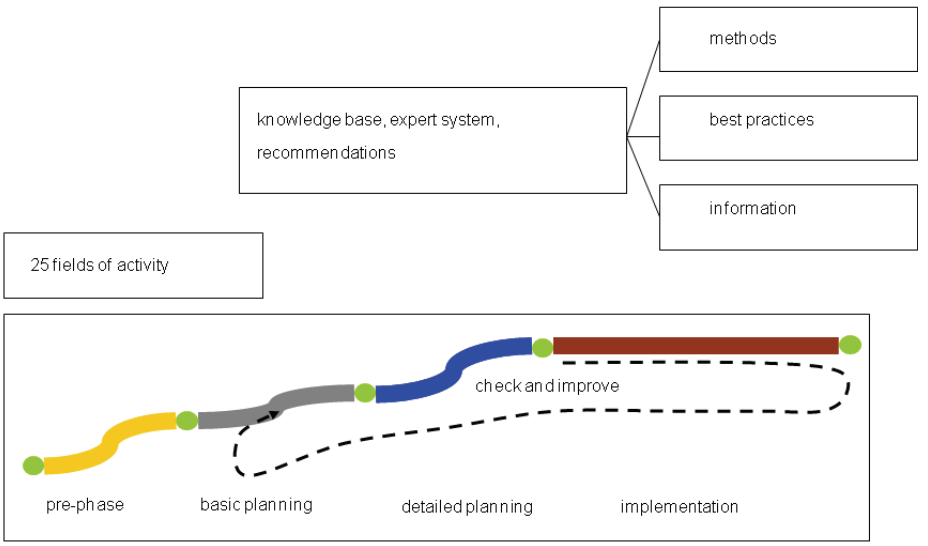

Fig. 2. The life cycle of a protected area (taken from Wagner et al., 2005).

T a b l e 3. An overview of the fields of activity in protected area management.

Phases		**Fields of activity**
Pre-phase		Development of idea and vision
		Feasibility check
		Communication and participation I
		Incorporation into PA-systems
Planning phase	Basic planning	Planning handbook
		Communication and participation II
		Basic investigation
		Implementation planning
		Designation and establishment
	Detailed planning	Mission statement and basic concepts
		Ecosystem-based management plans
		Design of (regional) economic programs
		Specific planning (subsidiary plans)
Implementation phase		Personnel and organisational development
		Evaluating management effectiveness
		Financing (business plan)
		Impact assessment and limitation
		Data and information management
		Research setting and monitoring
		Communication and participation III
		Development of protected area´s region
		Co-operation design
		Information, interpretation and education
		Visitor management, services and infrastructure
		Marketing and public relations

Fig. 3. Self-assessment on the example of Tatranský National Park (www.ipam.info).

Results

Below are the outcomes of the management analysis for each evaluated national park in Slovakia. The example of TANAP from Fig. 6 clearly shows which phase needs urgent improvement and what are the highest priorities. Table 4 lists single steps which are needed

T a b l e 4. Recommendations for TANAP with high priority.

Field of Activity	Recommended Action
Feasibility Check	
	Transparency of process
	Acceptance zoning
Planning Handbook	
	Technical backbone
Communication and Participation II	
	Regular news
Mission Statement and Basic Concepts	
	The site´s mission
	The site´s strategy

Table 4. (Continued)

Field of Activity	Recommended Action
	The site´s appearance
Ecosystem-based Management Plans	
	Calculation of costs and finances
	Communication of the plan
Design of (Regional) Economic Programmes	
	SWOT – Analysis
	Product / Service – Portfolio
	Product / Service – Platform
	Impulses for investment
Specific Planning (Subsidiary Plans)	
	Overview specific plans
	Interface specific plans
Evaluating Management Effectiveness	
	Management cycle
	Indicators of success
	Monitoring and benchmarking
Financing (Business Plan)	
	List of benefits
	Business plan
	New incomes
	Financial plan
Impact Assessment and Limitation	
	Pre-check
	Transparency
Research Setting and Monitoring	
	Research profile
	Research concept
	Monitoring concept
Communication and Participation III	
	Permanent communication
Development of Protected Areas Region	
	Regional Economic Program
	Info-Platform
	Partnerships
	Trademark
Co-operation Design	
	Institutional partnerships
Information, Interpretation and Education	
	II&E – concept
Marketing and Public Relations	
	PA´s brand
	Staff enthusiasm

for the improvement of Tatranský National Park management in critical areas. Even though some people can claim the evaluation is too subjective, Figs 4–5 show us a comparison between levels of management in Slovak national parks.

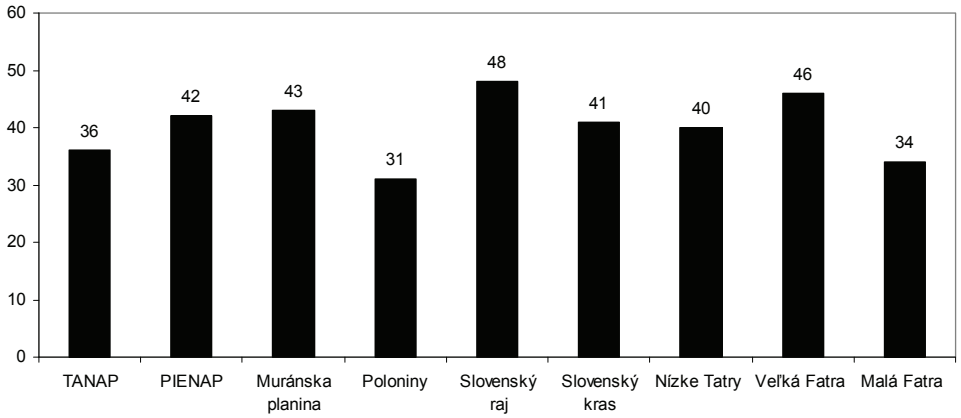

Fig. 4. Comparison of overall management in Slovak national parks.

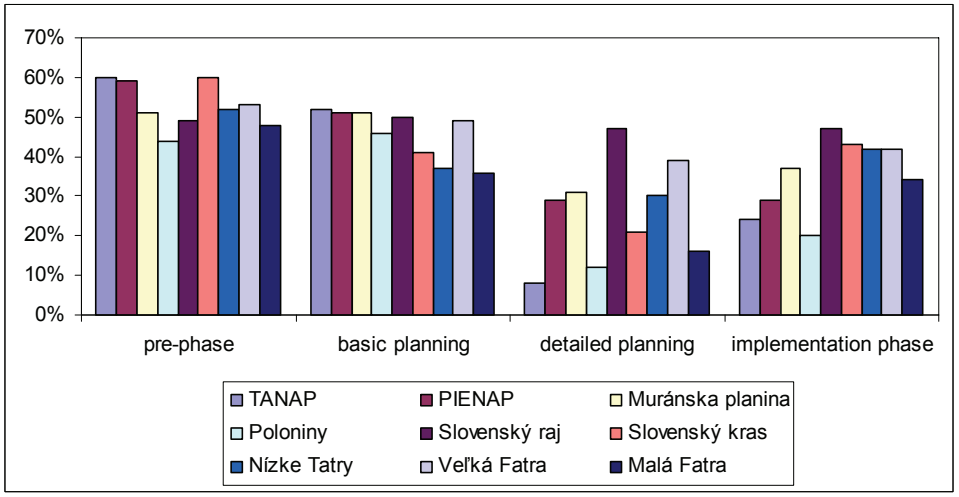

Fig. 5. Comparison of management of Slovak national parks in each phase of planning.

Discussion and conclusion

This paper analyzed management in Slovak national parks with the IPAM toolbox. We highlight the contribution of this paper at two levels. Primarily, it was the exclusive test of the IPAM toolbox under Slovak conditions that was important. From tangible recommendations we assume which fields of activity were neglected in the past. We found that even

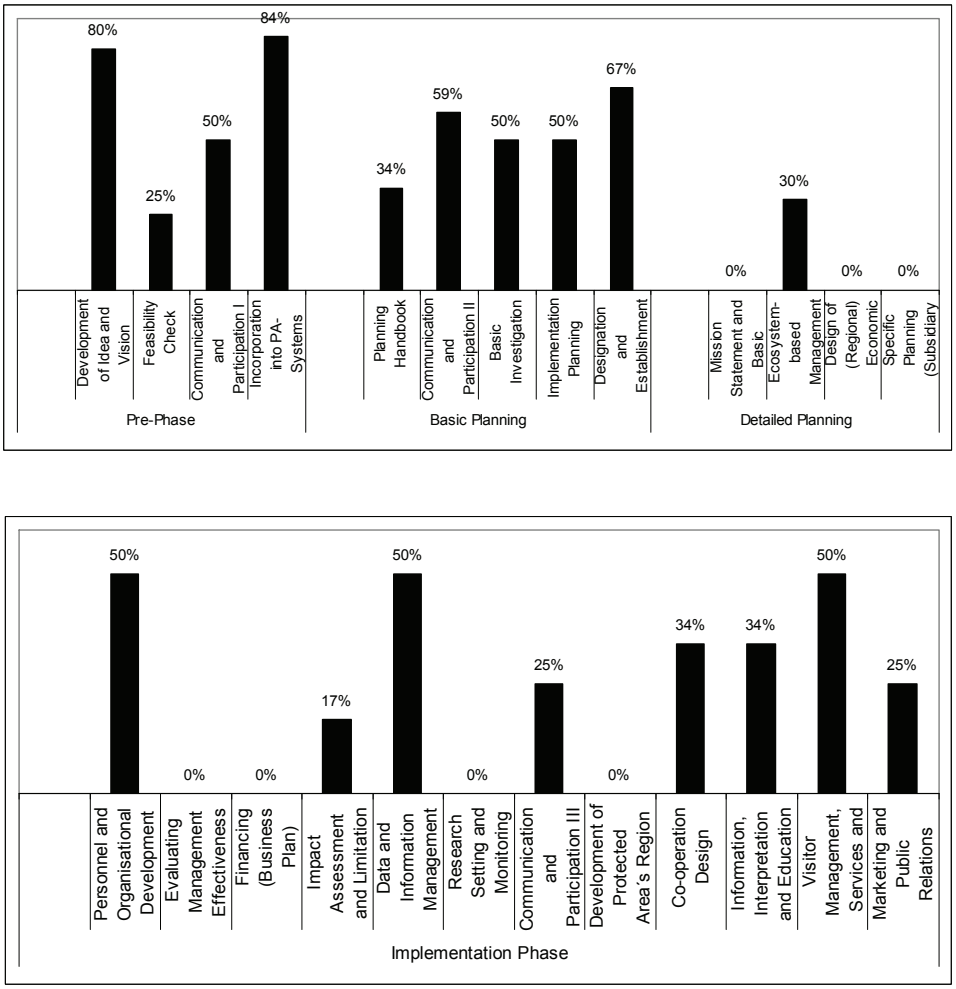

Fig. 6. Progress report for Tatranský National Park.

Slovak national parks have quite a long history and tradition. We never thought about the fields of activity that are causing problems in our specific situation.

All evaluated protected areas were established during the communist period (top-down approach), without any or with very poor discussion processes with all relevant stakeholders (Švajda, 2008). In addition, the situation also complicates the difficult and different ownership structure of land in protected areas. These are the key reasons why general support from local people towards nature conservation is so low. There is a strong and urgent need to start and improve activities that are essential for the pre-phase of planning (development of the idea and vision,

feasibility check, communication and participation). We must consider a very critical fact, that only one (PIENAP) of nine evaluated national parks has approved zoning. We can also present a critique of transparency and acceptance of prepared zoning for other national parks.

Regarding basic planning, the most critical activity is insufficient communication and participation (a missing platform for involvement of all stakeholders in the planning process through e.g. the consultative and scientific board of national parks, lack of regular information expansion e.g. through newsletters or spokesmen). Hesselink et al. (2007) introduce many effective communication education and public awareness strategies for how to stimulate and engage people to conserve biodiversity and to sustainably use natural resources. In the field of implementation planning, we can again mention problems with zoning and the compatibility of Slovak national parks with the requirements of the international category. Also, previous evaluations that focused on Slovak national parks already noticed that decision-making processes, including compensation issues, are not clear.

The results from the detailed planning phase showed many problematic areas in evaluated national parks. There is no developed common mission statement and long-term perspectives based on participative processes. Management plans are not based on an ecosystems approach and preparation of plans based on new methodological delays. Above all, the new methodology missed very important issues as indicators to evaluate success and necessary communication with stakeholders. A worse situation is in the field of regional economic programs. There is no connection and platform between national parks and the regional economy, respectively; nobody presents this dependency. We missed the studies presenting the economic impact of national parks and perceptions of key actors in national parks (Getzner, 2003). One of the results is that all stakeholders including business people and politicians are complaining about nature conservation as the brake of regional development. The results from other countries (e.g. Austria, Germany) clearly indicate that tourism in protected areas can generate considerable benefits for regional development. This information should increase the acceptance of national parks by both local communities and politicians. It means that consequently, national parks need to further incorporate the concept of socio-economic monitoring (Job, 2008). Regarding specific planning, there have been previous alerts stated of many different plans in the same area (where priority should be nature conservation), and tragically, they are often in contradiction.

The implementation phase is the most complicated part of the planning process, with the highest number of critical findings and recommendations for the improvement of management. Regarding personnel and organisational development, there is no endeavour as to how to attract young personalities and give them future career opportunities. By contrast, we observe a very strong central-oriented and multi-level structure of organisation that leads to the accumulation of bureaucracy and nearly no decision-making competence of directors. This system is also very dangerous because of its strong political influence (removal of national park directors and many skilled professionals from administrations after the last governmental election in 2006). We also miss an ethical code for people working for nature conservation. Many examples mentioned in the previous chapter can be found concerning evaluating management effectiveness in Slovak conditions. The cardinal problem is that the Ministry of Environment never followed these recommendations. Some years ago the State

Nature Conservancy prepared a strategy that proposed new ways of financing. Unfortunately, all national parks are, up to now, completely dependent on a very strict state budget and nearly all money goes to pay the operational costs of administration. Emerton et al. (2006) provide options for sustainable financing of protected areas. Existing impact assessment and limitation procedures in many cases neglected transparency and the evaluation of other aspects (e.g. SEA). The situation with data and information management was improved thanks to the preparation of the NATURA 2000 network, however there are still problems with the updating and availability of some types of information that are relevant for protected areas. Research and monitoring is insufficient; we are especially lacking long term monitoring programs and research related to social and economic issues. No one from evaluated national parks promotes protected areas as trademarks and brands for local products and services. Also cooperation at the national and international level among administrations is very poor (language barrier), being based primarily on ad-hoc and personal contacts than on any systematic way. Information, interpretation and education activities do not cover all target groups; they are based on old knowledge and approaches without any new didactic approaches and educational methods. National parks still primarily use strict approaches related to visitor management ('do not enter') rather than proactive ways (new routes attracting visitors, 'hot-spots'). We lack a well-balanced network of infrastructure (interpretive trails), programs of activities for visitors, including their feedback and information materials, which the national park administration could use very effectively for creating a positive impression among visitors (e.g. interpretation of natural disasters). Regarding marketing and public relations, we can only repeat the missing PA's brand, the enthusiastic staff (professionals and volunteers) and the long-term partnership with the media.

Based on previous statements, there is a possibility to improve the system of management through the realisation of tangible steps. This paper drew attention to the evaluation of the methodology of a system. We can underline the advantages of a system that emphasizes sovereignty, interactivity and the integration of best practices. On other hand, some people may argue against the subjectivity caused by self-assessment. This can be eliminated by the involvement of a larger team into the process of evaluation (like in RAPPAM).

We see great possibility in the use of these tools for each protected area. We also strongly recommend their use in the future before the establishment of any protected area, in accordance with precautionary principle in the field of biodiversity protection and the management of natural resources (Cooney, 2004). A wider approach to the management of protected areas is part of a new paradigm for protected areas (Thomas, Middleton, 2003).

Generally, protected areas face two broad challenges for the future: 1) uncertainty, ranging from local politics to climate change, economic conditions, and geo-politics; and 2) values, guiding relations with neighbours, visitors, and decision-makers, compounded by the dilemma as to whose values should dominate (Mc Neely, 2008). That is also one important reason why responsible Slovak authorities should take quick and high-qualified decisions leading towards improvement of management based on the above recommendations.

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