

Perceptions and evaluations of biosphere reserves by local residents in Switzerland and Ukraine

Astrid Wallner*, Nicole Bauer, Marcel Hunziker

Swiss Federal Research Institute WSL, Zuercherstrasse 111, 8903 Birmensdorf, Switzerland

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Abstract

In a cross-cultural study perceptions of local people living in the surroundings of biosphere reserves in Switzerland and Ukraine were examined using the method of qualitative interviews. In the UNESCO Biosphere Entlebuch in Switzerland people stated that they hoped for a better regional economic development due to the existence of the biosphere reserve. However, at the same time people feared further restrictions regarding land-use. In the Carpathian Biosphere Reserve located in Transcarpathia/Ukraine people tended to connect certain conditions – such as the high price for wood – directly to the existence of the biosphere reserve, when in fact these conditions and the biosphere reserve were separate, parallel developments. In both case studies three key-categories influencing local residents' perceptions and evaluations of biosphere reserves could be identified. These categories are (1) the economic situation, (2) the history of nature protection, and (3) the power balance between the involved stakeholders. Paying close attention to those three categories will help planners and managers of protected areas to better understand the reasoning of local residents for or against a biosphere reserve in their area.

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1. Introduction

Protected areas are a cornerstone of international nature protection policy. However, establishing protected areas has not always been consistent with the interests of local communities living in or next to these. Over the years, various ideas have been brought forward how local communities' acceptance towards protected areas can be enhanced (e.g. McNeely and Pitt, 1985; Zube and Busch, 1990; Lucas, 1992; IUCN, 1993; McNeely, 1995). Thereby the term participation is often used. But this term is seldom clearly defined and can be understood in various ways. Pimbert and Pretty (1997) distinguished at least seven different types of participation on the basis of the degree of involvement (Table 1). Participation used in the sense of types 1–4 will lead to no action by the local population. This corresponds to externally

driven 'top-down' models often used in establishing protected areas. In the 'top-down' approach national and international organizations and agencies are pushing parks and conservation strategies without consultation of the local people. The achievements of these kinds of participation have no lasting impact on the local residents' lives. In order to achieve sustainable conservation with long-term economic and environmental success, it is essential to value the people's ideas and knowledge and to give them the possibilities to make decisions independent from external agencies (Pimbert and Pretty, 1997). Therefore, nothing less than functional participation (type 5) will suffice. Participation in the form of types 5–7 correspond to 'bottom-up' models meaning that local communities, organizations and agencies are actively involved.

However, it must be kept in consideration that establishing protected areas inevitably brings changes for the local communities concerned, even in those cases where actual participation in the form of interactive participation (type 6) or self-mobilisation (type 7) takes place. These changes can be of different kind, e.g. change of land-use patterns, additional requirements for the production of certain goods, new marketing opportunities for

* Corresponding author at: NCCR North-South, Centre for Development and Environment (CDE), University of Berne, Steigerhubelstrasse 3, 3008 Berne, Switzerland. Tel.: +41 31 631 3059; fax: +41 31 631 8544.

E-mail addresses: astrid.wallner@cde.unibe.ch (A. Wallner), nicole.bauer@wsl.ch (N. Bauer), marcel.hunziker@wsl.ch (M. Hunziker).

Table 1
Typology of participation (Pimbert and Pretty, 1997)

Typology	Components
1. Passive participation	People participate by being told what is going to happen or what has already happened.
2. Participation in information-giving	People participate by answering questions posed by extractive researchers using questionnaire surveys or similar approaches.
3. Participation by consultation	People participate by being consulted, and external agents listen to views. These external agents define both problems and solutions.
4. Participation for material incentives	People participate by providing resources, for example labour, in return for food, cash, or other material incentives.
5. Functional participation	People participate by forming groups to meet predetermined objectives related to the project.
6. Interactive participation	People participate in joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones.
7. Self-mobilisation	People participate by taking initiatives independent of external institutions to change systems.

locally produced products. These changes can be grouped into benefits and costs associated with protected areas (Dixon and Sherman, 1990). Assessing these benefits and costs in monetary terms is extremely difficult. Nevertheless, Balmford et al. (2002) concluded in a study on the marginal benefits of retaining and converting natural habitats that 'retaining as much as possible of what remains of wild nature through a judicious combination of sustainable use, conservation, and, where necessary, compensation for resulting opportunity costs makes overwhelming economic as well as moral sense.' The argument of positive regional economic impacts of protected areas is frequently used in discussions regarding the establishment of protected areas (Elsasser et al., 1995). Nevertheless, based on various studies on the topic of local people's perceptions of protected areas it cannot be concluded that local communities regard protected areas automatically as an opportunity for economic development in their regions. The increasing consideration of local communities in nature protection policy has spurred many studies dealing with local people's acceptance of protected areas (see, e.g. Fiallo and Jacobson, 1995; Kaltenborn et al., 1999; Müller-Böker and Kollmair, 2000; Trakolis, 2001; Rao et al., 2003; Ormsby and Kaplin, 2005; Fraga, 2006; Xu et al., 2006). Their main conclusion is that local people often associate protected areas more with restrictions than with increased opportunities for themselves.

It is the objective of this paper to contribute to the study of local people's perceptions towards protected areas by examining the following research questions:

- What kinds of effects are mentioned as consequences of a biosphere reserve?
- What kinds of perceptions of biosphere reserves exist?
- Based on these perceptions, how do local people evaluate the biosphere reserve?

By analysing local perceptions towards biosphere reserves in two different cultural contexts – Switzerland and Ukraine – we tried to reveal if there are factors influencing people's perceptions of biosphere reserves which are independent of the cultural context.

We have chosen UNESCO biosphere reserves for this study, because they represent a kind of protected area with the explicitly stated purpose of bringing together ecological purposes with economic and social purposes. Biosphere reserves are a tool

for integrated management of land, water and living resources, by putting in place bioregional planning schemes, based on integrating conservation of biological diversity into sustainable development through the appropriate zonation (UNESCO, 2002). The zonation pattern enables the cooperation of conservation and development.

2. Study areas and research methods

2.1. Study areas

We looked at two biosphere reserves, which differ in the planning process and in the time span of how long they have been working as biosphere reserves, but which are located in similar situations (see also Table 2): The UNESCO Biosphere Entlebuch (UBE) in Switzerland and the Carpathian Biosphere Reserve (CBR) in Ukraine (Fig. 1). Even though the economic situation of Ukraine and Switzerland differs enormously, both biosphere reserves are located in economically peripheral areas with no big industries around. Most important for choosing these two cases was the fact that people in both areas are confronted with the question on how to support their livelihood if they want to stay in the area and whether the nomination as a biosphere reserve is hindering or supporting them in their strategies.

2.1.1. UNESCO Biosphere Entlebuch (UBE), Switzerland

The region Entlebuch is situated in central Switzerland and consists of eight communes (Fig. 2). Agriculture and tourism are the main economic sectors. The Entlebuch covers an area of 39,659 ha and on more than half of the area legal nature protection measures are enforced. The large amount of protected territory is the result of the law on the protection of mires and mire landscapes of national importance and particular beauty (Swiss Agency for the Environments Forests and Landscape SAEFL, 2004), which came into force in 1996. During the process of development of the mire landscapes inventory conflicts arose in the Entlebuch: the communes assumed that their already low economic situation would even get worse due to the protection measures. In order to find solutions to this conflict the municipal councils of the Entlebuch communes developed plans on how to generate regional economic development despite the large amount of protected territory and to use the protection status as tourism potential (interactive participation, type 6 or

Table 2
Main differences between the UNESCO Biosphere Entlebuch (UBE) and the Carpathian Biosphere Reserve (CBR)

	UBE	CBR
Form and size	The region Entlebuch, 39,659 ha	Cluster of eight detached massifs in Transcarpathia, 53,600 ha
Planning process	'Bottom-up' approach: initiative from local residents; approval through voting in all communes concerned	'Top-down' approach: presidential decree
Type of participation	Interactive participation (type 6) to self-mobilisation (type 7)	Passive participation (type 1), participation in information-giving (type 2), recently participation by consultation (type 3)
Zonation	Core area: 8% Buffer zone: 42% Transition zone: 50%	Core area: 31% Buffer zone: 34% Transition zone: 35%
Main purposes	- Preserve the natural beauty of the Entlebuch - Preserve the landscape as an economic and recreation area for the future	- Restoring of disturbed ecosystems to their natural state - Preservation of cultural heritage - Promotion of sustainable development in the region
Working methods	Regional Management of UBE develops strategies together with project groups	Management of CBR develops strategies

even self-mobilisation, type 7). During this process it became clear that the Entlebuch with its protected landscapes met all the requirements necessary for the designation as a UNESCO biosphere reserve. An elected regional management board, composed of members of the region, developed a plan for a biosphere reserve and public meetings were held in all the communes concerned in 2000. The proposal was approved with a vast majority. The application was then sent to UNESCO who designated the area as a biosphere reserve in 2001.

The main purpose of the biosphere reserve lies not only in preserving the natural beauty of the Entlebuch but also in containing the landscape as an economic and recreation area for

the future. This is done by promoting regional products, cultivating natural resources and developing ecotourism. In order to guarantee the continuous participation of the local residents, the regional management board keeps working in close connection with the project groups, which have been established in the process of preparing the designation proposal.

2.1.2. Carpathian Biosphere Reserve (CBR), Ukraine

The Carpathian Biosphere Reserve is located in the western part of Ukraine, known as Transcarpathia. In 1968 it was originally organized as a state reserve with total protection status for the purpose of preserving the unique mountain ecosystems

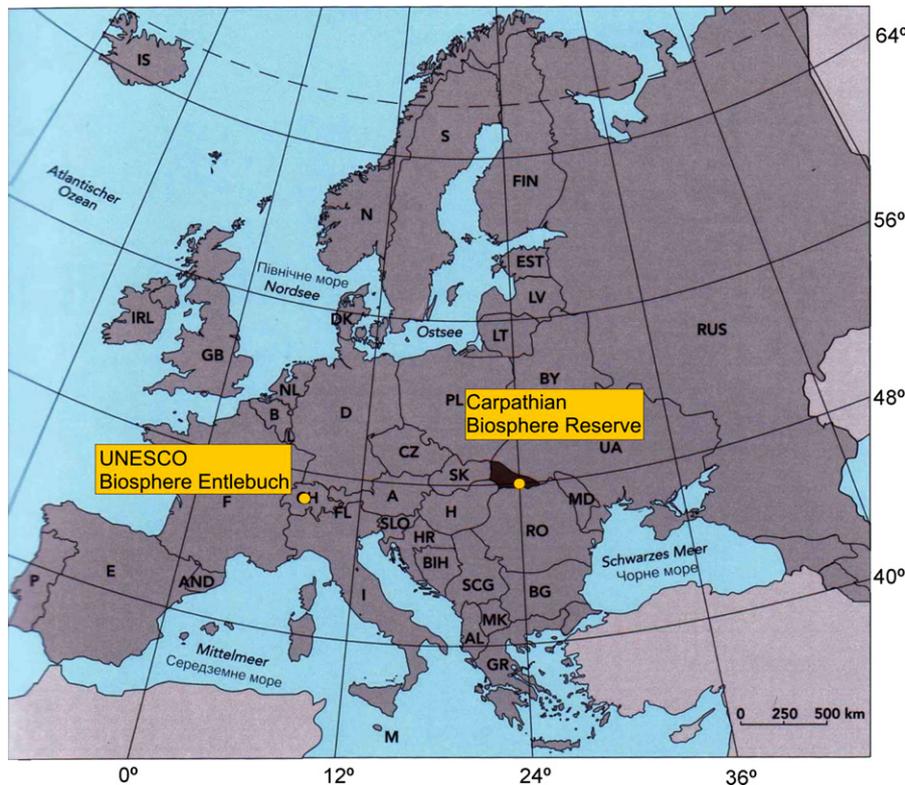


Fig. 1. UNESCO Biosphere Entlebuch, Switzerland and Carpathian Biosphere Reserve, Ukraine—overview of their location.

UNESCO Biosphere Entlebuch

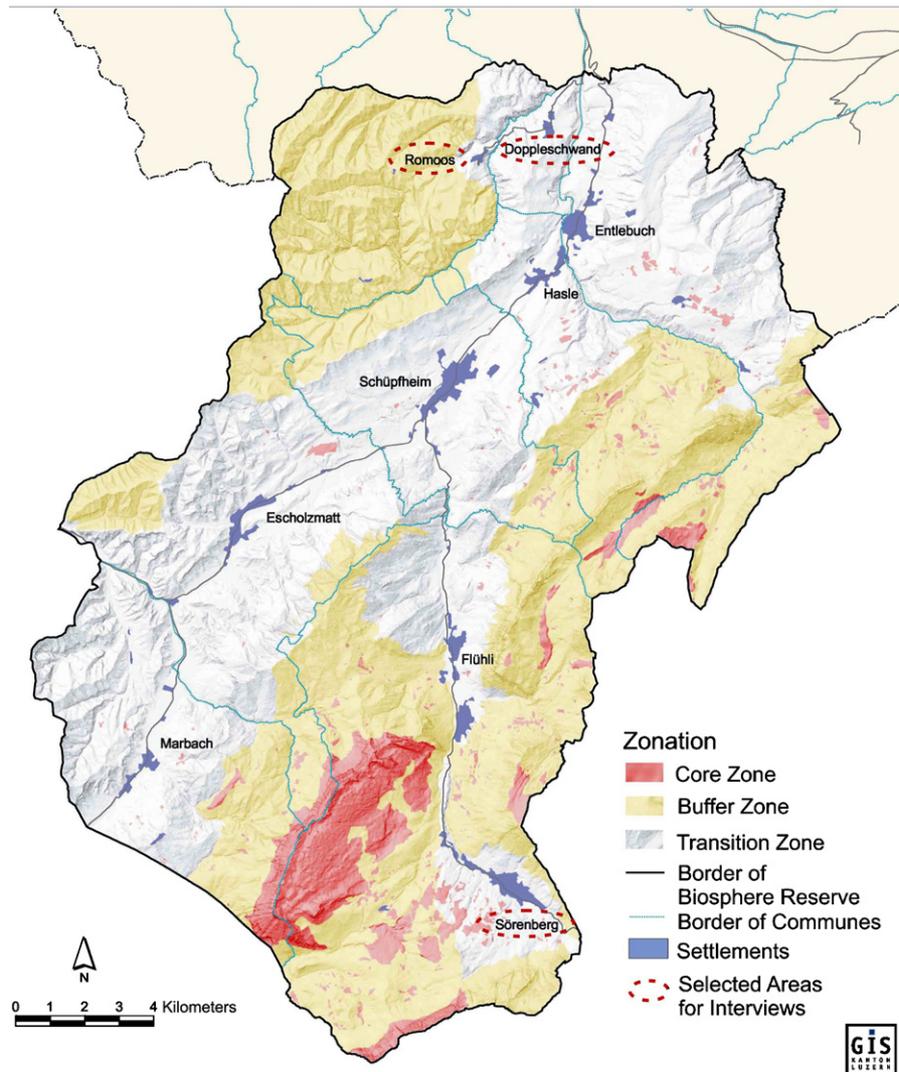


Fig. 2. Communes and villages of the UNESCO Biosphere Entlebuch, Switzerland and its zonation.

in the Carpathian mountains. In 1993, according to a Decree of the President of Ukraine, the Carpathian Biosphere Reserve (CBR) was created on the base of this state reserve (passive participation, type 1). The area of the CBR has been enlarged several times and currently totals 53,600 ha. During the enlargement process, participation in information giving (type 2) and recently participation by consultation (type 3) has taken place.

The administration of CBR is under the Ministry of Environment and Nuclear Security. CBR is a clustered biosphere reserve and consists of eight detached massifs (Fig. 3). The main purposes of the biosphere reserve include the management of problematic nature conservation issues, such as renewal of disturbed ecosystems to their natural state, regulation of cattle grazing with the aim of biocoenoses conservation of mountain meadows, illegal cuttings, and poaching. The two latter problems are direct results of the disastrous economic situation of the area. Tourism used to be an important sector of economy in Transcarpathia during Soviet time, but this – as well as other economic activities – collapsed after the country became inde-

pendent in 1991. Today the unemployment rate is high and private subsidiary agricultural production has become extremely relevant for local people's survival. Other tasks of the biosphere reserve are the preservation of cultural heritage and the promotion of sustainable development in the region (Carpathian Biosphere Reserve, 2002).

2.2. Research methods

Research was conducted in three villages each in the UNESCO Biosphere Entlebuch and in the Carpathian Biosphere Reserve (see Figs. 2 and 3). In UBE we chose the villages Soerenberg, an important tourist resort in the area and situated in the commune with the most proportion of its territory in the core zone, as well as Romoos and Doppleschwand, located in communes with most of their territory in the buffer or in the transition zone. In the CBR we chose Velika Uholka, at the border of the Uholsko-Shyrokoluzhanskiy massif, where the largest tracts of virgin beech forests in Europe are protected (tourist attrac-

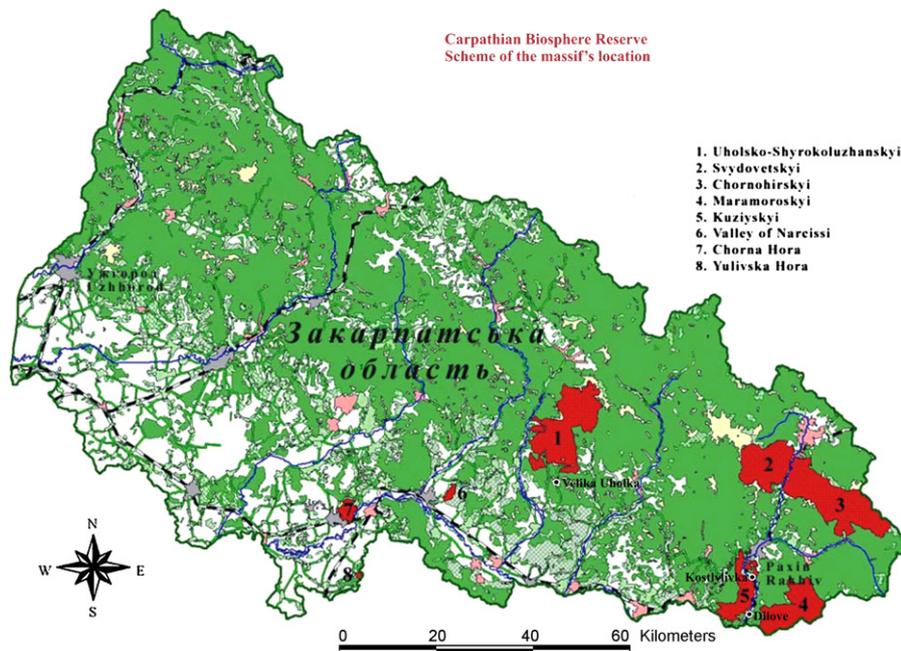


Fig. 3. The massifs of the Carpathian Biosphere Reserve, Ukraine.

tion), as well as Dilove and Kostylyvka, bordering the Kuziyskyi massif. In this area the biosphere reserve was extended in 2000 and protest against the enlargement of the reserve arose in the local communities.

The technique of qualitative open interviews responded best with our research interest, which was oriented to gain a deeper understanding and not to measure general occurrences of certain phenomena. This approach permitted the informants to structure and to define their own responses. This was essential for allowing the structure of people's mental models to emerge and for identifying possible misconceptions (Morgan et al., 1992). The use of qualitative research methods permits a maximum gain of new insights to a problem. However, as 'grounded' hypotheses they are of preliminary character and should be tested with the use of quantitative methods (Hunziker, 1995).

Altogether 38 qualitative interviews were conducted (14 in UBE and 24 in CBR; Table 3). The informants were selected according to the 'theoretical sampling strategy' (Glaser and Strauss, 1967) and the final strategic sample consisted of people with widely differing opinions representing the 'margin of the sampling universe' (Hunziker, 1995). The principle of this strategy is one of maximum variety, and not statistical representativeness (Patton, 1990; Morse, 1994). This was reached by defining a strategic sample based on expert interviews and theoretical thoughts and then expanding the sample based on the information gained during the interviews. This means that a first interview was conducted with a person who was assumed to represent one of the typical positions. After analysing this interview, a next informant, contrasting the first one as much as possible regarding study-relevant criteria was chosen. This sampling procedure repeated until no new positions emerged, all assumed positions were covered by at least one interview, and no more new information could be gained from the interviews.

Selection of interview partners in the Entlebuch was facilitated by the still ongoing participatory process during the phase of the interviews (summer, 2000). We could select interview partners directly at public information meetings in the area where people with differing opinions were present. The selection of interview partners was different in the case of CBR. No public information meetings regarding the biosphere reserve were held at the time of interviews (summer 2001). Therefore, we had to conduct more interviews in order to find the different positions held by local residents.

The interviews were either audio taped and transcribed or, in those cases where audio-taping was not possible, extensive protocols were written. The contents of the interviews were investigated according to a method based on Glaser and Strauss' (1967) 'Grounded Theory' (Strauss and Corbin, 1990). In a first step (open coding), we screened the full text section by section in order to identify noticeable statements regarding the perception of biosphere reserves. Similar statements were assigned to categories, which were defined primarily according to the empirical data as well as due to the research questions. In a second step (axial coding), categories that showed to be dominant – so called key-categories – were crosschecked with the aid of the remaining categories in order to detect the interrelationships between them. In a final step (selective coding), we screened the interviews again for finding contributions that further differentiated the key-categories and their interrelationships.

For the analysis we use the special software QSR Nvivo, which provides an extremely versatile vehicle for managing and analysing data (Richards, 1999).

3. Results

Statements regarding protected areas are often phrased as saying protected areas are good or are bad. Indeed, statements

Table 3
Characterization of the interview partners

Place	Interviewed people	Total interviews
UBE communes with most of their territories in the buffer or transition zone	2 Farmers 1 Shopkeeper 1 Waitress 1 Teacher 1 Employee at sawmill	6
UBE commune with most proportion of its territory in the core zone	4 Farmers 2 Housewives 1 Tourism employee 1 Shopkeeper	8
CBR Dilove, bordering an area extend to the CBR in 2000	3 Retirees 1 Teacher 2 Housewives 1 Accountant 1 Industrial employee	8
CBR Kostylyvka, bordering an area extend to the CBR in 2000	1 Forest employee 2 Shopkeepers 1 Sawmill employee 2 Retirees 1 Municipal employee 1 Housewife 1 Farmer	9
CBR Velika Uholka, bordering an important tourist attraction (largest tract of virgin beech forest)	1 Teacher, retired 1 Unemployed person 3 Farmers 1 Housewife 1 Forester, retired	7

by local residents regarding protected areas are linked to perceptions, ways of thinking and actions (Hofinger, 2001). Therefore, phrases such as ‘the biosphere reserve is good/bad’ are strong generalizations. We also found such general statements in our interviews:

Entlebuch: ‘I am proud to be a resident of the first biosphere reserve in Switzerland. This is a big chance for the region as a whole.’

Transcarpathia: ‘The biosphere reserve does us no good at all. We gain as much from it, as we get milk from a billy-goat!’

For the distant observer, it may seem obvious that people in the Entlebuch are in favour of the biosphere reserve due to the ‘bottom-up’ planning approach and people in Transcarpathia are against the biosphere reserve due to the missing participation in the ‘top-down’ approach. But a closer look at people’s arguments it becomes clear that the planning approach alone is not responsible for people’s perceptions of biosphere reserves.

3.1. *Effects due to the biosphere reserve*

Interview partners in the UNESCO Biosphere Entlebuch mentioned two main effects as a result of the biosphere reserve: (1) possibilities for regional economic development, and (2) restrictions in land-use.

- (1) Most of the interviewed people stated that by promoting the area as a biosphere reserve, tourism could be enlivened. So far only one out of the eight communes in the Entlebuch is known as a destination for winter sports and summer tourism has been very low. The possibility of promoting the whole area as an all season tourist destination if it were a biosphere reserve was mentioned regularly in the interviews. By establishing a biosphere reserve, locally produced products could be promoted with the label ‘biosphere reserve’. Containing the landscape of the Entlebuch as an economic area has been proclaimed by the regional management board as one of the initiated purposes of creating a biosphere reserve in the Entlebuch. These statements reflect, the local residents have taken up this information very well.
- (2) Even though the information given by the regional management board stated clearly that no new protected zones would have to be designated, many people still feared that more restrictions regarding land-use would ultimately apply in the region. In their statements they referred to the protection of mires and mire landscapes of national importance. This was the result of a nation wide referendum on which the majority of the Swiss population voted yes. Most people, however, were not aware of the consequences of this referendum for themselves in their own region, as was the case in the Entlebuch. After the implementation of the new law the people of the Entlebuch were faced with protection of a large amount of their territory and thereby by new restrictions regarding

land-use. With this experience in mind, people in the Entlebuch looked carefully at the package ‘biosphere reserve’, even though the economic prospects were tempting.

In contrast to the rather common statements in the case of the UBE, interview partners in the Carpathian Biosphere Reserve mentioned very specific issues as effects due to the biosphere reserve: (1) restrictions in the use of forests, (2) loss of agricultural and pasture land, (3) increase in wild animals, and (4) protection from floods.

- (1) Most of the interviewed people held the view that since the biosphere reserve had been established it had become more difficult for them to have access to wood, one of the most important resources for construction and heating. People complained that they have to get permission from the administration department of the biosphere reserve in order to get a certain amount of wood per year and that the price for a load of wood had risen enormously in the last years. However, even before the existence of the biosphere reserve, people could not just go into the forests, which were owned by the state, in order to cut the wood for their own needs. They also had to get permission from the forest department. But at that time, the price for wood was lower and the economic situation in the country different. CBR was established shortly after Ukraine had become independent. People had hoped for a fast transformation to free market economy. But instead of an economic boom, the national economy collapsed, closing down factories, leaving people unemployed and depending on private subsidiary agriculture. Due to the inflation, which followed the collapse of industries, the price for wood as well as other goods increased severely. At about the same time, the establishment of the CBR led to new regulations regarding the access to wood, with the administrative department of the biosphere reserve being in charge of giving out permissions to collect wood. People assumed that the change in regulation regarding access to wood, which was due to establishing the biosphere reserve, was generating higher wood prices, whereas in fact, these were two separate developments.
- (2) Most interview partners stated that they had lost land due to the biosphere reserve and indicated that the loss of agricultural and pasture land could be compared with the situation to the circumstances during Soviet time. Land first has been taken by the collective farms and now land has been taken by the biosphere reserve administration. However, due to the zonation of the biosphere reserve most of the high valley pastures became part of the core zone, where all economic activities are forbidden. This rezoning took place because CBR declared biodiversity protection and therefore restoration of species diversity on the upland valleys as one of their main purposes. But with the augmented relevance of private subsidiary agriculture after independence, the importance of access to pastures and meadows increased at the same time as the rezoning took place. Local people commented that they had not been compensated for the

loss of land. The biosphere reserve administration stated that a national law regarding financial compensation for land exists, but due to the difficult financial situation of the state, there is no money left for actually paying compensations. The discussion on the topic of loss of land is further complicated by the fact that the land reform in Ukraine has not been finalised yet. Furthermore, various ambiguities regarding the possession of land exist (Lerman et al., 1995).

- (3) All local people interviewed in the area of CBR mentioned the increase of wild animals as another negative effect of the biosphere reserve. They commented on sightings of wolves. According to the biosphere reserve administration there is a rather small wolf pack in the area. But since there are hardly any roe deer left due to poaching, it is possible that the remaining wolves attack sheep and cattle more often. The increase in attack of domestic animals by wild animals can lead to the perception of more wild animals in the area. Interesting were the comments on the existence of poisonous snakes and exotic birds. Local people believe that these animals are deliberately brought into the area by scientists in order to carry out scientific experiments with exotic species. The relevance of nature protection and its history has to be taken into account in order to understand this reasoning. Experiments with exotic species have been carried out in the 1930s and 1940s under Stalin, who declared protected areas as centres for the introduction of exotic animals (Weiner, 1988). Nowadays, people see scientists going into the forests carrying various tools for scientific experiments with them. People try to make sense out of what they see and therefore relate back to former experiences which form their mental models (Morgan et al., 1992). If those experiences are the ones gathered in the time when protected areas actually were used as laboratories for the introduction of exotic animals, it is indeed possible, that people regard the biosphere reserve as being responsible for the introduction of exotic animals today. It is then not necessary, that anybody has actually seen a poisonous snake or an exotic bird. The only thing necessary is misinterpreting the information ‘scientists conduct experiments in the forest’ as ‘wild animals are exposed’ and from there rumours spread quickly.
- (4) Local people mentioned the protection from floods as a positive effect due to the biosphere reserve. Massive floods occurred in Transcarpathia in 1998 and 2001. Most people see the reason for these floods in the extensive logging of the forests. Some of the interviewed people stated that the existence of the biosphere reserve helps to protect the forests from extensive logging and therefore contributes to the protections from floods.

3.2. Perception and evaluation of biosphere reserves

Based on the statements given in the interviews we could distinguish the following perceptions of biosphere reserves and link positive or negative evaluations to them:

3.2.1. *The perception of biosphere reserves as a governmental agency defining the rules regarding the use of natural resources*

People perceiving the biosphere reserve in this sense personalise the biosphere reserve as an authority. Thereby, people pinpoint the biosphere reserve exactly by referring to the building of the administration office and not to the area encompassed by the borders of the biosphere reserve area. Local people in the area of CBE stated: ‘The biosphere reserve in Rachiv does not forbid us to mow, but the regulations became severer under the reserve.’ In UBE local people personalised the biosphere reserve in the sense that the regional management board was equated with the biosphere reserve and thereby taking over too much control of the situation. People holding the perception of the biosphere reserve as a governmental agency see limitations in resource use as a direct effect of the biosphere reserve. The biosphere reserve is generally evaluated as negatively intervening with one’s own interests.

3.2.2. *The biosphere reserve as an instrument of nature protection policy*

In the case of UBE local people stated clearly that the biosphere reserve is perceived as an instrument of nature protection. Thereby, positive as well as negative evaluations were found in the interviews. Most of the interviewed persons stated, that the natural beauty of the Entlebuch should be protected, and therefore evaluated the biosphere reserve in a positive way as an instrument of nature protection. But some people also mentioned that too many protection measures could be set in place. This relates to the previously mentioned fear that restrictions in land-use would occur by establishing the biosphere reserve. In this regard the biosphere reserve was evaluated negatively as an instrument of nature protection. In the area of CBE the biosphere reserve is evaluated positively as an instrument of nature protection if it is seen as helping to protect the forests and thereby protecting the villages from floods. These findings indicate that the perception of the biosphere reserve as an instrument of nature protection can lead to a negative or positive evaluation depending on one’s own interests.

3.2.3. *The biosphere reserve as an instrument of regional economic development*

In UBE many local people regarded establishing a biosphere reserve as a possibility to advertise the region as a tourist attraction, and thereby they expect more income possibilities in the region. In this sense they evaluated the biosphere reserves positively. In contrast, only few people in the area of CBE mentioned the biosphere reserve in connection with regional economic development. Some people stated that the biosphere reserve generates job opportunities in the region, but no one mentioned the fact, that the biosphere reserve could be a tourist attraction and thereby jobs and income possibilities could be generated in the region. Local people in the area of CBE do not see the few initiatives that exist regarding the development of tourism in the area as standing in connection with the biosphere reserve. This can be explained by the fact that tourism used to be a flourishing economic sector during Soviet time, and at that time tourism stood

in no connection with protected areas at all. People therefore regard the new initiatives as a reconstruction of a once booming sector of economy and do not relate this development to the existence of the biosphere reserve.

3.3. *Key categories regarding perceptions and evaluations of biosphere reserves*

In both case studies we identified three key-categories influencing local residents’ perceptions and evaluations of the biosphere reserves.

3.3.1. *Key-category ‘economic situation’*

The economic situation in the Entlebuch is dominated by the fact that people working in the agricultural sector are faced with changes in land-use due to the protection of mire landscapes. Furthermore, the farmers are faced with changes in agriculture policy. Most farmers depend on a second income generated outside of the agricultural sector. Without big industries in the region, they either have to commute to economic centres outside of the Entlebuch, or they try to find a job in the tourism sector. As mentioned before, local people in the UBE assume that the biosphere reserve will lead to more tourism in the area and thereby generate more income possibilities for the local residents. Not only the farmers, but also people working in local industries such as tourism, forest industries, and services would profit from such a development. People who want to make their living in the area take the pros and cons a biosphere reserve could have on their own economic situation into consideration.

In Transcarpathia the present economic situation is severe so that most people heavily depend on subsidiary agricultural production. But for this they need land and access to resources. At the same time the administration of the biosphere reserve calls for biodiversity protection as their main purpose of the biosphere reserve, a contradiction to local people’s need for the use of natural resources. Local people value this as a disadvantage of the biosphere reserve. Another relevant point adds to the negative evaluation of the biosphere reserve: If the administration of the biosphere reserve allows the use of natural resources by local residents, this is often in combination with the requirement of obtaining permission. Due to the economic disaster after independency, inflation is high and prices have risen. It is easier to blame the biosphere reserve for higher prices and more regulations, than to admit, that the longed for independency lead to a worse economic situation.

In both case studies the economic situation is influencing local people’s perceptions and evaluations of the biosphere reserves.

3.3.2. *Key-category ‘history of nature protection’*

In the Entlebuch the history of nature protection with the effects the protection of mire landscapes had for the region is still very present. After having voted yes for something they were convinced of as being good and now being faced with restrictions in land-use, people are much more sensitive to the question of possible negative impacts a biosphere reserve could have on their region and on their lives. By trying to evaluate

the pros and cons of a biosphere reserve in the Entlebuch, the local residents take earlier experiences with nature protection into account.

In the history of nature protection in Transcarpathia, protected areas used to be research laboratories and local residents had no access at all. Today, local residents are allowed to enter the biosphere reserve, and some economic activities, such as mushroom picking, are allowed in the transition and buffer zones. Access to the core zone, however, is generally prohibited. But they see scientists of the CBR going into the core zone, and even though the administration of CBR claims to regularly publish articles on their work in local newspaper, and they even have their own journal with popularized scientific articles, local people do not know what kind work scientists do in the biosphere reserve. When trying to make sense out of what they see, local people relate back to former experiences, which are the ones of protected areas being scientific laboratories. The history of nature protection therefore plays an important role in how people interpret new information in their already existing mental models.

3.3.3. Key-category 'power balance of the involved stakeholders'

In the Entlebuch a discussion arose regarding the power balance between the involved stakeholders. Although the members of the management board all are locals, some people fear that the management board marks a new level of administration. At the same time, some of the interviewed people mentioned their fear of the management board not being able to stand against further protection measures promoted by nature protection organisations or by administrative agencies of the canton or the state, or even by UNESCO. People argued, that today too many administration levels rule over the Entlebuch, such as the regional government, the cantonal government and the national government. Creating a new administration level such as the management board of the biosphere reserve is seen by some as another means for a few to rule in the area.

In Transcarpathia, the augmented relevance of private subsidiary agriculture led to an increased importance of access to pastures and meadows. CBR declared biodiversity protection and therefore restoration of species diversity on the upland valleys as one of its main purposes. A rezoning of pastures and meadows to the core area of the biosphere reserve took place. And with the state not being able to compensate the involved people with money or with other land, people regarded the biosphere reserve as a governmental agency defining the rules without consulting the people. The people therefore consider the power balance between themselves and the biosphere reserve as being of a vertical order from the national level in the form of the biosphere reserve as a state authority affecting the people on the regional level.

3.4. Comparison

As stated in the introduction it is our objective to reveal if factors exist which are influencing people's perceptions of biosphere reserves but which are independent of the cultural

context. By comparing the two case studies in this sense we can state the following:

The main similarity of the two case studies lies in the strong influence of the history of nature protection on the perception of biosphere reserve. But in the case of UBE these negative perceptions could be overcome by positive prospects regarding economic advantages. Another similarity is the important role of the economic situation in forming local people's perception of the biosphere reserve. But here lies an important difference: Whereas in the case of UBE the biosphere reserve local people try to find a way how they themselves can profit economically from the biosphere reserve, local people in the case of CBR see hardly any economic development possibilities for themselves due to the biosphere reserve. The strong perception of the biosphere reserve as a governmental agency in CBR enhances negative perceptions.

A main difference in the two case studies lies in the balance of power between the involved stakeholders. In the CBR the balance of power exists in a vertical structure. It was the national government deciding on the creation and on the enlargement of the biosphere reserve. Local people are not represented on the management board. In the case of UBE, the structure of power is in a horizontal structure. Discussions on the possibility of a biosphere reserve started on the local level. However, with the creation of the regional management board a new administration level arose which is seen by some people as a shift in the balance of power.

4. Discussion and conclusion

Our results showed that there are many facets behind general statements regarding protected areas. The economic situation, the history of nature protection and the power balance are important factors influencing local people's perceptions and evaluations of biosphere reserves. With only general statements regarding protected areas on hand, it would be easy to conclude, that the participatory 'bottom-up' approach used in the UBE led to a higher acceptance of the biosphere reserve than the 'top-down' approach in CBR. But our results show that the same approach can be perceived very differently and there is always a shift in the power relations. Even a 'bottom-up' approach can be perceived as being 'top-down' by some people. Often those are the one's who would not participate in public discussions or volunteer in a working group. They feel left out of the process, because they had no direct say—but actually, they were not looking for active participation. Therefore, they evaluate the whole process as negative. However, the argument can be put the other way around: Someone has to take final decisions and this is a way of 'top-down' in a 'bottom-up' process. Schnorr (2002) came upon the following statement in UBE regarding this aspect: The participatory 'bottom-up' approach can be regarded as a positively assessed 'top-down' approach: 'Thanks to the regional management board, who acted very strategically, it was possible to establish the biosphere reserve. If this had been done in a 'bottom-up' approach, it would not have worked' (interview passage in Schnorr, 2002). Based on the chosen methodology, we cannot make any statements on the percentage of people

holding this perception. But as ‘grounded hypotheses’ our findings refer to what Brechin and West (1990) claimed as linking ‘top-down’ with ‘bottom-up’. According to them, ‘top-down’ does not work in itself, but ‘bottom-up’ on the other hand also needs some structuring in order to get the necessary financial support, to develop a strategy, and to get into contact with the involved stakeholders. By linking the two approaches, Brechin and West argue it is possible to create sustainable conservation.

Linking the two approaches is one aspect, which should be paid attention to in the establishment of protected area. But there is more to look at. McNeely (1995) formulated 10 principles for a successful partnership with local communities in conservation projects. As the most basic principles to follow, he named the need to provide benefits to local people and to meet local needs. Most interestingly, Mc Neely does not give any indication about the degree of participation that is required in order to gain support for protected areas by the local population. As mentioned above, Pimbert and Pretty (1997) stated that nothing less than functional participation (type 5, Table 1) will suffice to achieve sustainable conservation with long-term economic and environmental success. We commented that in UBE participation as interactive participation (type 6) or even as self-mobilisation (type 7) could be found, whereas in CBR participation appeared as information-giving (type 2) and consultation (type 3) at the most. If we assume that participation is a precondition for local people’s acceptance of protected areas, it could be concluded that the more participative approach coming from the ‘bottom’ leads to a better and more positive perception and evaluation of the biosphere reserve than the ‘top-down’ approach with nearly no participation. The findings of several studies such as Fraga (2006), Rao et al. (2000, 2003), Trakolis (2001), as well as Fiallo and Jacobson (1995) support this conclusion by stating that the acceptance of protected areas was very low due to the fact that participation existed in the form of consultation (type 3) at the most.

But before drawing this conclusion we should look at the study of Kaus (1993) who demonstrates that acceptance can also be achieved in the case of participation by consultation if the needs and interests of the local people are met by the goals of the protected area. The management of the Mapimí Biosphere Reserve in Mexico started their project by not defining the protection of the whole area as their main purpose. The researchers put the protection of several colonies of the endangered Bolsón tortoise in the centre of their discussions with local residents regarding the possibility of setting up a protected area. The protection of the tortoises did not interfere with cattle ranching, the predominant form of production in this area, and therefore, local people could accept this kind of protection. But they would not respect restrictions on shooting livestock predators. Since they threaten the local rangers’ livelihood, the protection of these animals is contradictory to the rangers’ interest in making a living in the area. The results of Kaus’ study do not contradict the argument of Pimbert and Pretty (1997) but her findings as well as ours show that local residents perceive and evaluate the biosphere reserve in relation to their own interests and needs. We do not dispute that participation is an important condition in generating acceptance of protected areas. But we stress

the fact and thereby support the recommendations by McNeely (1995)—that the needs and interests of local people have to be taken into account when defining the goals of the protected area. Thereby, the key-category ‘economic situation’ is dominant. If local people see the possibility of gaining an economic benefit from the protected area, their evaluation of the protected area will be more positive. This is supported by the findings of, e.g. Fraga (2006), Ormsby and Kaplin (2005) and Lü et al. (2003) as well as Wiesmann et al. (2005) who stated in their case study that negotiations of conservation issues should be linked to issues of development. We therefore conclude that in order to minimise conflicts between the management of protected areas and local residents, it is essential to integrate planned protection measures with regional land-use practices and regional economic development issues, even if this means that not all the anticipated protection measures can be set in force at the same time. An example that this can work is given by Kaus (1993).

In order to assist negotiations over disputed issues regarding protected areas, it is essential to understand local residents’ perceptions and their reasoning, why they assume certain effects as directly being linked to the existence of the biosphere reserve. Here we argue that the history of nature protection is crucial in detecting misunderstandings and in order to understand local people’s reasoning concerning protected areas. This goes into the direction of Ormsby and Kaplin (2005), Fraga (2006) and Xu et al. (2006) who have shown that knowledge about a protected area is essential for building up acceptance. But we also go further by concluding that not only the local population has to learn more about protected areas and what they stand for, also the managers of protected areas have to know more about the background of local people’s arguments.

A point we have not touched upon yet is the inhomogeneity of local populations. Xu et al. (2006) as well as Pavlikakis and Tsihrintzis (2006) state that factors such as age, gender, socio-economic status, knowledge, and education affect local people’s perceptions of protected areas. Since we did not conduct a survey in our study we cannot comment with our findings on these statements. But we think that it is important to take these factors into account, especially when trying to integrate local people into the discussion on protected areas. Furthermore, there are various stakeholders present in the local population such as farmers, nature protection organizations, tourism industry and others. Raiffa (1982) pointed out the importance of the heterogeneity of local communities as an aspect of conflict negotiations. He stated that with more than two parties involved in a conflict, coalitions can be formed between disputants and they may act in concert against other disputants. This way the power balance might change and stakeholder groups who have not been regarded as very powerful by the protected areas managers might become more powerful by forming coalitions. Therefore, regardless of stakeholders’ amount of power, resource managers should talk to all interested parties to take decisions regarding the use of land.

It must be kept in mind, that implications on the local residents cannot be completely avoided when establishing protected areas. However, it is important to address possible conflicts at the very beginning of the planning of protected areas and con-

tinue to uncover potential new conflicts, which could arise in the process of planning and managing protected areas. This is essential if economically and socially sustainable biodiversity protection shall be attained.

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References

- Balmford, A., Bruner, A., Cooper, P., Constanza, R., Farber, S., Green, R.E., Jenkins, M., Jefferiss, P., Jessamy, V., Madden, J., Munro, K., Myers, N., Naeem, S., Paavola, J., Rayment, M., Rosendo, S., Roughgarden, J., Trumper, K., Turner, R.K., 2002. Economic reasons for conserving wild nature. *Science* 297, 950–953.
- Brechin, S.R., West, P.C., 1990. Protected areas, resident peoples, and sustainable conservation: the need to link top-down with bottom-up. *Soc. Natural Resources* 3 (1), 77–79.
- Carpathian Biosphere Reserve, Dec. 17, 2002. Carpathian Biosphere Reserve. http://cbr.nature.org.ua/new_e.htm.
- Dixon, J.A., Sherman, P.B., 1990. Economics of Protected Areas: A New Look at Benefits and Costs. Earthscan Publications Ltd., London.
- Elsasser, H., Seiler, C., Scheurer, T., 1995. The regional economic impacts of the Swiss National Park. *Mountain Res. Dev.* 15 (1), 77–80.
- Fiallo, E.A., Jacobson, S.K., 1995. Local communities and protected areas: attitudes of rural residents towards conservation and Machalilla National Park Ecuador. *Environ. Conserv.* 22 (3), 241–249.
- Fraga, J., 2006. Local perspectives in conservation politics: the case of the Ria Lagartos Biosphere Reserve, Yucatan Mexico. *Landsc. Urban Plan.* 74, 285–295.
- Glaser, B.G., Strauss, A.L., 1967. *The Discovery of Grounded Theory—Strategies for Qualitative Research*. Aldine de Gruyter, New York.
- Hofinger, G., 2001. *Denken über Umwelt und Natur*. Beltz, Weinheim.
- Hunziker, M., 1995. The spontaneous reforestation in abandoned agricultural lands: perception and aesthetic assessment by locals and tourists. *Landsc. Urban Plan.* 31, 399–410.
- IUCN, 1993. *Parks for Life: Report of the IVth World Congress on National Parks and Protected Areas*. IUCN, Gland, Switzerland.
- Kaltenborn, B.P., Riese, H., Hundeide, M., 1999. National Park planning and local participation: some reflections from a mountain region in southern Norway. *Mountain Res. Dev.* 19 (1), 51–61.
- Kaus, A., 1993. Environmental perceptions and social relations in the Mapimi Biosphere Reserve. *Conserv. Biol.* 7 (2), 398–406.
- Lerman, Z., Books, K., Csaki, C., 1995. Restructuring of traditional farms and new land relations in Ukraine. *Agricult. Econ.* 13, 27–37.
- Lü, Y., Chen, L., Fu, B., Liu, S., 2003. A framework for evaluating the effectiveness of protected areas: the case of Wolong Biosphere Reserve. *Landsc. Urban Plan.* 63, 213–223.
- Lucas, P.H.C., 1992. *Protected Landscapes—A Guide for Policy-Makers and Planners*. IUCN—The World Conservation Union. Gland, Switzerland.
- McNeely, J.A., 1995. Partnerships for conservation: an introduction. In: McNeely, J.A. (Ed.), *Expanding Partnerships in Conservation*. Island Press, Washington, D.C., pp. 1–10.
- McNeely, J.A., Pitt, D. (Eds.), 1985. *Culture and Conservation: The Human Dimension in Environmental Planning*. Croom Helm, London.
- Morgan, G., Fischhoff, B., Bostrom, A., Lave, L., Atman, C., 1992. Communicating risk to the public. *Environ. Sci. Technol.* 26 (11), 2048–2056.
- Morse, J.M., 1994. Designing funded qualitative research. In: Denzin, N.K., Lincoln, Y.S. (Eds.), *Handbook of Qualitative Research*. Sage, Thousand Oaks, pp. 220–235.
- Müller-Böker, U., Kollmair, M., 2000. Livelihood strategies and local perceptions of a new nature conservation project in Nepal. *Mountain Res. Dev.* 20 (4), 324–331.
- Ormsby, A., Kaplin, B.A., 2005. A framework for understanding community resident perceptions of Masoala National Park, Madagascar. *Environ. Conserv.* 32 (2), 156–164.
- Patton, M.Q., 1990. *Qualitative Evaluation and Research Methods*. Sage, Newbury Park, CA.
- Pavlikakis, G.E., Tsihrintzis, V.A., 2006. Perceptions and preferences of the local population in Eastern Macedonia and Thrace National Park in Greece. *Landsc. Urban Plan.* 77, 1–16.
- Pimbert, M.L., Pretty, J.N., 1997. Parks people and professionals: putting “participation” into protected-area management. In: Ghimire, K.B., Pimbert, M.P. (Eds.), *Social Change and Conservation. Environmental Politics and Impacts of National Parks and Protected Areas*. Earthscan, London, pp. 297–330.
- Raiffa, H., 1982. *The Art and Science of Negotiation*. Harvard University Press, Cambridge.
- Rao, K.S., Nautiyal, S., Maikhuri, R.K., Saxena, K.G., 2000. Management conflicts in the Nanda Devi Biosphere Reserve India. *Mountain Res. Dev.* 20 (4), 320–323.
- Rao, K.S., Nautiyal, S., Maikhuri, R.K., Saxena, K.G., 2003. Local people’s knowledge, aptitude and perceptions of planning and management issues in Nanda Devi Biosphere Reserve India. *Environ. Manage.* 31 (2), 168–181.
- Richards, L., 1999. *Using NVivo in Qualitative Research. Qualitative Solutions and Research*. Victoria.
- Schnorr, K., 2002. *Partizipation im Projekt Biosphärenreservat Entlebuch Diplomarbeit*. Geographisches Institut, Universität Zürich.
- Strauss, A., Corbin, J., 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage, Newbury Park.
- Swiss Agency for the Environments Forests and Landscape (SAEFL), March 5, 2004. *Mire and Mire Landscapes*. http://www.umwelt-schweiz.ch/buwal/eng/fachgebiete/fg_lrparks/moore/index.html.
- Trakolis, D., 2001. Local people’s perceptions of planning and management issues in Prespes Lakes National Park, Greece. *J. Environ. Manage.* 61, 227–241.
- UNESCO, 2002. *Biosphere Reserves: Special Places for People and Nature*. UNESCO, Paris.
- Weiner, D., 1988. The changing face of Soviet Conservation. In: Worster, D. (Ed.), *The Ends of the Earth: Perspectives on Modern Environmental History*. Cambridge University Press, Cambridge, pp. 252–273.
- Wiesmann, U., Liechti, K., Rist, S., 2005. Between conservation and development: concretizing the first World Natural Heritage Site in the Alps through participatory processes. *Mountain Res. Dev.* 25 (2), 128–138.
- Xu, J., Chen, L., Lu, Y., Fu, B., 2006. Local people’s perceptions as decision support for protected area management in Wolong Biosphere Reserve, China. *J. Environ. Manage.* 78, 362–372.
- Zube, E.H., Busch, M.L., 1990. Park–people relationships: an international review. *Landsc. Urban Plan.* 19, 117–131.