

Poised for engagement? Local communities and Măcin Mountains National Park, Romania

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SUMMARY

Beliefs and attitudes of local people toward protected areas are increasingly being considered in conservation planning. Although park-people studies abound, relatively little is known about these relationships in Central and Eastern Europe. Romania's protected area management system currently involves considering aspirations of local communities. A questionnaire administered to 374 households was the main tool for assessing knowledge about, and attitudes towards, Măcin Mountains National Park (MMNP). Only 20.1% of respondents had knowledge of MMNP activities, and 95.2% were unacquainted with the Consultative Council, which purportedly represents community interests in park affairs. A community attitude index (CAI) was constructed, aggregating responses to seven attitude-related questions. CAI values ranged from -7 to 7 with a mean of -0.50 . Attitudes were primarily influenced by education level and whether households had members who fish. Most attitudes were neutral, largely due to lack of interaction with MMNP. Positive attitudes were mostly related to the intrinsic value of nature and its services. Negative attitudes were chiefly determined by perceived fuelwood shortages and/or higher prices, or introductions of potentially dangerous animals. These results have particular implications for involving local communities in MMNP management, and may be relevant for similar protected areas in Romania and elsewhere.

INTRODUCTION

People and parks

Communities whose livelihoods involve local natural resource exploitation often come into conflict with protected areas (PAs), which are chiefly established and managed for nature preservation. Communities living in and around PAs often have

important and longstanding relationships with these areas that embrace *inter alia* cultural identity and subsistence practices essential to sustaining livelihoods, and frequently contribute to maintenance of biodiversity. Yet, these relationships between people and land have often been ignored

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by traditional top-down approaches to PA management that exclude local participation (Kiss 1990; Stevens 1997). However, PAs are increasingly being recognized as 'social spaces' (Ghimire and Pimbert 1997) and, as such, cannot be decoupled from their human context (Brechin *et al.* 2002). Reinforcing this shift, it is now widely postulated that PAs cannot coexist in the long term with communities that are hostile to them (West and Brechin 1991; McNeely 1993; Pimbert and Pretty 1997; Holmes 2003; Gadd 2005), although there are arguments that conservation can be imposed, and flourish, where the rural poor are weak and can be easily ignored (Brockington 2003).

Consequently, greater participatory planning, including PA outreach programmes, and/or sustainable use of certain PA resources, is now believed to not only contribute to rural development but also alleviate conflicts between local people and park authorities by improving conservation attitudes and altering behaviour (MacKinnon *et al.* 1986; Happold 1995; Studsrod and Wegge 1995; Heinen 1996; Hulme and Murphree 2001; Manfredo *et al.* 2004). Although the theoretical connection between beliefs and attitudes is well established, the subsequent link between attitudes and behaviour has not been well demonstrated (McKenzie-Mohr *et al.* 1995; Aipanjiguly and Jacobson 2002). However, some social psychologists (Fishbein 1967; Rokeach 1976) regard attitudes as good predictors of behaviour; therefore, positive attitudes are most likely to determine positive conservation behaviour.

Evaluative studies have shown that synergies between conservation and development objectives do not always occur; they are not a panacea, and must more fully incorporate local conditions and expectations in their design and implementation if they hope to succeed (Alpert 1996; Brandon *et al.* 1998; Hughes and Flintan 2001; Barrett *et al.* 2005; Wang *et al.* 2006). Thus, for PA managers, understanding local livelihoods can be as important as information about the biodiversity to be conserved (Wells *et al.* 1992; Veech 2003; Anthony 2007). The underlying assumptions of this approach, also being adopted by Măcin Mountains National Park in Romania, are that only if communities benefit from PAs and are knowledgeable and understand the importance of conservation will they change their behaviour to support conservation initiatives (McNeely 1989; Emerton 2001).

Biodiversity conservation in Romania

Romania is rich in biodiversity, and MESD (2007) estimates that natural and semi-natural ecosystems still account for 47% of the country's surface. Yet, Romania ranks highly within the European Union in terms of number of threatened species (Ioras 2003). The main threats to biodiversity are habitat fragmentation and natural resource over-exploitation, paralleled with rapid economic development (MESD 2007). The struggle to couple development and protect natural areas has, therefore, much relevance for Romania.

Approximately 78% of the area of Romanian PAs are state property, but important areas are privately owned (11%) or belong to local authorities (11%) (MESD 2007). The property regime is changing, especially due to forest retrocession which will pose increasing challenges to PA management. It has been estimated that around 50% of forest land will be restored to rightful owners, including local authorities, various churches and religious groups, the military and minority organisations (Ioras 2003).

Most large PAs with established administrations are managed by the National Forest Administration (NFA), Romsilva, whose management primarily focuses on timber production (Ioras 2003), creating inherent challenges in realising biodiversity conservation objectives. Such aspects have great potential to create conflicts between national parks' administrations and the NFA. A reform, aiming to increase the efficiency and effectiveness of PA management, will subordinate all administrations of PAs of national importance under one National Agency for Protected Areas and Biodiversity Conservation (MESD 2007) although, to date, this has not been realised.

Măcin Mountains National Park (MMNP)

MMNP is a relatively small PA situated in southeast Romania, covering an area of 11,149 ha (Figure 1). Annual average temperature ranges between 9 and 10.8°C, with a mean precipitation of 480 mm/year. MMNP is the only PA in Europe where ecosystems typical of the Pontic-Sarmatian steppe, submediterranean and Balkan forests can be found on Hercynian mountains, the oldest in Romania and some of the earliest in Europe (MMNP 2006). According to FRMI (1996), steppe ecosystems once

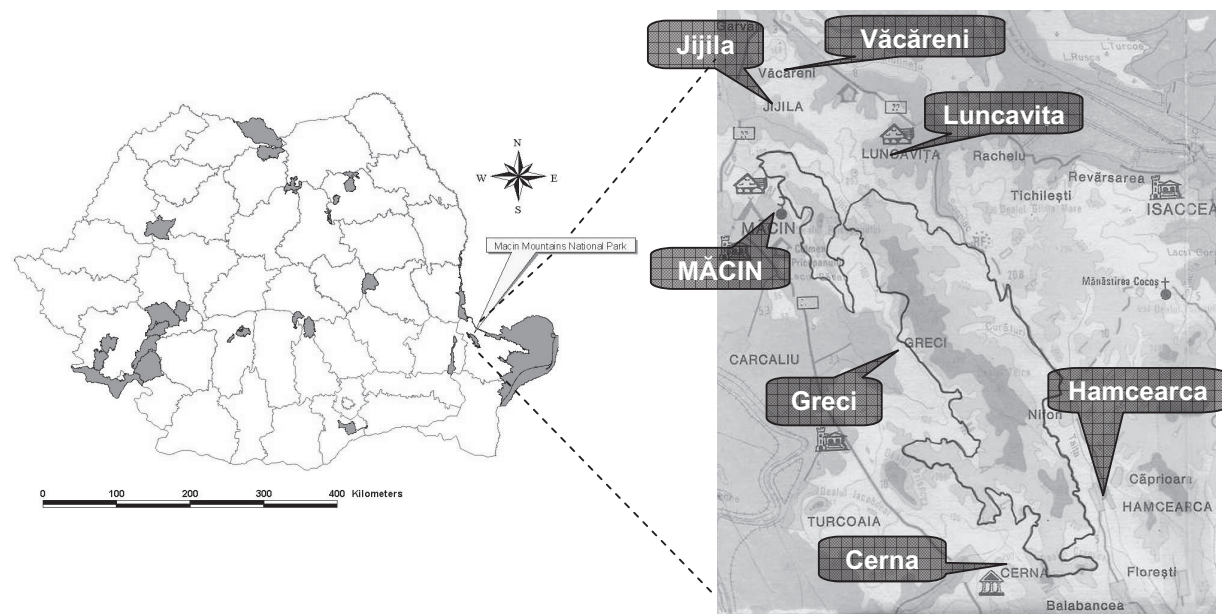


Figure 1 Location of MMNP in Romania, and local councils neighbouring MMNP

covered 16% of Romania's territory but, due to past anthropogenic activities, they are now restricted to the Măcin Mountains.

Designated in 2003, the MMNP is among the newest national parks in Romania. The park is administered by the MMNP Administration (MMNPA), within the NFA. The majority (99.6%) of MMNP is forest, along with smaller areas of pasture and arable land (MMNP 2006). Although comprehensive surveys regarding the biodiversity of Măcin Mountains do not exist, it is estimated that around 150 vertebrate and 72 plant species that fall under national or international protective regimes are present (UNDP 2005).

Consultative Council (CC)

The Consultative Council meets bi-annually and is the formal structure that represents stakeholders with the MMNPA. As the name suggests, the role of the committee is only consultative, i.e. it has the power to make recommendations, but final decisions are still taken by the MMNPA. All local communities are represented on the CC by their formally elected leaders (mayor or delegated person).

Justification for study

People-park studies are valuable for a number of reasons. First, they can disclose whether strong

attitudes exist towards conservation and/or a PA which, in some cases, may explain behaviour (Lepp and Holland 2006). Second, they can inform PA managers and policy makers about the factors that influence current attitudes, thereby assisting in improving outreach programmes and conflict resolution strategies. Finally, if conducted longitudinally, attitudinal studies can track progress in relationship building.

People-park studies are relatively new for Central and Eastern Europe. The objectives of this exploratory research were to assess perceptions and conservation attitudes of the people living adjacent to MMNP and to identify any underlying factors.

METHODS

Our study was conducted in communities adjacent to MMNP: 14 villages and one town, grouped in seven local councils (Figure 1). All local councils have land either within or adjacent to MMNP. According to local mayors and available Agricultural Registers, the total population of the study area is 39,218.

A mixed-method approach was used: unstructured interviews with park staff and local mayors, review of project documents/records, and a structured face-to-face questionnaire administered in July 2007 to a random selection of 374 households, forming a representative sample (c.i. = 95%; sample error = $\pm 5\%$). The questionnaire was constructed

using both closed and open-ended questions regarding different topical categories. It was first written in English, then translated into Romanian, and subsequently pre-tested. As a result, some modifications were made.

One adult (≥ 18 years old) was interviewed in each selected household; interviewers were instructed, when possible, to interview household heads. When no adult person was found, interviewers visited the selected household on another day, at a different hour. Interviewers were also instructed to avoid gatherings of people, whether neighbours or family members. To minimize research bias, the questionnaire was administered by 17 trained research assistants, primarily students from Babeş-Bolyai University in Cluj-Napoca. All quantitative data were analysed using the Statistical Package for Social Sciences (SPSS) software, Version 13.

RESULTS

Socio-economic and demographic profile

Of the respondents, 149 (42%) were male and 206 (58%) female. In 19 cases, gender was not recorded. Respondent ages ranged from 18 to 92 (mean = 53.3 ± 17.2). Most households (29.2%) had only two members, while a significant share (8.3%) was represented by persons who live alone. The mean household size was 3.45. We observed a dominance of small households (≤ 4 members), representing 74.5% of all households sampled. Moreover, most households with > 2 members had at least one other adult, suggesting a predominantly extended family type in the area (two+ generations sharing the same household). The mean family residence period in the villages was 46.0 years (SD = 26.8; $n = 368$).

Of the interviewees, 1.3% had not been enrolled in any form of education, 23% have some form of primary education, and 67.6% attended high school or equivalent (vocational or apprentice schools). Only 8% were enrolled in or had graduated from tertiary education. Education level was recoded into number of years spent in formal education. A significant inverse correlation between respondent age and level of education was found ($r = -0.550$, $p < 0.01$), indicating that younger people tend to be more educated. Those without any education were among either the youngest

(18–24) or the oldest (65+) respondents. This is coherent with the educational policy during the communist period in Romania (1944–1989) when a ten-year enrolment in an educational establishment was compulsory; therefore, illiteracy is largely a reflection of pre- or post-communist Romanian policies.

The mean monthly household income was 724.55 RON (1€ = 3.22 RON) (SD = 630.05; $n = 332$). The distribution of incomes manifests a significant positive skewness ($\gamma = 1.812$ SE = 0.131), i.e. most households (82.4%) had an income in the 0–1000 RON range. If we assume that all adults bring income to the household and divide the average monthly household income by mean number of adults per household (2.69), we obtain a value of 269.35 RON per adult. This is far below the national average of 1023 RON per person (RNIS 2007).

Livestock holdings

Data on household livestock holdings were recorded (Table 1). The most frequent (81.2%) type of livestock owned is poultry, followed by pigs (53.9%). An overwhelming number of respondents (86.1%) had at least one livestock type in their household. The livestock holding diversity ranged from zero to seven types, with most (30.7%) households owning two types.

Since the impact of livestock on natural resources depends mostly on size, the number of livestock per household was transformed into Livestock Size Units (LSU). One LSU is equivalent to a 400 kg steer (Raut 1997). For our study, the following LSU equivalents are considered: horse (1.0), cow (0.8), donkey (0.7), pig (0.4), sheep (0.3), goat (0.2) and poultry (0.05). LSU for the

Table 1 Livestock holdings of the sample households (N = 373)

Livestock type	% of households owning livestock type	Number of livestock		
		Min.	Max.	Mean
Poultry	81.2	0	150	21.29
Pigs	53.9	0	13	1.09
Horses	26.8	0	5	0.32
Cattle	10.7	0	21	0.20
Goats	9.7	0	400	1.85
Sheep	6.7	0	50	1.01
Donkeys	3.2	0	1	0.03

Table 2 Ranking of community needs scores

Rank	Community need	Weighted score
1	Health facilities	2.806
2	Employment	2.731
3	Drinking water facilities	2.563
4	Road improvement	1.641
5	Access to natural gas	1.220
6	School facilities	0.803
7	Expansion of agriculture (crops)	0.544
8	Protection of nature	0.487
9	Quarry development	0.336
10	Expansion of agriculture (livestock)	0.301
11	Forestry	0.274
12	Tourism development	0.223
13	Preserving traditional culture	0.056

sampled households ranged from 0 to 100.80 (mean = 2.67; SD = 5.89; n = 373). LSU had a significant positive correlation with household size ($r = 0.152$; $p < 0.01$; n = 372).

Community needs

In order to understand what communities consider important needs, respondents were asked to select and rank the five most important needs from a pre-defined list (Table 2). A weighted score was calculated for each need and used as an indicator of its importance. Communities consider health facilities to be most important, followed by employment and drinking water facilities (weighted score > 2). Infrastructure, namely road improvement and access to natural gas, falls in the second category (1–2). Of lower importance are eight other needs, including nature protection, tourism development and preservation of traditional culture.

Respondents were requested to state what they regard as the most important problem concerning natural resources or land use. A third (31%) believed there are no such problems or were unaware of them. Among those acknowledging problems, 38% stated water scarcity, linking it mostly to lack of irrigation facilities and poor climatic conditions, followed by lack of access to natural gas (6.1%). Financial constraints and lack of access to wood, coupled with high fuelwood prices, represent a concern for another 10% of households. Other worries are related to closing of quarries due to the designation of the park, lack of workforce

and state agricultural assistance; and two households experienced incidents with damage-causing animals (jackal).

Resource use

Most households (83.4%) used fuelwood for heating. Significantly smaller percentages of households used natural gas (11.8%) and central heating (4.3%), both of which are concentrated in the larger settlements of Măcin and Jijila. Most households that utilize wood as the primary fuel for heating declared that they purchase it (91.3%), while 5.8% resort to gathering, and 2.9% both purchase and collect wood. According to mayors and MMNP staff, most households purchase fuelwood directly from the NFA, which operates within and adjacent to MMNP. On average, a household in the vicinity of the MMNP that uses fuelwood spent 924.88 RON in 2006 for purchasing it (SD = 538.51, n = 299). If we compare this with the mean monthly household income, we estimate that the average household expended 10.6% of its annual income to pay for this resource.

Only eight households (2.1%) had members that hunt, while 9.1% had at least one member who fishes. Most respondents (51.6%) stated that fish products provided a significant amount of food for household consumption and gave fishing products a moderate to high importance.

Knowledge, beliefs and attitudes concerning MMNP

Interaction

More than half (52.5%) of our respondents indicated they had been inside MMNP. The majority (56.6%) of these declared they were hiking, 20.4% collected wild resources, 8.7% camped and 8.2% worked within the park. Twelve respondents chose other activities, two indicating that they had taken their animals inside the park to graze: an activity which is not permitted according to MMNP regulations.

Knowledge

Unexpectedly, only 20.1% of respondents stated that they had some knowledge about the park's activities. Interpersonal communication represented the

most important source of information regarding park activity ($n = 45$), followed by park staff ($n = 14$), and via the park newsletter ($n = 6$). Other sources of information are the media (radio), local mayor's office and forestry sector representatives. When asked what they considered to be the main purpose of MMNP establishment, a majority (58.3%) declared they 'Do not know'. Those that stated a park aim indicated nature protection (76.3%), followed by 'leisure and tourism' (12.2%) and to introduce/repopulate the area with vipers (6.4%).

As a proxy indicator of knowledge of MMNP, respondents were asked whether they knew where the park border was. Almost three-quarters (73.8%) indicated they do not know. Those claiming they knew the border were asked to give details on how they recognize/know it. Only one person gave a clear indication, stating that it is marked. All others made rough indications or stated that they 'just know about it'.

Attitudes

Seven questions were dedicated to identifying attitudes towards MMNP. Responses were recoded into three categories, each receiving a corresponding score (negative = -1; neutral = 0; positive = 1). Frequency, mean, standard deviation and total number of valid responses are given in Table 3. Each question was accompanied by an open-ended question giving respondents the opportunity to explain their choice. The largest proportion of

responses was neutral, primarily elicited from people who have neither interacted with park staff nor been inside the park. An important group is represented by the elderly, who argue their neutral position from the perspective of age: 'we are too old . . . I do not think we can benefit from the park . . . maybe the young people.'

Generally, positive responses are motivated by local pride (e.g. of living close to a beautiful location, occasionally the area receives media exposure), the probable future development of tourism, employment and intrinsic attributes including 'cleaner air' and 'beautiful landscapes'. Negative attitudes are mainly linked to the presumed introduction of vipers (*Vipera ammodytes*) and the consequent threat to local inhabitants. Other negative responses derived from the perceived increase in restrictions and associated fines related to wood collection and grazing. A particularly sensitive issue is the closing of adjacent quarries due to the designation of the park, an aspect that produces mixed feelings. Some stated that quarry closure has brought about decreased air and noise pollution, while others claim it has contributed to locally high unemployment.

A single community attitude index (CAI) was computed by aggregating all individual response scores (Anthony 2007). The reliability of the CAI was estimated using Cronbach's alpha (Cronbach 1951) and resulted in a score of 0.72. CAI scores ranged from -7 (least favourable) to 7 (most favourable), with a mean score of -0.50 ($SD = 2.203$, $n = 312$) (Figure 2).

Table 3 Attitudes of respondents towards MMNP

Attitude question	Response (%)			Mean	SD	N
	-	0	+			
1. Have the activities of the MMNP resulted in any improvement in your community?	49.0	38.6	12.3	-.37	.693	365
2. Have you or anyone in your household ever benefited from MMNP?	95.1	2.2	2.7	-.92	.355	365
3. To what extent do you think the MMNP will eventually help your household economically?	44.2	47.0	8.8	-.35	.637	364
4. How do MMNP staff treat people in your village?	3.5	77.3	19.2	.16	.450	344
5. How well do you think the MMNP considers your village's interests?	30.4	63.1	6.4	-.24	.558	358
6. Are you satisfied or dissatisfied that your village is located near the MMNP?	3.8	21.1	75.1	.71	.531	365
7. Do you agree or disagree that the MMNP exists for the betterment of your community?	9.8	38.8	51.4	.42	.664	366

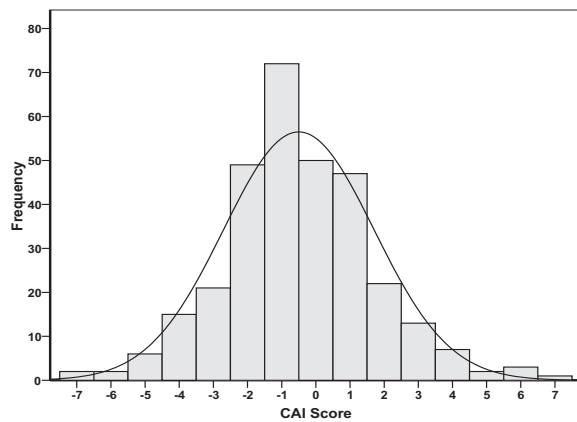


Figure 2 Frequency distribution of CAI scores for attitudes towards MMNP (-7 = least favourable; 7 = most favourable)

Bivariate analysis was used to determine whether other variables are correlated with the CAI. Results show a minor positive correlation ($\rho = 0.240$; $p < 0.001$) between respondents' CAI scores and education levels. Further, independent samples *t*-tests identified that more favourable attitudes towards MMNP were held by respondents who i) had a household member who fishes ($t = 3.933$, $p < 0.001$), ii) knew of a committee that represents their community to MMNP ($t = 3.345$, $p < 0.01$), iii) knew of MMNP's activities ($t = 2.295$, $p < 0.05$), iv) had been inside MMNP ($t = 2.139$, $p < 0.05$), or v) kept bees ($t = 2.033$, $p < 0.05$). However, linear regression analysis indicated that more positive attitudes towards MMNP are primarily influenced ($R^2 = 0.091$) only by higher levels of education ($t = 3.832$, $p < 0.001$) and households with a member who fishes ($t = 3.132$, $p < 0.01$).

In spite of the limited knowledge about MMNP, respondents were also asked their opinion concerning the park's wildlife and forest protection policies. The questions aimed towards understanding attitudes regarding the specific issues mentioned, and not necessarily to determine if respondents possessed detailed knowledge about the provisions of such policies. Most respondents (80.21%) agreed that wild animals should be protected, however a significant proportion believed that only those animals that do not harm people or destroy crops should be protected. Bears, wolves and, especially, snakes (vipera) were characterized as 'animals that can do harm' and, consequently, should not be protected. According to the MMNP biologist, there are no bears or wolves on the park territory. An opinion that the MMNPA wants to repopulate the park area

with certain species emerged again – 'animals should be protected, but it depends on what kind of animals they will bring'. Animals should also be protected for future generations – 'for our children and grandsons to see something real, not only on TV'. Those against wildlife protection primarily stated that they believe animals pose a threat to human life and crops, or because MMNP introduces animals from other countries.

Most respondents (75.1%) also approved of MMNP's forest protection policy. Among the reasons of those in favour are environmental services which forests provide, including clean air, fuelwood, wildlife habitat, beauty / landscape value, and value for future generations. Those disapproving most often identified the restriction of access to fuelwood as the main reason behind their attitude. Attitudes towards wildlife and forest protection policies also showed a significant positive correlation with education level, expressed as the number of years spent in formal education ($r = 0.183$ and 0.205 , respectively; $p < 0.01$).

Consultative Council (CC)

A section of the questionnaire addressed the knowledge and perception of community members concerning the CC. Almost exclusively (95.2%), respondents had no knowledge of any forum or council representing their village to MMNP. Of the 18 respondents who claimed awareness of a forum, only one correctly identified the CC. Regarding attributes of the CC or the method of bringing community concerns to the CC, only one respondent answered positively, being one of the local mayors and, therefore, a CC member.

Damage caused by wildlife

A standard definition of damage caused by wild animals is lacking, therefore, we defined damage-causing animals (DCAs) as wild animals that i) kill, injure or chase humans or livestock, ii) damage property, or iii) destroy crops.

MMNPA keeps no DCA incident records, therefore no park data could be analysed, with the exception of data provided during park staff interviews, which is at best *ad hoc*. They mentioned the existence of incidents, mostly caused by wild boar, fox and jackal. Consequently, a section of the questionnaire was dedicated to assessing perceptions of

DCA events. Twenty-four respondents (6.4%) declared their household had experienced some form of damage from wildlife in the past 5 years. When the spatial reference was extended to the whole village, 18.4% declared they knew about incidents in their village. Respondents were asked what the wildlife-related problems involved, being allowed to choose more than one option. Most frequently (68.1%), the identified problem was chasing or killing of livestock, followed by crop depredation (55.1%). In 13% of the cases, wildlife inflicted property damage and in four cases, human life was supposedly threatened. Wild boars are thought to be the most damaging animal, followed by fox and jackal.

DISCUSSION

Local community needs and natural resource use

In order to consider the influence people might have upon conservation efforts, it is important to understand their socio-economic and demographic characteristics. In terms of gender, we have an unequal distribution in our sample, with more females than males. Moreover, the mean age of respondents is relatively high: 53.3 years. Such a situation may result from migration from rural to urban areas, especially for higher employment opportunities (Rotariu and Mezei 1999), an aspect identified by a significant share of respondents (employment ranked as the second most important need). Household income in the area is far lower than the national average and is juxtaposed within a dying agriculture (in terms of land cultivation), due to the semi-arid climate and lack of irrigation infrastructure. The average household keeps several types of livestock, namely 20 poultry, one pig, two goats and a sheep. Although hunting is uncommon in the area, possibly due to the associated permitting and firearm costs, MMNP field rangers indicated that they occasionally find illegal traps used for poaching wild boar or deer. Fish products, due to the small distance from the Danube, are relatively important in household consumption. Despite drought, lack of labour and financial resources, most households cultivate their land annually, knowing that the harvest will not be able to contribute more than a quarter of the entire household consumption.

Although the number of households experiencing DCAs is rather low in terms of frequency, there is still widespread perception that these incidents, coupled with fears that MMNP will introduce/repopulate the area with vipers, result from formal conservation measures and have the potential to hinder livelihood diversification. How to approach these issues with local communities will need to be carefully considered by MMNPA and addressed with open and transparent dialogue. It is a paradox that successful conservation will likely increase DCAs in the area; how these should be handled is a matter of concern. With the degradation of the communist irrigation infrastructure, the aged population, increased drought and outward migration, we gain a picture of the external constraints facing households neighbouring MMNP, and how these may be exacerbated by formal conservation measures.

Understanding pressing community needs and pressures on local resources is of high relevance for the overall success of conservation strategies. Almost exclusively, all of MMNP's neighbouring communities regard the provision of health facilities, jobs and access to drinking water as the most important needs. Moreover, many would like to experience an increase in agriculture and see the lack of water as the main obstacle that needs to be overcome. Thus, the objectives of the local population differ markedly from those of MMNP, which has nature protection as its main objective. This interface in terms of potentially conflicting goals must be recognized by both MMNP and its stakeholders. Trade-offs need to be clearly communicated among stakeholders as resolutions to multiple interests are negotiated.

Some traditional resource uses are also at odds with MMNP objectives. Most households are largely dependent on wood for heating. Already, due to the perception that MMNP is associated with restrictions on the quantities of wood they will be able to access, there are negative perceptions of the park. Wood exploitation in the area sometimes resembles an informal institution, governed by unwritten laws and sometimes left at the discretion of the local NFA representatives. This is a sensitive subject, seldom discussed or studied openly, but indicated in some of our interviews. This aspect of resource use and access also needs to be clearly communicated to local communities, in terms of who is responsible for the various management

regimes in/around MMNP, and what benefits or costs communities can expect. The subordination of nature protection structures to the NFA and, consequently, to the structures responsible for forest exploitation, represents the paradox of the Romanian PA system.

On a more general level, to effectively integrate these multiple concerns into management plans, MMNP (and PAs in similar contexts) should:

- i) Develop a thorough understanding of the ongoing needs and aspirations of relevant stakeholders, including local perceptions and value of nature and its conservation;
- ii) Meaningfully address immediate concerns including employment, access to health facilities and drinking water, and damage-causing animals.

Local attitudes towards nature protection, MMNP and underlying factors

The relationships of neighbouring communities with MMNP are complex and multi-dimensional. Given its relatively recent establishment, and the absence of radical changes in the forestry exploitation regime, local residents have not had extensive interaction with the administration structures and representatives. Thus, people tend to hold a neutral attitude towards MMNP. Most people believe that the MMNP has done neither anything of great benefit, nor anything particularly detrimental for their communities. However, they appreciate the fact that their community is situated near a PA and consider that it also exists for their betterment. Therefore, one of the directions for progress towards an improved relationship with surrounding communities can be the extension of outreach programmes communicating concrete non-utilitarian benefits for communities.

Factors found to influence attitudes towards conservation and PAs elsewhere include age, gender, education, DCAs, ethnicity and religious affiliation (see e.g. de Boer and Baquete 1998; Mehta and Kellert 1998; Lindsey *et al.* 2005; Allendorf 2007; Anthony 2007; Baral and Heinen 2007; Kideghesho *et al.* 2007), and these were expected to have a potential to influence attitudes. However, none apply to our case, except education level. Our data show that people with more education are likely to have more

favourable attitudes towards the MMNP and its policies. In addition, respondents of households that have at least one member who fishes also held significantly more positive attitudes towards the park. These are interesting patterns, which we believe have important implications. First, they reinforce the significant roles that both education and traditional livelihoods play in shaping attitudes. Second, they reflect that, due to the short history of MMNP, people have not interacted much with the institution of the park; their attitudes are based rather on pre-existing knowledge and, therefore, on pre-constructed notions that have yet to be fully tested with prolonged interaction with the park. MMNP is poised at a crucial crossroads with its neighbours: many local people currently hold neutral attitudes towards the park but, as time progresses, how they interact and are affected by the costs and benefits of the park could sway attitudes in either positive or negative directions. There is an opportunity here for MMNP to engage in more rigorous and comprehensive educational initiatives. A communication strategy that involves both park staff (as verbal messengers) and its newsletter should seek to capitalize on communicating the tangible benefits that the MMNP can bring to the area.

Local perception of the Consultative Council

The Consultative Council (CC) is the only forum involved in the management of the MMNP that has, in its membership, members of local communities. The existence of such a forum should, in theory, improve the relationship between MMNP and its neighbours as an intersection of dialogue. However, our study demonstrates that it is practically unknown.

Far from being a simple exercise, PA outreach to communities via community fora is a very complex and dynamic undertaking. The process of creating and defining community-based organizations and developing competent institutions, that both represent diverse local interests and are sensitive to community dynamics and power relations, is often arduous and time-consuming (Shackleton and Campbell 2001; Anthony 2006). Any attempt to speed up this process can derail the initiative by ignoring important social processes and recognizing the time needed to develop a common language, and an appreciation that people do not all

learn easily. Donors and government agencies need to recognize that such processes do not happen overnight and require long-term commitment and on-going support. After this initial investment by both MMNP and the CC, it would be wise to investigate ways of improving existing structures that build relationships between MMNP and its neighbours. To this end, we suggest that all local actors, regardless of socio-economic background, be brought into and continuously involved in the process through equitable and collaborative negotiations ensuring broadly representative involvement of the local populace. This includes informal representatives (e.g. women, business leaders). Studies elsewhere have shown that local-level cooperation, solidarity, conflict resolution and norms of reciprocity increase with women's participation (Molinas 1998; Westermann *et al.* 2005). These representatives, we believe, would ideally be elected by the communities themselves. Finally, we recommend that the role of the CC, and the procedures and policies through which people can communicate with CC members, should be clearly defined and communicated.

Management strategies must recognize that PA establishment and management is often a social act

that produces changes in an inhabited environment. Therefore, park administrations must be aware of both negative and positive perceptions that PA establishment and management can generate among local residents, and work to integrate the diversity of opinions, attitudes and values in order to reflect this reality. The MMNP is now at a crossroads at which its local populace can be greatly affected by future interaction with the park. How it proceeds with this engagement will be the precursor of whether it fails or succeeds in the eyes of its neighbours.

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