

Forest Conservation Knowledge-Community Perception Within Protected Areas: The Case of Karagöl-Sahara National Park

Sevim Inanç

Artvin Çoruh University (Forestry Economy Department, Forestry Engineering, Artvin, Turkey)

Abstract—Commitment of local communities to protected areas is essential for conserving forest and biodiversity. However, in many developing countries like Turkey, former management strategies kept human from protected areas using coercion. Fortunately, more recent regimes attempt to give local populations more control on the management but little is known about local residents' perceptions, beliefs and attitudes toward the management of these areas. This study, carried out around the Karagöl Sahara National Park, determined factors which support local communities' positive perceptions towards forest conservation in the park, analysed their assessment of current park management activities compared to former management approaches and draw the implications for effective participatory management of protected areas. We collected socio-demographic data from 100 residents on their awareness of conservation methods. The findings indicated that the positive behavior of local communities towards conservation of forest within Karagöl Sahara National Park was highly correlated with the current management strategy that involved more effectively local communities, the educational level of participants. Participants' perceptions of forest conservation were strongly related to locally perceived benefits. Although 91 % of participants were favorable to the concept of forest and biodiversity conservation within the park. Our results suggested that understanding local residents' perceptions and using them as a starting point to improve the park–people relationship could help park management staff to involve more effectively local communities and improve their awareness about biodiversity conservation within the park.

Keywords— Karagöl-Sahara National Park, forest, IUCN, community conservation.

I. INTRODUCTION

Protected areas are the cornerstone of biological conservation. As defined by the International Union for Conservation of Nature (IUCN), protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with

associated ecosystem services and cultural values (Dudley, 2008). One

basic objective of a system plan for protected areas is to effectively protect, develop and maintain representative samples of the various biotopes in the areas where they are installed (Abuzinada, 2003). Although protected areas have usually been set aside from human exploitation, it is now increasingly recognized that they should play a role in sustaining livelihood of adjacent local communities (Hamilton et al., 2000; Walpole and Goodwin, 2001; Charnley et al., 2007).

Responding to perceptions of many conservationists — especially those working in poorer countries — that wildlife conservation and protected areas were doomed unless local communities become an integral part of conservation efforts (Hackel, 1999; Hamilton et al., 2000; Yeo-Chang, 2009), new strategies, often referred to as “community conservation” have evolved over the past two decades (Infield and Namara, 2001).

The “community conservation” approach seeks to accommodate local peoples' needs and aspirations by empowering them, promoting their active participation in local resource management, and improving their economic welfare (Songorwa, 1999; Infield and Namara, 2001; Mehta and Heinen, 2001).

To assess the effectiveness of these new park management policies for the long-term conservation of the park resources, it is important to gain insights into the factors that determine local communities' current positive perceptions about conservation of biodiversity within the park and their impressions relating to the park managers' activities. Following insights from previous research that local people perception is influenced by the type of management and the benefits they perceived from protected areas (Ormsby and Kaplin, 2005), we hypothesized that people who developed positive perception about Karagöl Sahara National Park and its biodiversity are those who get high benefits from the park. We also made the assumption that people who have positive opinion about the current park management methods developed positive perception about forest conservation within it. Based on preliminary results

(Gillingham and Lee, 1999; Mehta and Heinen, 2001) and knowledge of cultural differences and gender in the area (Vodouhê et al., 2009), we also made assumption that local communities perceptions are function of their sex, origin, main activities, formal educational level and affiliation. The objectives of this study were to (1) determine factors which support local communities' current positive perceptions towards forest conservation in Karagöl Sahara National Park, and (2) analyse their assessment of current park management activities compared to former management approaches and draw the implications for effective participatory management of protected areas.

II. METHODS

2.1. Study area

The location of Karagol-Sahara National Park and its immediate surroundings are shown in Figure 1. The research area was calculated by GIS techniques. This area is about 21,912 ha, and between 900 and 2700 m in altitude. Karagol-Sahara National Park covers 3466 ha area in this watershed. The area includes Cirt düzü, Cevizli, Veliköy, Pınarlı, Meşeli, Yukarıkoyunlu, Aşağıkoyunlu, Köprülü, Kirazlı, Karakoy, Kocabey, Yavuzköy villages, kıllas (low mountain pastures), and yaylas (high mountain pastures). There are many lakes, streams, mountains, and hills in the area.

In our study case, to identify factors which determine local residents' perceptions to conserve or not the forest and to manage the park, we used data related to participants' socioeconomic, demographic and perception towards forest conservation and park management. Our perception influences our attitude (Trakolis, 2001). Indeed, attitudes are formed in part by communities' and individuals' perceptions and experiences (Infield and Namara, 2001). The attitude itself can be considered an independent variable affecting behavior, however, and it can also affect the independent variable of motivation. In one sense, the attitude can also be considered an intervening variable since it is a derivative of motivation which determines behavior. We argue that people consider the implications of their actions before they decide to engage or not to engage in a given behavior (Ajzen and Fishbein, 1980). Therefore, knowing people's perceptions can produce useful information that could be incorporated into the decision-making process and lead to resolution of conflicts between local people and park authorities by improving attitudes and altering behavior.

2.2. Household surveys

Protected areas in developing countries are increasingly popular destinations for wildlife tourists, and tourism has the potential to generate sustainable local benefits, sufficient for local people to value, and therefore

protect, their wildlife heritage as a source of income. Most of the questions were closed-ended, although we included some open-ended questions to investigate participants' perception towards forest conservation and park management. We also recorded data about participants' age, gender, profession, and educational level. We asked participants about their involvement in park activities, their link with local organization in charge of park management, the benefits they obtain from park and their opinion on park management. We also collected data on participants' economic activities, their various sources of income and conservation awareness. In our study case, to identify factors which determine local residents' perceptions to conserve or not the forest and to manage the park, we used data related to participants' socioeconomic, demographic and perception towards biodiversity conservation and park management. These variables were identified in previous studies as significant predictors of perceptions about conservation.

III. RESULTS AND DISCUSSION

According to the survey data recorded in research field, socio demographic characteristics belong to local community are shown on Table 1.

Table.1: Socio-demographic features of participant

| Gender | |
|---------------------------|--|
| Woman | |
| Man | |
| Total | |
| Age | |
| 17-20 | |
| 21-30 | |
| 31-40 | |
| 41-50 | |
| 50 + | |
| Total | |
| Marital Status | |
| Single | |
| Married | |
| Total | |
| Educational Status | |
| Literate | |
| Primary Education | |
| Secondary Education | |
| Faculty | |
| Master- PhD | |
| Total | |
| Job | |
| Retired | |
| House wife | |
| Laborer | |
| Unemployed | |

| |
|--------------------------|
| Officer |
| Student |
| Freelancer |
| Total |
| Level of income |
| to 1000 TL |
| between 1001 and 2000 TL |
| between 2001 and 3000 TL |
| over 3000 TL |
| Total |
| Family size |
| between 1-3 |
| between 4-6 |
| Total |

Table.2: Summary of the main questions of the questionnaire and some examples of answers.

| |
|--|
| Some Questions |
| Age, gender, education level, main activity? |
| Do you know the main objective of the park? Yes/No |
| Why was the park created? Conservation/tourism/no opinion |
| Importance of the presence of the park to surrounding people? |
| Road maintenance/incomes from tourism/development projects/infrastructure |
| Your expectation about the park management? More involvement of local people/more land for agriculture/more revenue from protected areas management |

Our results suggest that people's positive perceptions of forest conservation were strongly influenced by their educational level and assessment about park management. Gender, age, family size had less influence.

These meaningful factors may be grouped into socio-demographic educational level and perception factors (assessment about park management). Perceptions were relative to benefits obtained from park due to the current management approach. Similar results were found by Pyrovetsi and Daoutopoulos (1997) and Allendorf et al. (2006) who concluded that indigenous people may express anti-environmental attitudes for variety of reasons, including low education levels, lack of awareness about environmental issues and lack of participation.

Local communities also benefit from many development projects and infrastructure due to the presence of the park.

The findings clearly suggest that benefits are strong incentive for people to perceive conservation positively. Correlation between benefits and positive perception of biodiversity conservation has been confirmed to be positively significant in many cases (Mehta and Heinen, 2001; Baral and Heinen, 2007). The improvement of benefits that local communities got from the park will be a powerful incentive to increase their willingness about forest conservation within this area.

Educational level is one of the variables which affect people's perception about forest conservation in the Karagöl Sahara National Park. All participants who are unfavorable to forest conservation have a weak formal education level. This result supports the positive link between consciousness about forest conservation and education showed by previous authors. Higher level of education also helps to understand the role of the park and the usefulness of the conservation of its biological diversity. Another important reason which explains the relative high impact of education on people's positive perception on forest is that those with good level of education rarely practice agriculture as their main activity. They are involved in non agricultural jobs such as teaching or working in local or national non government organizations.

Thus, they have less contact with park staff and resources. Although benefits obtained directly from the park are the main factor which improve people awareness about biodiversity conservation, those who originated from villages near the park also supported the existence of the park.

This finding appears to confirm surveys around parks in Turkey where people's agreement on the necessity to protect forest for future generations conduct them to develop positive attitudes about protected areas. The reference to future generation in supporting biodiversity and forest conservation is very important and needs support from the park staff for more generalization. People who benefit from the Karagöl Sahara National Park, especially in terms of employment opportunities such as anti-poaching ranger and tourism guide, can hold more favorable attitudes towards the park, and extension of these benefits, in addition to locally relevant education, may have the greatest potential in shaping attitudes towards conservation.

The people's positive perception on park management is a good opportunity for biological diversity conservation. Previous studies had showed that people's perceptions of the protected areas management also strongly influenced their attitude about conservation.

Education is one of the factors which has positive impact on people perception of forest conservation. Education could be an important way to motivate people to develop

or reinforce positive perception about biodiversity conservation.

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