**Journal of Environmental Biology** **January 2010,** 31, 87-96 (2010)


# Conflicts in benefits from sustainable natural resource management: Two diverse examples from Turkey

**Hasan Alkan*, Mehmet Korkmaz, David W. McGill and Mehmet Eker**

Faculty of Forestry, Suleyman Demirel University, Cunur - 32260, Isparta, Turkey

(Received: March 30, 2009; Revised received: June 01, 2009; Accepted: September 05, 2009)

***Abstract:*** *Participatory approaches to natural resource management and development are widely accepted as effective instruments for achieving sustainable forest management (SFM) particularly in the developing countries. However, local people live within and adjacent to the forest resources and are dependent on the forest in terms of their livelihoods may prevent turning some decisions, intended as a component of sustainable forest management, into action. This situation arises from the lack of involvement by local stakeholders, a condition that is generally accepted as one of the most important instruments of sustainable forest management. Consequently, forest and other natural resources have not been effectively protected from negative behaviours of local populations. In this study, difficulties that have been faced in acquiring local participation and the importance of local participation for sustainable forest management are discussed using two case studies from Turkey. At acquiring of local participation is considered to important of local perceptions. If perceptions are negative, participation will not obtain. Thus, the study has focused on local perceptions. Field survey was carried out to collect necessary information for each case study. We conclude that decisions that will restrict the natural resource benefits for the local public, will lead to negative local perceptions of the project and lead to adverse behavior and negatively affect sustainable forest management efforts.*

***Key words:*** *Natural resource, Protected area, Local participation, Forest management*
*PDF of full length paper is available online*
*** Corresponding author:** hasanalkan@orman.sdu.edu.tr

## Introduction

Sustainable forest management (SFM) is a common narrative in policy discussions related to development and natural resources. As noted by Kennedy *et al.* (2001) and Angelstam *et al.* (2005), SFM is a concept in sustainable development (SD), a concept popularized by the 1987 Brundtland Commission's report. 'Our Common Future' in which SD was defined as "development that meets the needs of the present generation without compromising the ability of the future generations to meet their own needs". Since the Brundtland report, SD has captured the imagination of the public as well as policy-makers at all levels (Howell *et al.,* 2007). Moreover, in the time following The United Nations Conference on Environment and Development in Rio 1992, various sustainability processes on the international level have aimed at securing sustainability on national and/or regional scales (Jöbstl, 2005). SFM integrates consideration of social, economic, and ecological (environmental) factors in decision making process. In general, the ecological dimension comprises biological diversity. The social dimension includes public participation and social values and the economic dimension covers delivery of essential ecological goods and services (Eeronheimo *et al.,* 1997; Jöbstl, 2005; Davies *et al.,* 2007; Wolfslehner and Vacik, 2008). In other words, economic sustainability is relevant to sustainable management of forest enterprises (Turker, 2003).

It is now widely accepted that participatory methods are the most effective approaches to achieve SFM (Kant and Lee, 2004; Guillermo and Prabhu, 2006). In order to apply SFM successfully on a micro level (Fig. 1) it is generally understood that the crucial main component required is local public participation (Alkan and Eker, 2005).

Being able to get local participation in sustainable management of natural resources is related to the character and number of local stakeholders. Having a considerably excessive number of rural settlements that have economies intertwined with and dependent on natural resources for meeting their vital needs makes political SFM decisions difficult to be put into practice.

According to The World Bank's Forest Strategy Notes, more than 1.6 billion people depend on forests. Approximately 60 million local people are almost wholly dependent on forests. Some 350 million people who live within or adjacent to dense forests depend on them to a high degree for subsistence and income (Vedeld *et al.,* 2007; Torn *et al.,* 2007; Adhikari *et al.,* 2004). According to census in 2000 (TUIK, 2007), Turkey has a population 67.8 million, 35% of which lives in 37 366 villages. Approximately 7.6 million people live in 20 482 forest villages located in or adjacent the forested areas. Local people traditionally exploit forest resources for their everyday needs such as firewood, timber for shelter, non-wood forest products, foods, water, medicine, fodder, *etc.* (Dolisha *et al.,* 2007; Mamo *et al.,* 2007).

The character of the local public (their socio-economic and cultural features) has been shown to be an element that is significant

in the public's negative or positive formation of perception and attitudes of natural resources and their participation in natural resources management. Generally people in Turkey that live in close proximity to and are dependent on local natural resources are in a much worse socio-economic situation than those who live in more urban areas. For instance, a villager's on an average annual income is approximately 150-200 $ USD (ORKOY, 2005). As well, rural villagers also have significant problems, especially in mountain villages, in terms of physical infrastructure and low literacy rate.

These socio-economic challenges are extremely important in terms of the formation of villager's perceptions of natural resources. For instance, a substantial number of well-educated people are willing to support the decisions and participate in the management of natural resources (Pavlikakis *et al*., 2006).

Lately, decision makers are increasingly aware of the importance of recognizing local participation in defining management strategies and actions for SFM. Often, however, benefits from SFM can have a conflict (Fig. 2), with opposing sides evolving between SFM's ecologic and social dimension, ecologic and economic dimension or economic and social dimension. In cases where these SFM benefits conflict, public participation and support is difficult to garner (Alkan and Eker, 2005). Because the targets of resource managers and stakeholders groups can be different, they may be so different that they conflict with each other. While decision makers might be concerned about the conservation of natural resources, some stakeholders may be more concerned about the economic benefits of the natural resources (Kangas *et al.,* 2006).

Turkey is party to many international agreements related to the environment and forestry. In this context, new forestry concepts and behaviour patterns, which consist of terms such as SD, SFM, certification, participation, biodiversity *etc.* and whose conformity to existing forestry concepts are still being researched, are followed in Turkey and by necessity are being implemented in the country. Turkey participated in both the Helsinki and Near East Processes and has instituted research studies in 1999 in order to form a national criteria and indicator set based on Near East Criteria and Indicator set (OGM, 2005). One of the important issues discussed during this period has been local participation (Anonymous, 2003; Turker, 2003; Atmis *et al.,* 2007). Even though serious problems have not been faced at this stage of adapting to new concepts and public attitude patterns to the conditions found in Turkey, there have been significant limitations discovered at this stage. For instance, on-the-ground examples that could be considered partially successful for providing local participation are still in a limited number. It is getting quite difficult to find local participation in resource management especially when personal benefits are lacking for local stakeholders. We propose three main reasons for lack of participation by local stakeholders: 1) not being able to give the importance to the studies of education and awareness of local public at sufficient level, 2) inability to remove the existing negative local perceptions for nature protection studies and 3) lack of alternatives for resolving the local losses of benefit from SFM projects. Successful development and implementation of SFM decisions must first evaluate the perceptions of local public related to policy decisions and attempt to come to consensus with stakeholders on these decisions if the perceptions of the policy are negative. In this study, we present two different cases where ecological and economic sustainability dimensions of SFM are in contradiction with social dimensions and use these cases as a backdrop for discussing whether the desired local participation can be gained as partners in local SFM projects. Especially, we focused on local perception because we think that these perceptions prevent to acquiring local participation.

## Methods of Study

Two case studies were used in order to begin a discussion of the relationship between public perceived benefits from SFM project and the respective participation and support of those programs. The first case study is about whether the decision model created by the state forestry enterprises in order to decrease the storage expenses of forestry products are adopted by the local public or not. Hovewer, the second case study is related to local perception and consequences that result by limiting local use by formally protecting an area for the natural resource values that it contains. The case study areas are shown Fig. 3.

The primary data related to the first case study were obtained from the local stakeholders that lives in 8 villages (Table 1) within the borders of Isparta province and Sutculer county, Republic of Turkey and do the production works of the Regional Directorate of Forest of Isparta, Directorate of Forest Enterprise of Sutculer.

The information was gathered using interviews in two land studies. Two different survey forms were used for gathering information. The first form aimed to represent the villager's socio-economic status. The second form is a structured interview form developed to define villager's thoughts and expectations for the reorganisation of local forest products storage facilities. The information forms were filled out for interviews with village headmen, members, cooperative managers and members of board of directors of the cooperative and some villagers. Face to face interview methods were used for filling out the forms. Also except for answers given to the questions that are in the forms during interviews, the application has been completed by keeping note of the issues mentioned and that may be considered important as well. In addition to this, technical information for the storages facilities was obtained from the forest protection officers that work at these facilities. Other members of the concerned group (*for ex*: Sutculer Head of Trade Corporation) were interviewed during the studies in the area as well.

The main data related to the second case study consist of the land data of the preceding studies (Geray *et al.,* 1999; Ozden *et al.,* 2002; Alkan, 2007; Alkan, 2009; Alkan *et al.,* 2009) that the researchers made previously in the rural settlements that are in Kizildag National Park and Kovada National Park. Some descriptions for the related villages are given in Table 2.

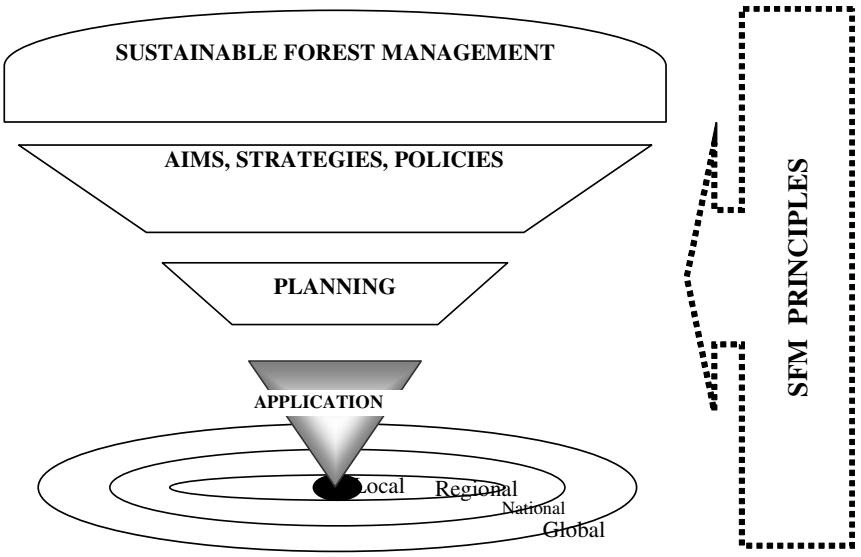


**Fig. 1:** Application process for sustainable forest management (Alkan and Eker, 2005)

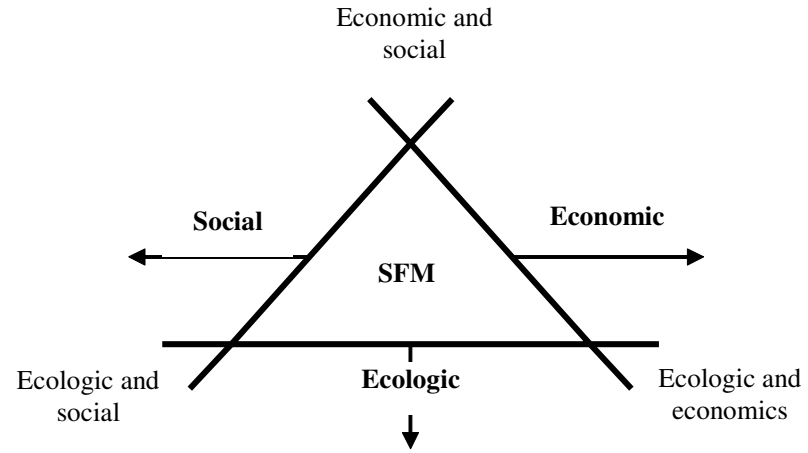


**Fig. 2:** Dimension of sustainable forest management and benefit vectors (Alkan and Eker, 2005)

In these studies, information related to villages and local perceptions were gathered by interview and questionnaire method. Two information forms of semi-structural quality have been used during interviews in order to determine the socio-economic structures of the villages. The first form was filled out with the interviews made face-to-face with village officers and second forms have been filled out with the interviews made face-to-face with the related public organizations, establishments and other concerned groups. In the questionnaire studies, the determination of standard size is based on 10% of the number of full house of the village (Geray *et al.,* 1999). The questionnaires have been filled out with head of families by face-to-face interviews.

Field survey was carried out from March to June in 2008 for first case study. On the other hand, field survey of the second case study was carried out at separate times. Field survey related to Kizildag National Park was started in 1998 for Kizildag National Park Master Plan. Besides, some report and article were published concerning these efforts (Geray *et al.,* 1999; Ozden *et al.,* 2002). In addition to these, in some villages field survey was caried out from 2007 to 2008, again. Field survey related to Kovada Lake National Park was realized in 2007 (Alkan, 2007) and in 2008.

During the field research, the study team directly observed the general conditions of the area. The secondary data of the study has been provided from the departments related to forestry and literature related to the information and documents obtained by the other public establishments.

## Results and Discussion

### Case study 1:

The problems that Directorate of Forest Enterprise of Sutculer faces in terms of storing-selling the forest products and solution searches are focused on local participation.

**Introduction of actual problems:** There are 27 units of regional directorate of forest and 217 enterprise directorates affiliated with these in Turkey. The Directorate of the Forest Enterprise of Sutculer is affiliated with the Isparta Regional Directorate of Forest. Sutculer area is in an important position in terms of the production of wood,

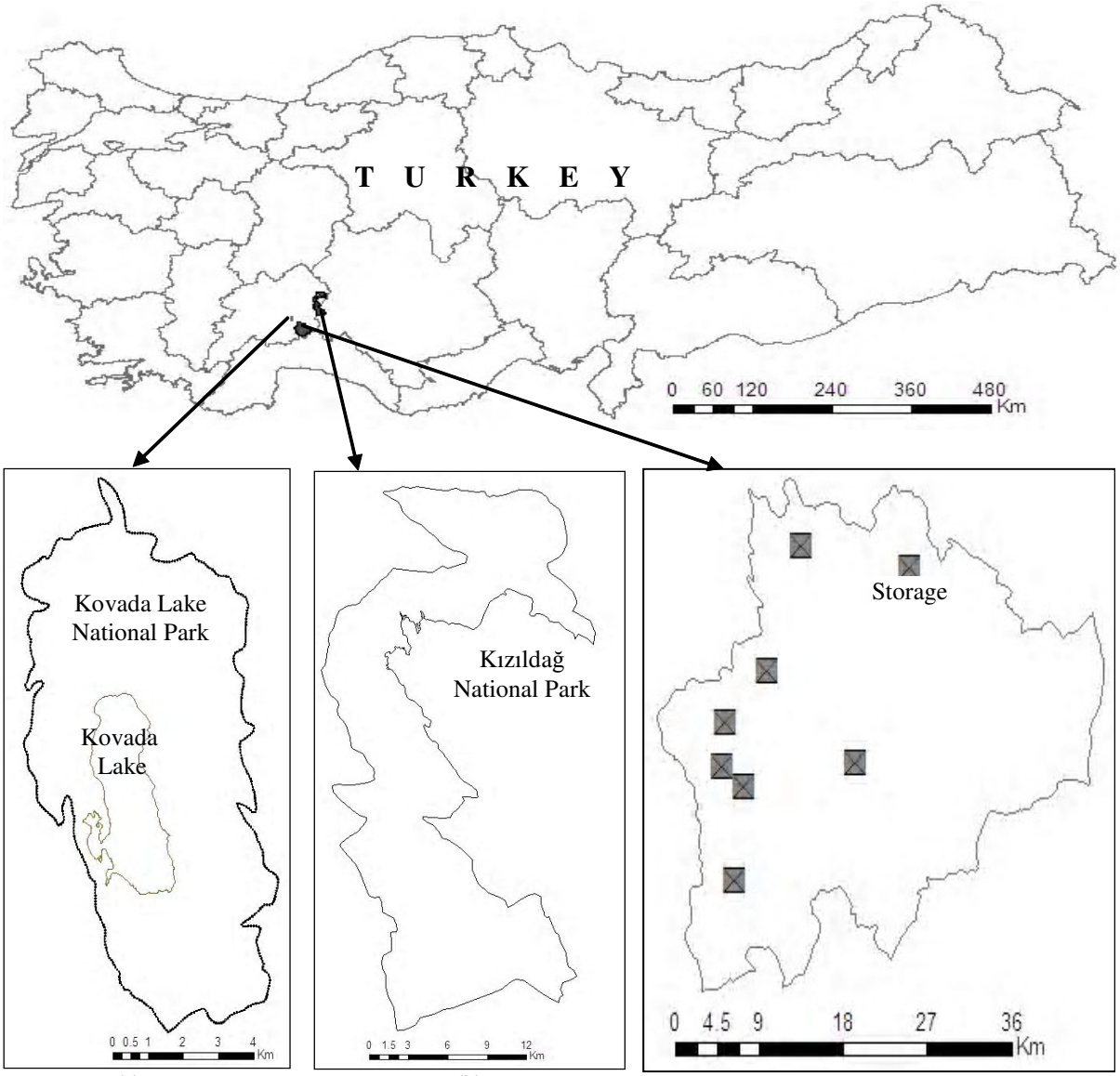


**Fig. 3:** Case study areas (a: Location of Kovada Lake National Park, b: Location of Kizildag National Park, c: Location of Forest Product Storages)

forestry products and services in Isparta Regional Directorate of Forest. The raw wood materials, whose production is made by the local public by Directorate of Forest Enterprise of Sutculer, is gathered in 8 different storage facilities for marketing purposes (Table 3).

Enterprise directors have determined some problems related to the storage and selling of forest products. These are;

-- The storage facilities are not positioned for easy access by wood purchasers. This problem leads to a decreased number of customers that request forest products from certain storage facilities.

-- By reason of the storages being on different way routes, the transportation costs of the customers, who would like to buy product from more than one storage, are increasing. This status prevents the customers from applying for the products of more than one storage in the same tender of sale and therefore it decreases the number of customers.

-- Forest enterprises have to give priority to local public for loading and transportation of the products from the storages in accordance with law of forestry. This status that is in favour of local public causes loss of benefit for customers. The customers have to accept the prices determined by village cooperatives because of the missing conditions of competition. This creates dissatisfaction among customers.

-- As it is seen in Table 3, all storage capacity can not be used. The capacity use rate is about 50% in the scale of all the storages. General expenses of forestry enterprise related to storing are high due to this inefficiency.

**Table - 1:** Some demographic features of villages

| Villages | Dwelling number | Populations (according to 2007 census) | | |
|---|---|---|---|---|
| | | Male | Female | Total |
| Belence | 360 | 297 | 313 | 610 |
| Sipahiler | 125 | 141 | 145 | 286 |
| Cobanisa | 263 | 330 | 305 | 635 |
| Karadiken | 180 | 224 | 223 | 447 |
| Kizilli | 158 | 260 | 284 | 544 |
| Candir | 206 | 309 | 312 | 621 |
| Seyhler | 80 | 134 | 148 | 282 |
| Yesilyurt | 201 | 336 | 343 | 679 |

Sources: Tuik, 2007, Field surveys

**Table - 2:** Some features of village related to Kizildag and Kovada lake National Parks

| Villages | National park | Dwelling number | Populations (according to 2007 census) | | |
|---|---|---|---|---|---|
| | | | Male | Female | Total |
| Belcegiz | Kizildag NP | 310 | 455 | 444 | 899 |
| Yenikoy | Kizildag NP | 130 | 261 | 272 | 533 |
| Armutlu | Kizildag NP | 28 | 66 | 73 | 139 |
| Sarikabali | Kizildag NP | 77 | 137 | 178 | 315 |
| Golkonak | Kizildag NP | 110 | 177 | 177 | 354 |
| Celtek | Kizildag NP | 88 | 186 | 181 | 367 |
| Karayaka | Kizildag NP | 135 | 191 | 230 | 421 |
| Beyköy | Kizildag NP | 268 | 320 | 345 | 665 |
| Yassibel | Kizildag NP | 210 | 339 | 357 | 696 |
| Kiyakdede | Kizildag NP | 110 | 175 | 159 | 334 |
| Gedikli | Kizildag NP | 238 | 313 | 328 | 641 |
| Serpil | Kovada NP | 164 | 301 | 304 | 605 |
| Kirinti | Kovada NP | 100 | 160 | 172 | 332 |
| Yuvali | Kovada NP | 268 | 371 | 411 | 782 |
| Y. Gokdere | Kovada NP | 360 | 513 | 514 | 1027 |
| Akbelenli | Kovada NP | 40 | 58 | 61 | 119 |
| Karadiken | Kovada NP | 180 | 224 | 223 | 447 |

Sources: TUIK, 2007, Field surveys

**Table - 3:** Forest product storages

| Forest product storage | Related to village | Capacity ($m^3$) | Actual usage ($m^3$) | Capacity usage ratio (%) | Distance to nearest county (km) |
|---|---|---|---|---|---|
| Mentese forest product storage | Belence | 15.000 | 12.000 | 80,0 | 36 |
| Sipahiler forest product storage | Sipahiler | 15.000 | 2.000 | 13,3 | 20 |
| Cobanisa forest product storage | Cobanisa | 20.000 | 15.500 | 77,5 | 7 |
| Karadiken forest product storage | Karadiken | 10.000 | 2.500 | 25,0 | 11 |
| Goztasi forest product storage | Kizilli | 10.000 | 7.000 | 70,0 | 45 |
| Kargicak forest product storage | Candir | 10.000 | 3.000 | 30,0 | 20 |
| Seyrekcam forest product storage | Seyhler | 10.000 | 2.700 | 27,0 | 26 |
| Sigirlik forest product storage | Yesilyurt | 10.000 | 5.600 | 56,0 | 20 |
| Toplam | | 100.000 | 50.300 | 50,3 | - |

Sources: IFR, 2009, Field surveys

For the solution of the problems stated above, the solution developed by the enterprise directors has been decreasing the number of existing depots from 8 to 1. However, the primary sources of livelihood for 5 of the 8 forest villages where storage facilities are located are forestry-related activities. The villagers believe that they will have significant losses of income if wood storage facilities in their villages close or move to another location. Another perception that is held by the villagers is that there will not be enough studies devoted to alternative income resources as developing of eco-tourism, by way of extension, financial support and credit projects in order to remedy the mentioned loss of benefit by the resource managers. This situation is a significant obstacle in terms of decreasing the number of storage.

**Table - 4:** Income resources of villages according to priority

| Villages | Income resources according to priority | | | |
|---|---|---|---|---|
| | The first | The second | The third | Other income resources |
| Belence | Forestry | Livestock | Agriculture | - |
| Sipahiler | Forestry | Livestock | Agriculture | - |
| Cobanisa | Forestry | Agriculture | Livestock | - |
| Karadiken | Forestry | Livestock | Agriculture | - |
| Kizilli | Forestry | Agriculture | Livestock | Fishing, Transportation |
| Çandir | Agriculture | Forestry | Livestock | Fishing |
| Seyhler | Agriculture | Forestry | Livestock | Transportation |
| Yesilyurt | Agriculture | Forestry | Livestock | Poplar cultivation |

**Studies for local participation:** Firstly, it has been necessary to determine the local perceptions and behaviours in order to be able to get the local participation to this application that is considered as an ideal solution in terms of management. For this purpose, the first phase of the made local participation has consisted of the information meetings made for increasing the information and awareness level of the local people on this issue. In these studies, the resource managers that got together with the villagers conveyed that these studies were necessary, that there could be potential positive and negative effects on villagers, and that there were alternative solutions that are considered in order to correct the complications. In the second stage, the headmen of the related villages, cooperative managers and members of board of directors were taken to the Seydikoy Forestry Products Storage of the Directorate of Forest Enterprise of Bucak to demonstrate a good example of a centralized storage facility in the area and to feature the success of this storage facility in a technical and managerial sense. In the third stage; we have been requested to evaluate the perceptions, expectations and attitudes of the villagers in order to determine whether the studies conducted for persuading the local public produce a useful result or not .

**The dependency status of the local public to the forest resources and their attitudes related to closing of the storages:** According to income values in Table 4, forestry activities such as harvest, cutting, logging operation, transporting, storing, loading and planting are the main sources of income in 63% of the villages (Belence, Sipahiler, Cobanisa, Karadiken and Kizilli). Connected with the development of irrigated agriculture, the dependency on the forest resources in the villages of Candir, Seyhler and Yesilyurt are of lower priority than that in the other villagers. Nonetheless, there are also individuals that particularly work in the storage facilities and derive income from forestry activities (Table 4) as 3 of these villages rank forestry as their second most important source of income. The storage and loading activities in the forestry products in Cobanisa, Sipahiler, Karadiken and Belence are carried out by labour force at a high percentage. There are families in these villages that rely exclusively on income from these forestry activities. In addition, local individuals own machinery and other equipment used for storage and loading tasks in the villages of Kizilli (10 shovels), Candir (3 shovels), Seyhler (2 shovels) ve Yesilyurt (4 shovels). The forestry activities are being conducted by the Agricultural Development Cooperatives which are established by the villagers. Every village has one development cooperative. Forestry is the main activity that cooperatives conduct for economic purposes. These cooperatives have 160 members in Belence, 120 in Sipahiler, 110 in Cobanisa, 198 in Karadiken, 232 in Candir, 108 in Seyhler, 263 in Kizilli and 248 in Yesilyurt. In addition, the Kizilli Transporters Cooperative has 30 members whose main activity involves around transporting forestry products. Forest enterprises also employ a limited number of local residents from each village for forest-public relations and wild land firefighting programs. Area guards are employed in the frame of protection works made by the legal entity of the village.

Other forestry activities in the villages have to do with gathering non-wood forest products. For example, myrte has been gathered under special permission for years to make wreaths in the villages of Kizilli, Seyhler and Yesilyurt. So too are oregano and sage gathered in all the villages as a part of household economy.

Agriculture in the area is made up of both rainfed and irrigated crops. Fruit, vegetable production and greenhouse products are cultivated in Candir, Seyhler and Yesilyurt villages. Dependence on forestry resources in these villages, especially in areas where irrigated agriculture can be developed, is decreasing day by day. Rainfed agriculture is undertaken in the other villages only because they do not have agricultural irrigation facilities or too few of them.

Livestock production is also decreasing in the region. Both grazing and land stable-fed livestock in the area is decreasing as these activities are prohibited in the forests in many areas. Three to four producers from the local public are selling fish in Kizilli and Candir villages. Trading and transportation are other jobs in the villages. Today, handcrafts (rug business) that were once an important source of income, particularly for women, have been completely abandoned.

Local residents describe themselves as open to developments and changes; being able to adopt the innovations easily, having an entrepreneurial and hardworking spirit. The heads of households are usually men in a patriarchal family structure. Family decisions are most often made by the head of the household. However there are also family heads that take notice of the participation of the other members of the family.

Village headmen are the most effective people taking part in the village management. They usually take the role as the cooperative managers, while members are residents who are intellectual and experienced and whose advice can be followed. There is not a common disagreement (conflict) between villagers. All of the local public that joined the research stated that they did not have a problem with forest management in general sense.

Nonetheless, almost all of the local public still opposes the plan to close storage facilities as prescribed by the forest management. One of the most important reasons of this is that the villagers believe that their income which they will earn from the forestry activities will be decreased. As a matter of fact, almost all of the local public that participated the interview agreed with the question: 'In case the storage in your village is moved to somewhere else, do you have an important loss of income?'. There is much concern in the way that the staff employed in a shared wood storage system as the need for local tools and equipment will be decreased. Also the local public living in Kizilli believes that in case the storage in their village is moved to somewhere else, the people who are working for forest products transportation will suffer from it. Forest management holds the view that by decreasing the number of storage facilities to one, villager's income from forestry activities can be increased with some altered arrangements. However, villagers are still suspicious of this point of view. Except for a few people living in Seyhler village, no one agreed with the question: "Do you agree with the idea that the forest property can be stored in your village in a collective manner and therefore the income can be increased with a more active and efficient storage?"

When asked, "In case the storage in your village is moved to somewhere else, is your transportation income's being increased related to the length of the distance between landing and storage important for you?" most village managers and a major part of the villagers thought that there would be little benefit to them.

When asked for the best location for a new storage facility, they stated that the central storage should be built in their villages instead of making a selection between the alternatives given as a choice.

**Case study 2:**

*Perceptions and attitudes of local public related to the studies for making a protected area within the context of ecologic sustainibility of natural resources*

**Introduction to protected area problems:** Protected areas include national parks, nature preserves, wilderness areas, natural monuments, protected landscape and managed resource protection areas (LTDP, 2007). The creation of protected areas has been a central element in conservation policy since its beginnings in the 19th century. The area under legal conservation worldwide has increased over the past 25 yr (IUCN, 2004; Colchester, 2004; Naughton-Treves *et al.,* 2006). FAO estimates that approximately 477 million ha of forests or approximately 12% of the world's forests are legally protected but the statutory levels of protection surely have different levels of enforcement (Siry *et al.,* 2005). In general, there is the conventional 'preservationist' or isolationist approach which tends to favour centralized power in order to discourage resource use by local people particularly in developing countries (Badola, 1998a; Rutagarama and Martin, 2006). In this instance, local people could be negatively affected in terms of livelihood when protected areas are designated (Davies *et al.*, 2007).

**Table - 5:** The damage levels in natural resources of the Kovada lake National park

| Resources | A few damaged | Intact middle level damaged | Heavy damaged |
|---|---|---|---|
| Forests | | | |
| Kovada lake | | | |
| Kovada canal | | | |

Sources : LTDP, 2007; Alkan, 2009

In Turkey, the formation and management of protected areas have gone on for years. In this context many areas that have valuable natural and cultural resources have been under protection in various statutes. There are 38 national parks in Turkey, as well as 22 nature parks, 33 nature conservation areas and 104 nature monument areas (DOKAP, 2007).

Kovada Lake and Kizildag National parks that are discussed in our research are national parks which have about 40 yr of history. Kizildag National Park was designated in 1969 because of the scenic Beysehir Lake surrounded by rich forests. Originally the national park was 2316 ha, but was increased to 59600 ha with a new legal arrangement made in 1993 (Anonymous, 1993). Kovada Lake National Park is a protected area that was declared a national park one year after Kizildag National Park. The most important resource values of 6763.5 ha national park is the valuable Kovada Lake and surrounding forests.

Both national parks neighbour each other and are considerably large in size. Rural settlements are situated within and adjacent to these national parks. The local public has not been taken into consideration sufficiently when these areas were slated for designation as national parks, nor during the writing of long term development plans related to the protection and usage of the areas. Limitations and prohibitions of land use in these protected areas were made in several ways that have caused local losses of benefits (Geray *et al.,* 1999; Ozden *et al.,* 2002; Alkan *et al.,* 2009). In spite of all these mentioned complications, the resource managers expect the local public to adopt and protect these areas. However, Kizildag and Kovada Lake National Parks and their environs have not been protected from negative human impacts up until now. As a matter of fact, Kovada and Beysehir lakes have been rapidly polluted because of agricultural pollutants and harmful cultivation practices, as well as daily activities in the villages.. Forest resources are still destroyed (Table 5). Forest offences frequently occur in the district

**Table - 6:** Income resources of villages according to priority

| Köyler | Income resources according to priority | | | |
|---|---|---|---|---|
| | First | Second | Third | Forestry income |
| Belcegiz | Agriculture | Livestock | Fishing | unavailable |
| Yenikoy | Agriculture | Livestock | Fishing | unavailable |
| Armutlu | Agriculture | Livestock | - | a few |
| Sarikabali | Agriculture | Livestock | Fishing | unavailable |
| Golkonak | Agriculture | Livestock | Fishing | unavailable |
| Celtek | Agriculture | Livestock | - | unavailable |
| Karayaka | Agriculture | Livestock | Fishing | unavailable |
| Beykoy | Agriculture | Livestock | - | unavailable |
| Yassibel | Agriculture | Livestock | Fishing | unavailable |
| Kiyakdede | Agriculture | Livestock | Fishing | unavailable |
| Gedikli | Agriculture | Livestock | Fishing and forestry | a few |
| Serpil | Agriculture | Livestock | - | unavailable |
| Kirinti | Agriculture | Livestock | - | unavailable |
| Yuvali | Agriculture | Livestock | Forestry | available |
| Yukari Gokdere | Agriculture | Livestock | Forestry | a few |
| Akbelenli | Agriculture | Livestock | Forestry | available |
| Karadiken | Forestry | Agriculture | Livestock | available |

**Table - 7:** Perceptions of local people in the villages against national parks

| Villages | Related to National park | Local perceptions (%) | |
|---|---|---|---|
| | | National park is necessary | National park is unnecessary |
| Belcegiz | Kizildag NP | 50 | 50 |
| Yenikoy | Kizildag NP | 60 | 40 |
| Armutlu | Kizildag NP | 43 | 57 |
| Sarikabali | Kizildag NP | 14 | 86 |
| Golkonak | Kizildag NP | 18 | 82 |
| Celtek | Kizildag NP | 60 | 40 |
| Karayaka | Kizildag NP | 25 | 75 |
| Beykoy | Kizildag NP | 63 | 37 |
| Yassibel | Kizildag NP | 50 | 50 |
| Kiyakdede | Kizildag NP | 54 | 46 |
| Gedikli | Kizildag NP | 0 | 100 |
| Serpil | Kovada NP | 71 | 29 |
| Kirinti | Kovada NP | 0 | 100 |
| Yuvali | Kovada NP | 43 | 57 |
| Yukari Gokdere | Kovada NP | 5 | 95 |
| Akbelenli | Kovada NP | 30 | 70 |
| Karadiken | Kovada NP | 0 | 100 |
| **Total** | | **34.5** | **65.5** |

and continue to damage forest resources. Consequently, Kovada and Beysehir Lake and their environs were declared national parks in order to protect them from negative human impacts. Despite this protected status, natural resources have not been saved from harmful effects of local activities solely by excluding the local population and traditional practices (Alkan, 2009).

**The dependency status of the local public to natural resources and perceptions and attitudes of local public related to the protected areas:** The main means of livelihood for local public that have organic links with the national parks have pronounced difference from village to village (Table 6). When Table 6 is analyzed, it may be thought at first glance that locals do not primarily depend on the forests and that the limitations and prohibitions that are placed on forestry activities will not affect the local public. However, it is well known that the local public has suffered from a considerably big loss of benefits with the limitations and prohibitions made for the use of Kovada and Beysehir lakes since they have been under the national park status. As a matter of fact, the main means of living of the local public is agriculture. In the village, fruit growing is available for development in the areas where the irrigation is possible. However, both lakes are within the borders of the national park which imposes limitations on the use of water for irrigation purposes. Even taking water from Kovada lake for agricultural irrigation purpose is completely prohibited.

Another important loss of benefit for locals prohibited by national parks is nomadic herding. Once a common practice, nomadic livestock cannot be grazed freely as in the past.

Construction of new buildings within the national park is also not permitted. Any kind of hunting activity is also prohibited in the borders of national parks. Hence, the local public has been faced with many losses of benefits from natural resources due to the protected status of these parks.

Studies for solving problems associated with these losses of benefit have not been given government priority. For instance, even though the eco-tourism is anticipated an alternative source of income for the area, and one that research might explore for methods to develop sustainable tourism resources, no development can be made for this, particularly in Kovada lake National Park.

In the context of protected area policy, it was inevitable to discover negative perceptions and attitudes held by local publics. Table 7 displays responses given by local residents to the question: "is it necessary to put the forest resources around the lake and

surrounding under protection as a national park (with today's borders)?" Only 34.5% of the local people have a positive perception for National Parks; the rest have a negative perception. The finding is similar to Badola (1998b). As a matter of fact, in this study, the concept of conservation in general is supported by 38.3% of local people.

The main reasons for these negative perceptions for Kizildag National Park are stated as; the prohibition of fishing in Beysehir Lake, not being able to farm in the areas near the lake, limitations set to animal grazing in the forest and decrease of the income provided from forestry activities. Reasons for negative perceptions at Kovada Lake National Park were similar: the decrease of the income provided from forestry workmanship, limitations set to the nomadic livestock, limitations stated in terms of area use, prohibition of hunting and not being able to take agricultural irrigation water from Kovada lake.

When taken together, lessons learned from these two case studies have demonstrated a conflict in benefits arising from SFM type efforts. In order to determine the appropriate target, strategy and policies for successful SFM, it is necessary to determine the risks that affect or may affect these projects in a negative manner and to discuss the risk factors and solutions hierarchically in terms of applicability of the decisions into practice. There is not a crucial problem faced in determining strategies and politics, taking decisions and harmonizing the legislation for sustainable forestry management and local participation hierarchically in the medium and long run in Turkey. However, there are significant obstacles in terms of application of these decisions and putting these into practice. As demonstrated in our case studies, it is possible that the benefits derived from both economic and ecological dimensions of sustainable forestry management can be in a strong conflict with the social dimension. It is a naively optimistic approach to ask local publics to ignore, or even discard their own benefits and priorities for those that they cannot understand (*e.g.,* ecological benefits) that SFM will provide for them in the long run. If local stakeholders have difficulty in meeting their own basic needs and do not have the required technical information or equipment to support new livelihoods, serious steps towards true SFM will not be realized in a short or medium time frame.

In this context, the necessary prior activities to be carried out for SFM are summarized below:

- Conceptual development of SFM progress in the world has to be carefully pursued.
- Decession makers have to focus on social dimension as well as ecological dimension of SFM. Because, SFM efforts require the participation of the resource user (local people and the other stakeholders) and the recognition of their knowledge all of the planning and practice phases of SFM.
- The local perceptions and attitudes are very important in determining for participation if local people will participate in natural resources management.
- If policy decisions limit the rights of local publics to use a natural resource, the perceptions and attitudes to arise towards the policy will likely be negative. Negative attitudes tend to result in significant delays when putting the strategies and policies into practice that will be developed in the context of SFM. In this respect, negative local perceptions concerning natural resources have to be eliminated.
- A dialogue between resource managers and local stakeholders should be improved with common and local extension/training efforts. In addition this, successful projects may also inspire them.
- It is necessary to eliminate the existing obstacles the decreasing the incomes of local people. And the alternative livelihood sources *e.g.* eco-tourism, non-wood forest products, and other purposes except for forestry activities must be suggested.
- Consequently, in place of the approach connecting with the protection for minimizing the impacts of human, the priority should be given to the approach for minimizing the impacts the resources on human.

## References


Alkan, H. and M. Eker: Orman Kaynaklarindan Faydalanmanin Surdurulebilirligine Dar Olcekli Bir Bakis. (In Turkish). [An Evaluation with Narrow Scale Regarding Sustainability of Benefit from Forest Resources]. Symposium of Chamber of Forest Engineers. (22-24 December) Antalya (2005).

Alkan, H.: Socio-Economic Inventory and Analysis of Rural Settlements in Kovada Lake National Park, Global Environment Facility (GEF) II, Isparta Widespread Area Project (2007).

Alkan, H.: Negative impacts of rural settlements on natural resources in the protected areas: An example from Kovada Lake National Park. *J. Environ. Biol.,* **30,** 363-372 (2009).

Alkan, H., M. Korkmaz and A. Tolunay: Assessment of primary factors causing positive or negative local perceptions on protected areas. *J. Environ. Eng. Landsc. Manage.*, **17**, 20-27 (2009).

Adhikari, M., S. Nagata and M. Adhikari: Rural household and forest: An evolution of households dependency on community forest in Nepal. *J. Forest. Res.*, **9**, 39-44, (2004).

Angelstam, P., E. Kopylova, H. Korn, M. Lazdinis, J.A.. Sayer, V. Teplyakov, and J. To¨rnblom: Changing forest values in Europe. *In*: Forests in Landscapes (*Eds.*: J.A. Sayer and S. Maginnis). Ecosystem Approaches to Sustainability. Earthscan. pp. 59-74 (2005).

Anonymous: Kizildag Milli Parki Tefrik Raporu (In Turkish).[Speration Report of Kizildag National Park]. Forest Ministry, MPGM; Ankara (1993).

Anonymous: II. Ulusal Ormancilik Kongresi Ormanlarinin Yonetimi and Katulim (In Turkish) [II National Forestry Congress-Management and Participation in Turkey's Forestry]. 19–20 March 2003, Proceedings, Published by the Society of Turkish Foresters Ankara. p. 502 (2003).

Atmis, E., S. Ozden and W. Lise: Public participation in forestry in Turkey. *Ecol. Econ.*, **62**, 352-59 (2007).

Badola, R.: Local People Amidst The Changing Conservation Ethos: People Protected Area Relationship In India. Paper presented at the International Semiar on devolution of decentralization of forest management in Asia and the pacific, November 30 - December 4, Philippines. (http://www.fao.org/docrep/003/x6898e/x6898e05b.htm) (1998a).

Badola, R.: Attitudes of local people towards conservation and alternatives to forest resources: A case study from the lower Himalayas. *Biodiver. Conserv.*, **7**, 1245-1259 (1998b).

Colchester, M.: Conservation policy and local peoples. *Environ. Sci. Policy,* **7**, 145-153 (2004).

Davies, E.G.R. and S.K. Wismer: Sustainable forestry and local people: The case of Hainan's Li Minority. *Human Ecol.,* **35**, 415-426 (2007).

Dolisha, F., J. M., McDaniel and L.D. Teeter: Farmers' perceptions towards forests: A case study from Haiti. *For. Pol. Econ.,* **9**, 704-712 (2007).

DOKAP: General Directorate of Nature Conservation and National Parks: http://www.milliparklar.gov.tr/. (2007).

Eeronheimo, O., A. Ahti and S. Sahlberg: Criteria and Indicators for Sustainable Forest Management in Finland, Ministry of Agriculture and Forestry Paintek, Helsinki (1997).

Geray, A.U., H. Alkan, M. Korkmaz and S. Özden: Kizildag National Park Master Plan, (Determination of Socio-Economic Structure of Villages), Ministry of Forestry, MPGM, Ankara (1999).

Guillermo, A.M. and R. Prabhu: Participatory modeling and analysis for sustainable forest management: Overview of soft system dynamics models and applications. *Forest Pol. Econ.*, **9**, 179-196 (2006).

Howell, C.I., A.D. Wilson, S.M. Davey and M.M. Eddington: Sustainable Forest Management Reporting in Australia (2007).

IFR: Isparta Orman Bolge Mudurlugu Kayitlari (In Turkish). [Documents of Isparta Forest Regionalship Documents]. General Diroctarate of Forestry, Isparta (2009).

IUCN: The Durban action plan. Revise version, IUCN, Fifth World Parks Congress., S. Africa, http://www.iucn.org/themes/wcpa/wpc2003/pdfs/outputs/wpc/durbanactionplan.pdf. (2004).

Jobstl, H.A.: Can traditional forestry accounting contribute to measuring the sustainability of a forest enterprise, The Multifunctional Role of Forest. Policies, Methods and Case Studies, International Conference in Padova, April 28-30 (2005).

Kangas, A., S. Laukkanen and J. Kangas: Social choice theory and its applications in sustainable forest management - A review. *Forest Pol. Econ.,* **9**, 77-92 (2006)

Kant, S. and S. Lee: A social choice approach to sustainable forest management: an analysis of multiple forest values in Northwestern Ontario. *Forest Pol. Econ.,* **6**, 215-227 (2004).

Kennedy, J.J., T.J. Ward and P. Glueck: Evolving forestry and rural development: Beliefs at midpoint and close of the 20th century. *Forest Policy Econ*., **3**, 81-95 (2001).

LTDP: Kovada Golu Milli Parki II. Uzun Donem Taslak Gelisim Plani (In Turkish). [Second long term development plan of Kovada Lake National Park (Draft)]. Analytical Phase Report (2007).

Mamo, G., E. Sjaastad and P. Vedeld: Economic dependence on forest resources: A case from Dendi district, Ethiopia. *Forest Pol. Econ*., **9**, 916-927 (2007).

Noughton-Treves, L., N. Alvares-Berrios, K. Brondon, A. Bruner, M.B. Holland, C. Ponce, M. Saenz, L. Suarez and A. Treves: Expanding protected areas and incorporating human resource use: A study of 15 forest park in Ecuador and Peru, *Sustainability. Science, Practice and Policy*, **2***,* 32-44 (2006).

OGM: Orman Genel Mudurlugu Surdurulebilir Orman Yonetimi Kriter and Gostergeler Kilavuzu [Ministry of Forestry, General Directorate of Forestry Sustainable Forest Management Criteria and Indicators Quide]. www.ogm.gov.tr (2005).

ORKOY: Orman-Koy Iliskileri Genel Mudurlugu Hizmet Degerlendirme Raporu (In Turkish). [Ministry of Forestry, General Directorate of Forest Village Affairs Service Evolution Report]. www.cevreorman.gov.tr/orkoy/haber/rapor.pdf (2005).

Ozden, S., H. Alkan and M. Korkmaz: Kizildag Milli parki Sinirlari Icindeki Koylerin Sosyo-Ekonomik Yapisi (In Turkish). [Socio-economic structure of villages in Kizildag National Park]. Rural Environment Yearbook 2001. Ankara. pp. 34-47 (2002).

Pavlikakis, G.E. and V.A. Tsihrintzis: Perceptions and preferences of the local population in Eastern Macedonia and Thrace National Park in Greece. *Landsc Urban Plann.,* **77**, 1-16 (2006).

Purnomo, H., G.A. Mendoza, R. Prabhu and Y. Yasmi: Developing multi-stakeholder forest management scenarios: A multi-agent system simulation approach applied in Indonesia. *For. Pol. Econ.,* **7**, 475- 491 (2005).

Siry, J.P., F.W. Cubbage and M.R. Ahmed: Sustainable forest management: Global trends and opportunities. *Forest Pol. Econ.,* **7**, 551-561 (2005).

Rutagarama, E. and A. Martin: Partnerships for protected area conservation in Rwanda. *The Geographical Journal*, **172**, 291-305 (2006).

Torn A., P. Siikamaki, A. Tolvonen and P. Kauppila: Local people, nature conservation, and tourism in Northeastern Finland. *Ecol. Society,* **13**, 8 (2007).

TUIK: Turkiye Istatistik Kurumu Antalya Bolge Mudurlugu Kayitlari (In Turkish). [Turkish Statistical Institute archives of Antalya District Directorship]. Republic of Turkey. Prime Ministry, Turkish Statistical Institute, Antalya (2007).

Turker, M.F.: Surdurulebilir Orman Kaynaklari Yonetimi Ile Orman Sinirlari Disina Arazi Cikarma Uygulamalari Arasindaki Etkilesim: Mevcut Durum, Yasanan Darbogazlar ve Cozum Onerileri (In Turkish). [Interaction between forest resources management and applications of removing the borders of the forest land outside; actual situation, the bottlenecks experienced and solutions]. Panel on Problems in the Application and Evaluating Article 2/B of Forest Low, Ankara (2003).

Vedeld, P., A. Angelsen, J. Bojo, E. Sjaastada and G.T. Berga: Forest environmental incomes and the rural poor. *For. Pol. Econ.,* **9**, 869-879 (2007).

Wolfslehner, B. and H. Vacik: Evaluating sustainable forest management strategies with the Analytic Network Process in a Pressure-State-Response framework. *J. Environ. Manage.,* **88**, 1-10 (2008).