

## Impacts on Nomadic Livestock of Strict Nature Protect Efforts: An Example from Isparta-Egirdir Region, Turkey

Hasan Alkan and Mehmet Korkmaz  
Faculty of Forestry, Suleyman Demirel University, 32260-Çunur, Isparta, Turkey

**Abstract:** Many areas were allocated by various laws as protected area for conservation of natural resources in Turkey. However, the practice has caused the benefit loss that happens by reason of the prohibitions and limitations for the local people who are mainly living forest villages. As local people are an important entity of protected area and their activities (e.g., livestock, farming, etc.) are directly concerning conservation of forest and others, it is necessary to give focus on their interaction with the nature. In this study, relations between nomadic livestock and nature conservation efforts were discussed by example of Egirdir Region. Field survey was carried out to collect information in each village using interviews from 2007-2008. According to results of the study nature conservation efforts have caused to benefit loss in term of nomadic livestock in the Egirdir Region as well as Turkey. Besides, villagers haven't been adequately supported in term of alternative livelihood resources, until now. Thus, negative local perceptions have come out concerning protection efforts.

**Key words:** Nature conservations, protected area, nomadic livestock, Egirdir, Turkey

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### INTRODUCTION

In the world, >1.6 billion people depend on forests in terms of various purposes. Some 350 million people who live within or adjacent to dense forests depend on them to a high degree for subsistence and income (Adhikari *et al.*, 2004; Torn *et al.*, 2007; Vedeld *et al.*, 2007). Local people have legally and illegally used these resources for their everyday needs such as firewood, timber for shelter, non-wood forest products, foods, water, medicine, livestock propose like fodder, grazing etc. (Dolisha *et al.*, 2007; Mamo *et al.*, 2007; Tolunay *et al.*, 2007).

Turkey is a mountainous country with regional climatic differences. The total area is 779.452 km<sup>2</sup> of which 6500 km<sup>2</sup> occupied by inland waters. Fifty two percent of 20.7 million forest areas are in degraded and unproductive condition. Ninety nine percent of forests are belonging to state (Konukcu, 2001). Twenty five percent of inhabitants in Turkey have lived in rural areas (TUIK, 2009). Rural people can be divided into 2 groups, namely forest villagers and others. Approximately, 7.6 million people live in 20,482 forest villages located in or adjacent the forested areas. A villager's annual income is about 400 \$USD (TNFP, 2004). The nomadic livestock sector is an important source of income for local people. It is accepted as an important traditional and cultural value by local people named Yoruks, as well. These people have lived as nomads. Their herds graze pasture land and forest.

Particularly, kermes oak scrublands are accepted grazing range covering >2.4 million hectare in Turkey (Tolunay *et al.*, 2009a).

On the other hand, nature conservation studies have been continued for a long time period in the world. In developing countries, there is the conventional preservationist or isolationist approach which tends to favour centralized power in order to discourage resource use by local public (Badola, 1998; Rutagarama and Martin, 2006). The conservation by strict rules can generally cause the benefit loss that happens by reason of the prohibitions and limitations for the local people who are the users of this resource (Davies *et al.*, 2007). Particularly, overgrazing is accepted as important factor that contributed to forest degradation and subsequent soil erosion and biodiversity loss in Turkey.

Thus, nomadic livestock have been prohibited by various forestry laws in protected areas. Besides, General Directorate of Forestry, in its action Plan for reducing damage caused by ordinary goats, prepared in 2008, made a number of decisions considering ordinary goat the decreasing of goats. However, some people who are caught grazing ordinary goats in state forests and are ruled to have committed an offence, in spite of prohibitions (Tolunay *et al.*, 2009b; Ozdonmez *et al.*, 1996). Consequently, livestock have been negatively affected by the actual protected area policies as it is

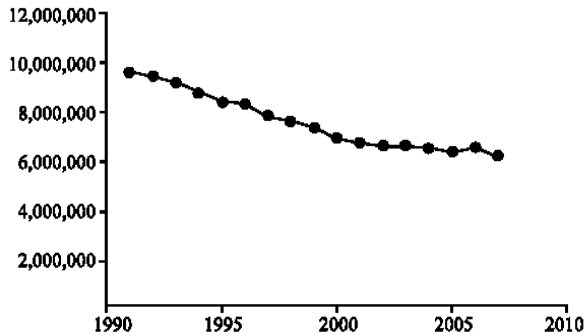


Fig. 1: Changing of ordinary goat population in Turkey

forbidden by forest law to raise small cattle and goats within protected areas and in the forests in many areas. Especially, ordinary goat population has rapidly decreased in our country (Fig. 1).

Most of village in Egirdir was founded by Yoruks. The main reason that these people moved from nomadic life to settled life and built village in this district is that this district is suitable for nomadic livestock (particularly ordinary goat breeding). However, declared of many areas as protected area depend on nature protection endeavors have caused decreasing of nomadic livestock production. In some villages, nomadic livestock is no longer carried out as well. According to Alkan *et al.* (2009), after declared as national park of Kovada Lake and its environs, 55% of public are to be exposed to benefit loss in term of livestock.

The prohibition of nomadic livestock completely by reason of a national park in the area has an important effect in the creation of negative perceptions and hostile behaviors on the Park. Besides, in general, the wide spread opposition of forest villagers to restricting livestock from degraded forest lands selected for reforestation and erosion control, is a major obstacle to reforestation activities.

In this study, we discussed interactions between nomadic livestock and nature conservation efforts by example of Isparta-Egirdir Region. Besides, we defined problems of nomadic livestock connected with nature protected efforts as well. Because it is obvious that the local people will not support the protection efforts in such cases that the negative perceptions stand out for the protect efforts, if local interests loss are satisfied. And then hostile attitudes arise related to the resource that is taken under protection.

## MATERIALS AND METHODS

**Study sites:** The study was carried out in Egirdir Country of Isparta Country, located in southwestern Turkey (Fig. 2). Because in this district,

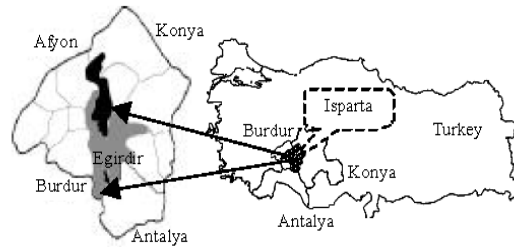


Fig. 2: Study sites

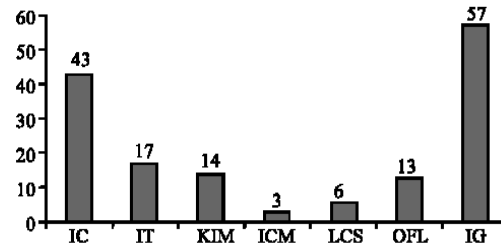


Fig. 3: Offences dispersion averages (10 years) in Egirdir\*, (\*IC: Illegal Cutting, IT: Illegal Transport, KIM: Keeping Illegal Material, ICM: Illegal Consumption Material, LCS: Land Clearing and Settlement, OFL: Occupation of the Forest Land, IG: Illegal Grazing)

- Most of villages were established by Yoruks. These people moved from nomadic life to settled life and built village is that this district is suitable for nomadic livestock
- As, especially ordinary goat breeding is accepted as an important cultural value by Yoruks. There are strict rule and limitations regarding ordinary goat breeding owing to many protected area
- According to registration of forest administration (last 10 yearly average values) illegal grazing is the most considerable offence type within forestry offenses, in Egirdir Forest Directorate as similarly Isparta Regional Forest Directorates (Fig. 3). In addition this, illicit grazing offences have still continued in spite of stiff conservation endeavors (Fig. 4)

There are 29 settlement units of which 1 county centers, 4 small towns (Sariidris, Barla, Pazarkoy ve Gokcehoeyuk) and 24 villages in the Egirdir. In this study, survey was carried out at 24 villages shown in Table 1.

**Data collection:** Primary data was collected by means of survey. The survey was designed to collect information from individuals and groups in each village using structured and semi-structured interviews. In addition, the

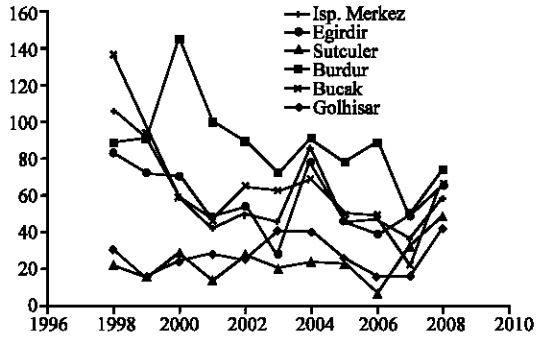


Fig. 4: Dispersion of illegal grazing offences (as amount) in Isparta Regional Forest Directorates

Table 1: Population and household numbers of the researched villages in Egirdir

Village	Population	Household numbers
Agilköy	815	190
Akbelenli	131	38
Akdogan	658	175
Akpınar	199	49
Apağı Gokdere	413	125
Bademli	288	102
Bagacik	574	120
Bagilli	903	365
Balkiri	881	152
Caykoy	921	230
Beydere	236	80
Eyupler	287	90
Bagören	268	135
Yuvali	1165	260
Serpil	659	150
Sevincbey	238	70
Sipahiler	304	120
Sorkuncak	1356	300
Tepeli	643	180
Yilgincak	124	32
Yukari Gokdere	1250	360
Kirinti	350	90
Mahmatlar	595	180
Havutlu	98	48

reports at the end of the several meetings have been used as well. Existing literature and secondary data such as district and province maps and reports, plans, etc. have also been investigated as other materials in this study.

The survey forms which are prepared to obtain information on many subjects such as social, economic, demographic, cultural features of rural settlements, their perceptions of the forests, nomadic livestock, etc., are completed by using a face to face interview method. The questions given in these forms have been prepared according to the rules concerning how the questions in question forms should be formed. The questions were especially directed towards head of family.

Ten percent of total household number was used to calculate main mass size. There are 4053 houses including vacancy in the research area (Table 1). We conducted the

survey with 372 people as we aimed to complete a survey with at least 10% of the subjects for each village out of the total number of occupied houses in the village.

In addition to this, the two different semi-structured interview forms have been used in the study as well. The first form was used when interviewing village managers, while the second form was used in interviews with forest officers and other government agents.

**Data analysis:** The data were analyzed by means of frequencies (percentages) using the SPSS (Statistical Package for Social Science) 15.0 statistical package and ms excel software.

## RESULTS AND DISCUSSION

**Some socio-economic feature of rural settlements:** Rural people in Turkey can be divided into two groups, namely forest villagers and others according to 6831 numbered Forest Law. About 91.7% of researched villages are forest village statute.

The areas suitable for nomadic livestock had a significant role in the formation of the first settlements in the area. With the development of fruit growing, the areas that had irrigation facilities were chosen for the new settlements. Turk-Islamism culture has dominated in the region.

In our country, as the rural settlements are not developed socio-economically there is a wide migration from these settlements to the big cities. As Egirdir Lake particularly enables the development of irrigated agriculture and fruit growing, the economic contributions of it to the area has made a difference to the migration issue. For the purpose of presenting this issue scientifically in the study, we used these questions: Are there migration person your family to big city and other settlements? and lately, are you thinking immigration to another settlement? About 36.8% of the people answered the first question as yes and 84.9% of them answered the second question as certainly no.

The area being economically developed has increased the importance of education as the literacy rate (90-100%) in the area is 20-25 points above the average of rural areas of Turkey.

Many substructure and super structure deficiencies which stand out in many rural settlements in Turkey are not common in this area. Except in the quarters of the villages which have scattered settlements, they are not faced with problems in terms of transportation, electricity and telephone. Although there are facilities such as a school and village clinic in rural settlements; there are personnel and material insufficiencies. The main substructure problem in the area is that it does not have a sufficient drainage system.

While it is looked at Turkey in general, the basic living source for the rural people is forestry operations (Acun and Geray, 1980). However, the agricultural activities (especially fruit growing) are the basic living income in the region (Table 2). The products such as apples, cherries and peaches etc. that are produced in the area are exported to foreign countries.

The district has a significant potential for the fishery because of Kovada and Egirdir Lakes. However, fishery is prohibited in these Lakes, recently.

Rug weaving is an integral part of the local culture and has been an important source of income for local people for generations, primarily for women. However, the rug business has been in decline since the mid 1980s due to competition for labor with orchard production and to decreasing rug prices that have resulted from competition with machine-made carpets.

Egirdir is one of the leading tourism centers. Having historical and cultural values with 2 lakes, the reach flora and fauna structure are the basic reason of this. However, tourism and ecotourism have not been done as an economical occupation for local public.

Also the government employs the people living in these villages for forestry operations such as timber harvesting, afforestation acts, nature conservation efforts, etc. Forestry activities which decrease day by day are an important source of income particularly for some villages of Egirdir for timber harvesting was prohibited in protected areas according to Forest and National Park Laws.

**Nature protected efforts (forests and protected areas) and nomadic livestock:**

As can shown in Table 3, the proportion of the forest area in Egirdir is 110,089 ha. Region is very rich in term of natural resources like forest and watery lands. In Isparta Regional Forest Directorate, there are 95 amount (154.817,25 ha) protected areas according to defined various laws. But, prohibit and limitation regarding nomadic livestock especially is interested in National Park Law numbered 2873. According to this law, protected areas of Isparta Regional Forest Directorate are shown below:

- National parks: Kizildag National Park and Kovada Lake National Park
- Nature conservation areas: Kasnak Oak Nature Conservation Area and Oriental Sweetgum Forest Nature Conservation Area
- Nature parks: Yazili Kanyon Nature Park, Golcuk Nature Park and Gelincik Mountain Nature Park
- Nature monument areas eg. Barla Sedir Agaci, Sogut Yaylasi Ulu Ardic, etc.

Kovada Lake National Park (6354 ha) and Kasnak Oak Nature Conservation Area (1300.5 ha) are within Egirdir County. Besides, The county has borders to Yazili Kanyon Nature Park and Kizildag National Park. Long term development plan of these protected areas have not still applied as sufficient.

Table 2: Agricultural structure

Settlements	Total agriculture area (ha)	Arable areas (ha)		Vegetable areas (ha)	Orchards (ha)	Grabe area (ha)	Olive grove (ha)
		Planted	Fallowing				
Egirdir	21490	4646	1241.0	178.2	3629.0	31.0	-
Isparta (Total)	251282	131672	23315.5	5116.9	24427.2	6861.9	240.1

Table 3: Structure of forests

High forest (ha)			Coppice forest (ha)			Total (ha)		
Productive	Much degraded	Total	Productive	Much degraded	Total	Productive	Much degraded	Total
39,285	63,672	102,957	691	6,441	7,132	39,976	70,113	110,089

Egirdir State Forest Enterprises

Table 4: Animal's numbers in the researched settlements

Village	Goat population	Sheep population	Cattle population	Village	Goat population	Sheep population	Cattle population
Agilkoy	136	11	196	Bagoren	1261	160	227
Akbelenli	1050	210	36	Yuvali	1941	250	394
Akdogan	1864	160	252	Serpil	315	331	141
Akpinar	512	45	106	Sevincbey	351	45	136
A.Gokdere	450	135	101	Sipahiler	210	185	133
Bademli	980	810	95	Sorkuncak	580	45	312
Bagacik	2100	400	595	Tepeli	300	25	154
Bagilli	278	150	490	Yilginca	-	61	55
Balkiri	1205	58	150	Y.Gokdere	767	800	190
Caykoy	843	105	192	Kirinti	140	-	118
Beydere	1040	217	90	Mahmatlar	965	15	218
Eyupler	481	62	113	Havutlu	410	250	69

Field research

Nomadic livestock are directly related to conservation of forest and other natural resources, it is quite necessary to give focus on interaction with the nature (Pandey and Chetri, 2005).

The livestock in the region is done as stable livestock and nomadic livestock (goat and sheep-keeping) are done. Poultry farming and apiculture (beekeeping) are generally deal to fulfill the individual needs. Table 4 has shown to animal's numbers in the villages.

Overgrazing with ordinary goats is an important factor contributing to forest degradation. Besides, according to last 10 yearly average values, illegal grazing is the most important offence type within forestry offenses, in Egridir Forest Directorate (Fig. 3) as similarly Isparta Regional Forest Directorates and Turkey.

In this respect, nomadic livestock is forbidden to protected areas and many forest areas. In addition this, the ordinary goat fatten can be tried to exchange with the sheep and stable livestock fatten and the pressure is applied on villagers in this way. The drop out the fatten of the ordinary goat is supported by General Directorate of Forest-Public Relationship (as known the ORKOY). ORKOY is the preeminent institution for the supporting of the forest villagers. Since 1974, ORKOY has disbursed around \$150 million (1996 prices) of which 70% was allocated for the development of livestock mainly through the provision of infrastructure (barns) and improved dairy and cattle. Beekeeping received another 10%. Over the past 20 years, about 240,000 families have benefited, or about 15% of the total forest village population (Bann, 1998). Recently, ORKOY has not worked

effectively because of lived financial bottleneck and changes about organizational structuring. However, ORKOY had given support to villagers various purposes (Table 5).

As can be shown in Table 4 and 5, despite various supports sheep fatten is not preferred production type as much as ordinary goat for Yoruks. This production type decreases day by day although it is supported by ORKOY in different times.

As can shown in Table 6, 59.7 of the villagers said that they have not done nomadic livestock. The rest are dealing with livestock for various purposes.

For determine the characteristic of livestock in the study, we used this question: What is doing kind of livestock?

This question is answered as stable livestock (26.9%), together stable and nomadic livestock (5.2%) and 8.1% nomadic livestock by the local people which deal with livestock. When asked, Do you going to plateau for livestock? most of local people (95.4%) are answered as No in this question. Plateau owner villages are Yukarigokdere, Akbelenli, Akdogan, Eyupler, Balkiri, Bagoren and Bagacik villages. The primary plateaus are used by owners are Beskuyu, Cavus area and Belkuyu, etc.

When asked, Are there sufficient pasture lands in your village? Most respondents (71%) stated that there are not sufficient lands for pasture. The rest have answer as partly (7.3%) and yes (21.8%). In addition this, 86.3% of local people stated that epidemic is not widespread in the region.

Table 5: ORKOY supports

Villages/ supports	Livestock supports (Support years)					Other supports: Carpet, Furit growing, Roof cover, Heat-cook, Motorized saw (Support years)
	Milk cattle	Sheep-milk sheep	Chicken	Apiculture	Flesh cattle year	
Kirinti	1978	1985	1978	-	1977	1975, 1976, 1977, 1978
Serpil	1978	-	-	-	-	1977
Yuvali	-	1988, 1985	-	-	1979	1976, 1977
Y. Gokdere	1976	-	1978	1977	-	1977
Akbelenli	2003	-	-	-	-	1976, 1977
Akdogan	1977, 1988	1986	-	-	-	1975, 1977
Asagi Gokdere	-	1992	-	-	1995	1976, 1977, 1978
Agilköy	1994	-	-	-	-	-
Bademli	1976, 1995	-	-	1977, 1993, 1995	-	1977
Bagilli	1987	-	-	-	1978	1982
Balkiri	1978	-	-	-	1978	-
Beydere	1983	-	-	-	1983	-
Çayköy	1987	-	-	-	-	1996
Havutlu	-	-	-	-	-	1983, 1984, 1985, 1986, 1987
Sevinçbey	-	1986	1978, 1986	-	-	-
Sipahiler	1986	1989	-	-	-	1976, 1977, 1978
Sorkuncak	1980	-	-	-	1980	-
Tepeli	-	-	-	-	1978	-
Akpinar	1980, 1996	-	1977	-	-	1976, 1977

Field research and ORKOY registration

For determine the success of ORKOY supports, we used these questions: Do you have support from ORKOY? and Is this support has been useful to you? Both of them are evaluated together and answers are shown in Table 7.

The supports related to the livestock by ORKOY haven't achieved its goal. Alkan and Dincay (1998) stated, in Isparta Country, 69% of households which they supported by ORKOY left supported job.

In briefly, livestock (especially nomadic livestock) is decline in the region owing to negative impacts of nature protect efforts. However, the recession is depending on macro problems concerning livestock as well. As a matter of fact, in the region, there are important marketing problems in terms of animal products such as milk, flesh, cheese, etc.

For instance, the dairy products are usually cheese which is used for milk production or is consumed as milk. The development cooperatives don't do necessary enterprise on collecting the dairy products and their evaluation.

For that reason, although the value of the goat milk and cheese is known, it is sold with very cheap price. In addition this, the animals which are grown for their meat is sold alive in all the villages. Selling by cutting is not common.

So this will cause the decrease in the income which will come from the livestock. In a sense, the added value of sold animals as a raw material will go out of district. It

can be better to sell processed meat and meat products rather than selling it alive animal for keeping the added value in the basin.

Another reason that livestock production is decreasing, especially small cattle production, is the recent increases in area planted to orchards.

In this study, some questions were used for determined to local perceptions connected with nature conservation (Table 8).

The limitations of the benefits and prohibitions especially on the protected areas affect the villagers' approaches to forest lands in a negative way. As a consequence of this, forest offenses have still occurred in these areas.

That is local people sometimes benefit from the forests and other natural resources as illegal way. For instance, Table 9 have summarized to grazing offence in Turkey, Isparta Forest Regional Ship and Egirdir State Forest Enterprises.

**Table 6: Livestock situation and purposes**

Are you doing livestock?	Number	(%)
No, I haven't got sheep or goat	222	59.7
Yes, for individual necessity	114	30.6
Yes, for marketing	36	9.7
Total	372	100.0

**Table 7: Usage of ORKOY supports and success situation**

Answers	Number	(%)
No, I did not receive support	347	93.3
Yes, I received support and it was useful	5	1.3
Yes, I received support but it was not useful	20	5.4
Total	372	100.0

**Table 8: Local perceptions in term of nature conservation efforts in the region**

Questions/answers	Yes (%)	No (%)	Don't opinion (%)
Was future of your villages from destruction of environs forests?	90.1	5.1	4.8
Do you think environs forests will be extinction in future?	36.8	59.4	3.8
What do you think about taking under protection of some areas in the region as a national park, nature management, etc.? or Do you agree that the protection of natural resources in your region?	58.3	37.1	4.6
Are there any problems with Regional Forest Administrations? or Have you had any problems with these people?	8.1	91.9	-
What would your opinion be, against this statement? Environs of your villages are occupied to forests. Our agricultural areas and pasture lands will more than If, forests are not. And life is easier more than	21.0	64.5	14.5
Are you satisfied with the nature conservation efforts in your region?	58.3	37.1	4.6

**Table 9: Annually illicit grazing offences in the Egirdir, Isparta and Turkey**

Grazing offences	Years										
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Egirdir</b>											
Offence numbers	83	72	70	48	54	28	78	46	39	49	40
Animal numbers	3668	3900	9991	2678	4879	1231	6071	1015	556	1089	2177
<b>Isparta</b>											
Offence numbers	446	-	386	278	311	268	388	269	247	206	-
<b>Turkey</b>											
Offence numbers	6626	-	5280	3281	3051	2726	3720	3758	3025	3356	-

## CONCLUSION

In the researched area, Nomads named Yoruks have played an important role in the foundation of settlements. They have started settling in certain villages for along time.

The ordinary goat production is a cultural and traditional value for them. The main reason that these people moved from nomadic life to settled life and built village in this district is that this district is suitable for nomadic livestock. As result, traditional nomadism as a production system no longer exists in the region. Besides, Isparta and mountainous areas formed by South-West Taurus Mountains are the important places about nomadic livestock. The livestock sector is an important living source and cultural value for the region.

On the other hand, Egirdir and its environs are very rich in terms of natural resources such as forest and watery lands. So many areas have been declared as protected areas. And grazing is forbidden by forest law to raise small cattle and goats within protected areas and in the forests in many areas. Local people who live in or next to protected areas have affected from this prohibition in negative way. Livestock has decreased day by day in the region. For instance, after declared as National park of Kovada Lake and its environs, 55% of local people are to be exposed to benefit loss in term of livestock (Alkan *et al.*, 2009). Nevertheless, the studies could not be made related to alternative income source for the people as well. Consequently, the negative pressure has increased on the protected areas and forests. 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.

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