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Full Length Research Paper

Attitudes and perceptions of rural people towards forest protection within the scope of participatory forest management: a case study from Artvin, Turkey

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Protection of forest resources is one of the preconditions of receiving sustainable benefit from these resources, particularly in countries where forests are state-protected. For the purpose of ensuring an effective forest resources management, it is a must to have an idea about the characteristics of local people who have a close interaction with forests along with local people's perspectives, suggestions and ideas concerning forests and state forestry organization. Based on a participatory approach, the aim of this study was to determine the characteristics such as education, age, length of residence, etc. of the forest villagers in Turkey and the relationship between their perspectives, suggestions and attitudes towards forests and forest protection practices. In this study, face-to-face survey was conducted amongst 385 people residing in 32 forest villages in the province of Artvin. The study concluded that highly educated people, young individuals, the ones who have not been residing for a long time in the village and the ones who have had a professional work experience in forestry works are more oriented to speak out the deficiencies and problems in forest protection system than those who are less educated, the elderly ones, the ones who have been living for a long time in the village and the ones who have never worked any forestry related jobs. They are convinced that state forestry organization is not successful enough in terms of forest protection. It has been detected that under-educated villagers in particular and the ones with low income were inclined to take illegal advantages of forests and thus, they have had legal conflicts with state forestry organization. In terms of managing and protecting state-owned forests, it has been understood that villagers are more willing to protect forest resources through a participative and cooperative approach together with state forestry organization instead of protecting, benefiting or managing forests by themselves.

Key words: Forest villager, forest protection, participation, Turkish state forestry organization.

INTRODUCTION

One of the preconditions to ensure the sustainability of benefiting from forests or achieve the sustainable management of forests is protecting these resources. The countries that have adopted sustainable forestry approach in particular pay special attention to forest protection. Within this context, forest protection has been recognized as one of the objectives of national forestry in Turkey (DPT, 2007).

Almost 99 percent of the forested area in Turkey which has 21.4 million hectare forests is controlled, protected and managed via General Directorate of Forestry (GDF) which owns a large rural organization expanding along the entire country, founded by the state (OGM, 2006 and 2010). Nevertheless, in many developing countries including Turkey, the state lacks the efficiency to protect forest resources. In those countries, although the state owns the forests, people who live in it still take advantage of forests freely and give damage insensibly. These damages are attributed to the population pressure in rural areas, insufficiency of financial resources for forest protection and a common belief that forests are free re-

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sources of benefit to be shared amongst people (Oksanen et al., 1994; Başkent et al., 2005; DPT, 2007 and Barlı et al., 2006). In Turkey, majority of problems such as forest fires, pesticides and toxic fungus, illegal uses and pollutants that state forestry organization (SFO)* faces are both individual and society rooted. At this point, forest villagers who constitute the poorest section in rural population and who have closer relations with forests and SFO need to take one step forward (Geray, 1998; Tolunay and Alkan, 2008). Currently in 20,726 villages where forests are inside or nearby, a total of 7.7 million forest villagers reside in it (DPT, 2006).

In Turkey, according to the forestry law (law #6831), forest villagers have privileges such as low-cost wood and priority in employment at forestry related jobs (Düzgün, 2003; Tolunay and Alkan, 2008). Yet, rural poverty remains to be an unsolved problem, since the conflict between forest villagers and SFO has been continuing for many years. As stated by Barlı et al. (2006) as well, in Turkey, the conventional forestry management system has fallen short in enabling the participation of the public into forestry management practices, and this led to the rise of conflicts between SFO and forest villagers.

De Montgolfier (2005) points out that in all countries, particularly in Mediterranean countries of which Turkey is a member, applied control methods fail to provide effective management and protection of forests in the face of turmoil met during forest resources management. In the same manner in Turkey too, for a long time, an attempt has been made to achieve the protection of forests through taking military precautions against forest villagers. As a consequence, deficiencies in forest protection system, forestry practices of SFO that is hostile towards villagers (Türker and Ayaz, 1998) and communication problems with villagers have given rise to the damage of forest resources. Indeed as emphasized by Makarabhirom (1999) and Ali et al. (2006), such policies and practices that are state managed and protected, which play down the views of locals and follow a non-participatory approach may drive local people to adopt a negative attitude towards forests and SFO.

There have been many studies hitherto analyzing within the scope of relations between SFO and rural people. The perspectives and thoughts of local people depend on demographical and socio-economic variables (age, education, economic status etc.) towards forest management and protection practices, and focus on issues regarding social participation in forest management and protection (Badola, 1988; Oswalt and Baral, 2000; Şenyaz et al., 2005; Robertson and Lawes, 2005; Xu et al., 2006; Kalu and Izekor, 2006 and Dolisca et al., 2007). For instance, within the scope of participatory forest management program, Rishi (2007) conducted a behavioral analysis study among 110 people in 14 villages in Madhya Pradesh State of India. This study concluded that rural people have a positive attitude towards forest management and protection activities, yet they have no clear attitude regarding the functionality of forestry commission.

Nowadays, the models that are based on the participation of local people during the process of forest resources management and protection are the perspectives value and attitudes of local villagers living inside or nearby forests (Mai, 2009), which are becoming more trendy.

The main purpose of this study was to determine the characteristics such as education, age, length of residence, income of the forest villagers who has the closest relation with forests in Turkey, and relationship between their perspectives, suggestions and attitudes towards forests and forest protection practices. Furthermore, through a participatory approach, it is aimed to detect perceptions and suggestions encouraging the affectivity of forest protection practices; hence, developing certain insights that can illuminate decision-makers.

RESEARCH METHOD

The research area is located in Artvin (41°10' N, 41°48' E), the northeast of Turkey (Figure 1) and covers 712,590 ha in which more than half of the area are very well forested (393,165 ha) (AFRD, 2009). Artvin province was selected due to forestry activities that are more important than those of other regions of Turkey. In the research area, the forests are owned and managed by the state agency, Artvin Forest Regional Directorate (AFRD) which consists of six forest district directorates (FDDs) (Table 1).

Considering the State Institute of Statistics data (SIS, 2001), the total population of Artvin province is 191,934, half of which consists of forest villagers (92,709). There are 309 villages within the research area and all of these are forest villages where the forests are benefited legally and illegally.

According to Gross Domestic Products (GDP) values in constant prices 2001, Artvin has 288 billion TL GDP of which 4.7% comes from the forestry sector, while this rate is 0.6% for the entire Turkish national economy (SIS, 2005). In other words, the forestry sector in Artvin is more important than that of Turkish national economy.

The sample size of 383 forest villagers was selected based on the main 92,709 population size. Deliberate sampling method was used to determine the number of samples for each FDD based on population density, annual crime rate and research funding. For the sampling design, two leveled simple random sampling method (SRS) with a random start was used to determine what villages (primary sampling units, psu) and villagers (secondary sampling unit, ssu) were interviewed (Karasar 1994; Altunışık et al., 2005 and Barlı et al., 2006).

Calculated numbers of surveys have been conducted within 32 forest villages selected from FDDs indicated in Table 2 among forest villagers that are randomly selected via face-to-face interview method. In advance, through pre-surveys that have been conducted in the research area, 21 close-ended questions were prepared for the research objective. Some questions were based on yes-no format, while others include possible alternative answers for respondents. Questions related to respondents' perceptions was judged according to a symmetric five-point Likert scale (1= absolutely no to 5= absolutely true) with a central neutral point (Likert, 1974). The following issues were investigated throughout the questionnaire study:

* General Directorate of Forestry and its rural organization units (27 Forest Regional Directorate, 217 Forest District Directorate and 1316 Sub-District) were implied.

Figure 1. Location of the study area in Turkey.

Some socio-economic and demographic information of the respondents, that is, gender, age, educational level, residence length in village and income resources.
Respondents' perspectives and attitudes towards forests and forestry organization.
Respondents' perceptions and suggestions encouraging the affectivity of forest protection practices.
The surveys were conducted in July 2007 and lasted 30 days. Out of 387 forest villagers, only 385 surveys taken were valid.

In data analysis via SPSS®, 15.0 for Windows® software mod, median, arithmetic average, standard deviation, Kolmogorow-Simirnow, correlation analysis, Spearman correlation, Kruskal Wallis and Man-Whitney U test (Özdamar, 2004; Altunışık et al., 2005) have been employed. Herein, statistical significance level has been taken as 5%.

In order to verify whether data distribution attained via surveys is normal, Kolmogorow-Simirnow test has been conducted. Since the distribution of variables were not normal ($p < 0.05$) in almost all of them, the necessity to employ non-parametric techniques in analyses emerged. To measure whether more than two groups indicated a meaningful differentiation with respect to a dependent variable, Kruskal Wallis H Test-nonparametric equivalent of Anova test has been employed. Man-Whitney U test has been used to detect if there was a statistical difference between the values of two groups within the frameworks of working experience in forestry and age groups.

RESULTS AND DISCUSSION

Demographical characteristics

The fact that almost all participants of research are males (93.2%) is because there are certain obstacles in persuading women to take part in such a research. As stated by Barlı et al. (2006) and Rishi (2007) as well, male dominancy in rural areas and traditional culture that encompasses some social restrictions for women take role in this outcome.

Approximately one third (31.7%) of the survey participants is composed of over middle aged individuals within 46-60 age group. Of the participant villagers, nearly half of them (46.2%) are secondary school, high school and above graduates; more than half (51.4%) are primary school graduates and 1.8% are illiterates (Table 3).

On the other hand, there is an opposite and meaningful relationship ($r = -0.310$, $P<0.01$) between educational levels and residence length of villagers. In other words, the ones temporarily residing in the village have higher educational levels.

More than three-fourth (76.9%) of the survey participants are made up of villagers permanently residing in the village. Primary, secondary and third basic income resources of the subjects are in turn; wage-pension (47.8%), agriculture and stockbreeding (68.3%) and forestry (47.4%). Additionally, around two thirds (66.5%) of villagers stated that they had difficulty in living with their present income. Due to poverty, local people pose pressure over the forests they live in or nearby, and this eventually leads to a conflict between local people and SFO.

Perspectives of villagers on forest entity and relations with state forestry organization

When the subjects are asked whether province of Artvin

Table 1. The number of forest villages in research area and their population.

Forest district directorate	Number of forest villages	Population
Ardanuç	49	9,199
Arhavi	59	18,197
Artvin	36	11,415
Borçka	44	17,289
Şavşat	62	16,240
Yusufeli	59	20,369
Total	309	92,709

Table 2. Descriptive statistics on research.

	Mean	Median	Mode	Std. Dev.
Demographical variables				
Gender	1.0675	1	1	0.2513
Age(year)	2.3532	2	3	0.9999
Educational level	3.7714	3	3	1.0896
Length of residence in the village	3.5377	4	4	0.9461
Primary source of income	3.2390	4	4	1.4524
Secondary source of income	1.7097	1	1	1.2266
Third source of income	2.8947	2	2	1.5237
Perspective on income	2.2156	2	2	0.6943
Perspective on forest entity and relations with state forestry organization				
Is Artvin rich in terms of forests?	1.3525	1	1	0.7509
What is the future of Artvin in terms of forest entity?	2.3828	3	3	0.9651
What is the reason accounting for the pessimistic view concerning the future of forests in Artvin?	3.3125	3	1	2.0536
The operational condition of forestry practices for the last 10 years	1.1890	1	1	0.3920
Legal disputes with state forestry organizations	1.0805	1	1	0.2724
The nature of lawsuit	1.7419	1	1	1.2902
The effect of lawsuit between state forestry organization and villager on forest protection	2.2545	3	3	1.0194
The view related to self-interest oriented acts of state forestry organization employees	1.4208	1	1	0.6120
Perspective on forest protection				
If there is any forest damage in the village	1.2364	1	1	0.4607
Primary cause of forest damage in the village	5.8690	5	9	3.2068
Secondary cause of forest damage in the village	5.2619	5	4	2.4600
Third cause of forest damage in the village	4.2308	3	1	2.8622
Effectiveness of forest protection practices	1.7240	2	2	0.5377
Primary cause of the ineffective forest protection	2.8780	1	1	2.7893
Secondary cause of the ineffective forest protection	4.4545	4	3	2.3999
Third cause of the ineffective forest protection	4.0682	4	3	2.1502
Primary activity to achieve forest protection	2.7239	1	1	2.1179
Secondary activity to achieve forest protection	4.1170	4	5	1.7567
Third activity to achieve forest protection	3.7029	4	1	2.0546
Perspectives on forest protection system*				
Artvin FRD is successful in regard to its current forest protection system and practices and should continue as well.	3.6000	4	5	1.6429
The main problem in protecting forests stems from irresponsible officials in charge of protection	3.2917	4	4	1.3987
The main problem in protecting forests stems from state forestry organization itself.	3.2104	4	5	1.5444
There are certain defects in Artvin FRD's forest protection practices and should be remedied	3.1024	3	5	1.5551

Table 2. Contd.

Artvin FRD is absolutely a failure in terms of forest protection practices and protection system needs to be changed thoroughly.	2.4130	2	1	1.6515
The main problem in protecting forests stems from self-interest oriented acts of officials who play deaf in the face of illegal exploitations.	2.2909	1	1	1.6277
Suggestions to solve forest protection issues *				
Forests should be cooperatively protected together with state forestry organization and forest villagers.	4.8364	5	5	0.5417
Particularly in protecting forests near villages, state forestry organization should cooperate with local villagers thus create an employment opportunity for villagers as well.	4.7474	5	5	0.7622
Stricter and more deterrent precautions need to be taken in protecting forests	3.6875	4	5	2.6475
Artvin FRD needs extra vehicle and personnel for its current protection system.	3.5684	4	5	1.3699
Solely, management and protection activities of forests should be left to the hands of legal entities in village.	3.1536	4	5	1.7671
Solely, the protection of forests should be left to the hands of legal entities in village.	2.9582	3	1	1.7822
Ownership and management of forests should be allocated to legal entities in village or cooperatives founded by villagers.	2.6780	2	1	1.7875
In forest protection, cooperatives should be given responsibility when available.	2.5890	2	1	1.7332

*Responses given to the deductions: 1) Absolutely No 2) Generally No 3) Average 4) Generally True 5) Absolutely True

Accordingly, a significant portion of the subjects believes that province of Artvin is rich with forests. Nonetheless, it is actually not so easy to ascertain whether a certain place is rich in forests; yet, criterion of forest area entity which indicates the proportion of forests to the general habitat is one of the key measurements that can be benefited to reach an idea about richness (Öztürk, 2003). Once these certain criteria are considered, this ratio is 54% in province of Artvin, while it is 27% for Turkey in general (OGM, 2006). In other terms, based on this criterion, it is possible to assert that forest villagers reflect a valid opinion.

Among the ones answering the question relevant to the future of forest entity in Artvin, the first line belongs to the ones answering it will be much better (40.1%; Mod=3). The ones believing that it will be the same are second (25.3%) and the ones convinced that it will be much worse are third (23.6%). When the ones who are pessimistic about the future of forests in Artvin are asked for an explanation, ineffective protection of present forests is the first reason (30.2%; Mod=1).

The answers given to the question whether they have had any forestry work experience during the last 10 years; the ones saying no (81.1%; Mod=1) were majority and around 1/5 of the subjects (18.9%) answered affirmatively.

Low ratio of previous forestry work experienced among forest villagers is parallel to the ranking of income resources given in demographical characteristics section in this paper.

On the other hand, when subjects were asked if they were ever engaged in a lawsuit with SFO, a great majority answered as no (91.9%; Mod=1). Once the ones who said yes (8.1%) were asked about the case of lawsuit, illegal lumbering (64.5%) and possessing illegal assets (19.4%) occupied the first two lines of subject matters. Cadastral lawsuits (9.7%) came third.

It surfaces that a minor portion of subjects have had lawsuits with SFO. However, it should be kept in mind that even if they had a legal dispute, some of them might be hesitant to verbalize it. Still, as is obvious, almost one person out of 10 has some legal disputes with SFO somehow, and the subject matter is parallel to Artvin FRD's 2001-2005 recent statistics of forest crimes (AFRD, 2005), illegal lumbering and possessing illegal assets. Cadastral lawsuits which are also foregrounded subject matters originate from the fact that throughout the province in general, forest cadastral has not been completed yet, thus ownership issues are still continuing.
Once again, the answers given by the villagers who had legal disputes with SFO to the question of income sufficiency is striking. None of the participants who declared to have sufficient economic income had any lawsuits with SFO, while three out of four people (74.2%) who declared to have difficulty in getting by with their income had lawsuits with SFO. Similarly, it is evident that majority of villagers (83.8%) who had legal disputes with SFO are secondary school or lower graduates.

Regarding the question on the effect of lawsuits between SFO and forest villagers over the protection of forests; the ones claiming a negative effect (55.3; % Mod=3) take the first line, while the ones claiming a positive effect (38.2%) come second. According to common view, lawsuits between SFO and forest villagers will cause a negative effect on forest protection.

More than half of the villagers (64.7%; Mod=1) opposed to the view that SFO employees followed their self-interest, whereas one out of three villagers (28.8%)

Table 3. Demographical characteristics.

Variable			Frequency	Percentage
Gender		Male	359	93.2
		Female	26	6.8
Age (year)		16-35	94	24.4
		36-45	115	29.9
		46-60	122	31.7
		60 üzeri	54	14.0
Education		Uneducated	7	1.8
		Literate	2	.5
		Primary school	198	51.4
		Primary school	75	19.5
		High school	75	19.5
		University	24	6.2
		Other	4	1.0
Residence length of villagers (per year)		1-3 month	35	9.1
		3-6 month	19	4.9
		6-12 month	35	9.1
		Throughout the year	296	76.9
Income resources	**Primary**	Agriculture and stockbreeding	92	23.9
		Forestry	24	6.2
		Trade	31	8.1
		Wage-pension	184	**47.8**
		Self employment	46	11.9
		Other	8	2.1
	Secondary	Agriculture and stockbreeding	127	**68.3**
		Forestry	21	11.3
		Trade	12	6.5
		Wage-pension	20	10.8
		Self employment	3	1.6
		Other	3	1.6
	Third	Agriculture and stockbreeding	2	10.5
		Forestry	9	**47.4**
		Trade	3	15.8
		Wage-pension	4	21.1
		Self employment	1	5.3
		Other	2	10.5
Living with present income		Not living	53	13.8
		Difficulty in living	203	52.7
		Normally in living	122	31.7
		Comfortably in living	7	1.8

shared this view. Amongst the reasons that drive them to think that officials followed their self interest, the prevalence of this opinion throughout the region has been selected by four out of five people (81.5%). Aside from that, the ratio of villagers who hold this perspective due to a personal experience, or a case they witnessed themselves or heard about is very low (13.1%). Besides, the share of the ones who claimed the prevalence of self-interested acts is quite small (%2.3) compared to the whole group of interviewees. In other words, out of 100 interviewees, approximately four villagers based their claims of the prevalence of self-interested acts on tangible evidences.

Perspectives and suggestions of villagers on forest protection system

In Table 2, perspectives and opinions of villagers on Artvin FRD forest protection system and activities, mean,

median, mode and standard deviation values of their answers about the deductions that are developed to find their solutions for forest protection are given.

Accordingly, the first three deductions supported by the majority of villagers are respectively; *"Artvin FRD is successful in regard to its current forest protection system and practices, and should continue as well"*, "The main problem in protecting forests stems from irresponsible officials in charge of protection" and finally *"The main problem in protecting forests stem from state forestry organization itself"*.

On the other hand, the most supported deduction, Artvin FRD is successful in terms of protection system, the views of majority of subjects claiming that recently there has been no forest damage in their village/region (77.9%; Mod=1) and the sufficiency of forest protection practices executed by Artvin FRD (63.5%; Mod=2) are parallel to each another.

Although villagers believe that Artvin FRD is successful in terms of forest protection practices, one out of five villagers (20.5%) states that there is forest damage in their village, and one out of three villagers (32%) is convinced that protection practices controlled by Artvin FRD are insufficient.

The ones who claimed the existence of forest damage indicated pesticides and natural disasters as the main causes (23.5%; Mod=9) and put the corrupt practices of SFO to the second line (21.4%; Mod=4). The third most important cause of forest damage is laws and regulations against forests, and the illegal and negligent exploitation of forests by villagers (23.1%; Mod=1).

Pesticide epidemic that has recently increased throughout Artvin FRD made natural factors the primary cause of forest damage. Bark beetles in particular caused visible dryness on forest trees and forced huge amounts of extraordinary production in enterprises. These products damaged by beetles caused significant losses of potential income for SFO (Öztürk et al., 2008).

The main three reasons given by the ones who believe that forests are not effectively protected (52.8%) are such; insufficient auditing of SFO's failure to establish cooperation with local people (27.3%) and the tendency of forestry officials to overlook forest crimes and take bribe to sustain their good relations with villagers (18.2%).

At this point, villagers directly or impliedly point out to protection officials or SFO itself as the main causes of the problems encountered in forest protection. Indeed, in a report regarding the protection of forests (Sayıştay Başkanlığı, 2004), it has been emphasized that in Turkey, forest protection officials are incompetent not only in quantity but also in quality.

Then again, two deductions that received almost the biggest support are; "*Forests should be cooperatively protected with SFO and villagers"* and *"Particularly in protecting forests near villages, SFO should cooperate with local villagers thus creating an employment opportunity for villagers as well."*

The common feature of both deductions is that villagers should be incorporated to forest protection process; thus, forests should be protected via this cooperation. Glover (2005) also discovered similar findings indicating local people's demand for cooperation between local people and the state to co-manage and protect forests. On the other hand, in order to execute forest protection activities more effectively, raising the awareness of urban/rural people and prioritizing educational activities are primarily selected by subjects (50.7%; Mod=1), which indicates that awareness- raising is highly valued by villagers.

In this manner, via incorporating villagers to forest protection process and educating them, not only the forests will be more effectively protected but also villagers will attain certain economical profits; thus, both forestry organization and forest villager will be the winning part. The fact that the forest villager attributes such significance to the above-mentioned deductions indicates his awareness/consciousness of the prospective benefits. On the other hand, deductions regarding giving the right to protect, own and manage forests to legal entities in villages call attention as the least supported deduction.

At this point, it is understood that although ownership and possessory right of forests belong to the state, certain model practices (Mai, 2009) and similar participatory approaches are needed where forest protection and management is executed by an agreement signed between state SFO and village cooperatives.

The relationship between educational level and perspective on forest entity and forest protection system

The effect of educational level over the perspective of villagers on forest entity throughout the province of Artvin has been examined. As indicated in Table 4 as well, there is a certain relationship between educational level and the answer to the question *"Is Artvin rich in terms of forest entity?*" (r=0.149, $p<0.01$).

Accordingly, as educational level rises, the sensitivity of villagers towards forests increases as well. As a result, they perform a more attentive approach and thought with respect to forestry richness in the province of Artvin.

The perspectives of villagers on forest protection activities practiced in Artvin and the effects of their educational status on perception are as given (Table 5):

There is an opposite relationship between educational level and deduction on the success of present SFO in the province of Artvin (r=-0.241, $p<0.01$). As a matter of fact, as the educational level rises, so does the number of people who believe in the inefficiency of Artvin forestry organization in protection activities (r=0.249, $p<0.01$) and the belief in the deficiencies of present protective activities also prevails (r=0.312, $p<0.01$). Once again, the highly educated ones put forward the main problem in forest protection to be related to SFO itself (r=0.100, $p<0.05$), and officials in charge (protection officials) overlook some illegal deeds for their self-interests (r=0.142,

p<0.01).

On the other hand, there is a certain positive relationship between educational level and the belief in the necessity to take stricter and more deterrent measurements for forest protection (r=0.105, p<0.05); whereas, there is an opposite relationship between the suggestion to allocate management and protection activities of forests to legal entities in the village (r=-0.118, p<0.05) and the educational level.

Research findings indicate that a positive relationship exists between educational level of villagers and their sensitivity towards forests and forest protection. In other words, as educational level rises, consciousness levels of people regarding forests entity is also elevated; hence, they can describe the problems better and forge more number of opinions on alternative solutions. Naturally in the end, their concerns on the future of forest entity also increase. In line with that, amongst the highly educated ones, the tendency to regard the insufficient forest entity of Artvin also dominates.

It is possible to assert that such a conclusion is related to the facts that are compared with the less educated ones. Educated people are more attentive and sensitive towards forest protection (Xu et al., 2006). Also, they are more able to comprehend the worth of forests (Türker ve Ayaz, 1998) and consequently, they act more sensibly. Correspondingly, Shrestha and Alavalapati (2005) state in their research that educated people hold a positive attitude towards protection. Türker (1992)

also emphasizes that in improper protection and damage of forests, next to economic depravities of forest villagers, ignorance and negligence of forest villagers are particularly effective.

It is obvious that with an increase in the educational level, sensitivity towards forests also shows impetus and therefore, the highly educated ones are convinced that SFO falls short in protection activities and they point out that SFO itself lies on the basis of protection issues. For that reason, educated people support the idea of taking stricter precautions by SFO and they oppose to the idea of commissioning legal entities in village with forests protection and management practices.

The relationship between age group and perspective on forest entity and sate forest organization

According to the results of Kruskall-Wallis test, villagers that constitute at least one age group are different from other groups as indicated by the deductions concerning questions on forest entity and SFO in Table 6 and 7 ($p< 0.05$).

As illustrated by the results of Mann-Whitney U test, between I-II and I-III age group, there is no difference in terms of the answers given to the questions; *"Have you ever had a legal dispute with state forestry organization?"* and *"How does the lawsuit between state forestry organization and villager affect forest protection?"* ($p> 0.05$). However, between the same age groups, there is a difference in terms of answers given to the questions; *"How will the forestry future of Artvin be like?"* and *"Do you think self-interested acting is a common practice among state forestry organization employees?"* ($p< 0.05$). Between I-IV age groups, there is no difference in terms of answers given to the question; *"Have you ever had a legal dispute with state forestry organization?"* ($p> 0.05$); whereas, the answer given to the same question differs between age groups II-III ($p< 0.05$). Then again, between age groups I-IV there are differences in terms of answers given to the questions; *"How will the forestry future of Artvin be like?", "How does the lawsuit between state forestry organization and villager affect forest protection?"* and *"Do you think self-interested acting is a common practice among state forestry organization employees* ($p< 0.05$). In terms of the same questions, there is no difference between age groups II-III ($p> 0.05$).

Between age groups II-IV, there is no difference in terms of answers given to the questions; *"How will the forestry future of Artvin be like?"*, *"Have you ever had a legal dispute with state forestry organization?"* and *"How does the lawsuit between state forestry organization and villager affect forest protection?"* ($p< 0.05$). However, between the same age groups, there is no difference in terms of answering the question *"Do you think self-interested acting is a common practice among state forestry organization employees?*" ($p> 0.05$).

Finally, between age groups III-IV, there is no difference in terms of answers given to the questions; *"Have you ever had a legal dispute with state forestry organization?"* and *"Do you think self-interested acting is a common practice among state forestry organization employees?"* ($p> 0.05$). On the other hand, between the same age groups, there is a difference in terms of answers given to the questions; *"How will the forestry future of Artvin be like?" and "How does the lawsuit between state forestry organization and villager affect forest protection?"* ($p< 0.05$).

To conclude, it is apparent that in terms of answers given to inquiries concerning the future of forests in Artvin, lawsuit disputes between SFO and villagers, effect of lawsuits on the protection of forests and self-interested acts of SFO employees, villagers differ in opinion from each other with respect to their age groups. At this point, the young group in particular is discernible from other age groups. Of all the interviewees, 23.7% is pessimistic about the future of forests in Artvin; whereas, among the first group, the young group, this ratio is around 37.2%.

On the other hand, among the interviewees, the ratio of villagers who stated 'to have a legal dispute with SFO' was 8.1%; whereas, the share among young ones was 5.3%. Once again, compared to the average of village population, young generation supports more of the opinion on the self-interested acts of SFO workers and believes that lawsuits between SFO and villagers affect forest protection negatively. Atmış (2001) too in his re-

Table 4. Results of Spearman Test.

			Education level	Is Artvin rich in terms of forests?
Spearman's rho	**Education level**	**Correlation Coefficient**	**1.000**	**.149(**)**
		Sig. (2-tailed)	.	.003
		N	383	383
	Is Artvin rich in terms of forests?	Correlation Coefficient	.149(**)	1.000
		Sig. (2-tailed)	.003	.
		N	383	383

**Correlation is significant at the .01 level (2-tailed).

Table 5. The relationship between educational level and perspectives on protection activities.

	EL	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
EL	1.000														
X1	.241(**)	1.000													
X2	.249(**)	-.944(**)	1.000												
X3	.312(**)	-.622(**)	.650(**)	1.000											
X4	-.026	-.005	.034	.177(**)	1.000										
X5	.105(*)	-.028	.016	.064	.254(**)	1.000									
X6	.099	-.048	.079	.079	.105(*)	.192(**)	1.000								
X7	-.002	-.023	.014	.010	.087	.062	.400(**)	1.000							
X8	.091	-.063	.047	-.008	-.084	-.044	-.109(*)	-.041	1.000						
X9	-.118(*)	-.128(*)	.108(*)	-.049	-.050	-.093	-.085	.046	.430(**)	1.000					
X10	-.073	-.099	.072	-.070	-.071	-.087	.019	.074	.383(**)	.799(**)	1.000				
X11	.072	-.035	.012	.006	-.070	-.036	-.083	-.063	.833(**)	.396(**)	.371(**)	1.000			
X12	.100(*)	-.332(**)	.346(**)	.400(**)	.026	-.015	.026	.022	.111(*)	.091	.086	.081	1.000		
X13	-.027	-.155(**)	.160(**)	.184(**)	.085	.072	.050	-.012	-.016	-.011	.000	-.014	.333(**)	1.000	
X14	.142(**)	-.395(**)	.371(**)	.376(**)	.069	.093	.059	.006	.020	-.005	.012	.024	.357(**)	.303(**)	1.000

** Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).
(EL) Educational level. **(X1)** Artvin FRD is successful in regard to its current forest protection system and practices and should continue as well. **(X2)** Artvin FRD is absolutely a failure in terms of forest protection practices and protection system needs to be changed thoroughly. **(X3)** There are certain defects in Artvin FRD's forest protection practices and should be remedied. **(X4)** Artvin FRD needs extra vehicle and personnel for its current protection system. **(X5)** Stricter and more deterrent precautions need to be taken in protecting forests (**X6)** Forests should be cooperatively protected together with state forestry organization and forest villagers. **(X7)** Particularly in protecting forests near villages state forestry organization should opportunity for villagers as well. **(X8)** Ownership and management of forests should be allocated to legal entities in village or cooperatives founded by villagers. **(X9)** Solely management and protection activities of forests should be left to the hands of legal entities in village. **(X10)** Solely the protection of forests should be left to the hands of legal entities in village. **(X11)** In forest protection, cooperatives should be given responsibility when available. **(X12)** The main problem in protecting forests stems from state forestry organization itself. **(X13)** The main problem in protecting forests stems from irresponsible officials in charge of protection. **(X14)** The main problem in protecting forests stems from self-interest oriented acts of officials who play deaf in the face of illegal exploitations cooperate with local villagers thus create an employment

Table 6. The relationship between age group and perspective on forest entity and forest organization.

Variables	Mann-Whitney U statistics												K-Wallis statistics
	Age groups												
	16-35 ve 36-45 (I-II)		16-35 ve 46-60 (I-III)		16-35 ve >60 (I-IV)		36-45 ve 46-60 (II-III)		36-45 ve >60 (II-IV)		46-60 ve >60 (III-IV)		
	Z	Asymp. Sig. (2-tailed)	Z	Asymp. Sig. (2-tailed)	Z	Asymp. Sig. (2-tailed)	Z	Asymp. Sig. (2-tailed)	Z	Asymp. Sig. (2-tailed)	Z	Asymp. Sig. (2-tailed)	
What is the future of Artvin in terms of forest entity?	-2.166	.030	-2.278	.023	-3.607	.000	-.350	.727	-2.416	.016	-2.016	.044	0.002
Legal disputes with state forestry organizations	-.651	.515	-1.750	.080	-1.634	.102	-2.493	.013	-2.324	.020	-.123	.902	0.031
The effect of lawsuit between state forestry organization and villager on forest protection	-1.606	.108	-1.259	.208	-3.464	.001	-.384	.701	-2.272	.023	-2.600	.009	.006
The view related to self-interest oriented acts of state forestry organization employees	-3.239	.001	-2.888	.004	-3.878	.000	-.507	.612	-1.314	.189	-1.744	.081	.000

search points out that, in relation to the higher educational level of the village, young villagers are more sensitive towards forest protection issues. To wrap up, the relatively higher education of the young group drives them to be more pessimistic and sensitive about the future of forests.

The interrelation among length of residence in village, perspective on forest protection system and work experience in forestry

The relationship between the perspective of villagers on forest protection activities carried out in the province of Artvin and their length of residence in the village is shown in Table 7. There is a certain relation between the length of residence in village and belief in the success of Artvin forestry organization's forest protection system (r=0.173, p<0.01). As the length of residence in village increases, the ratio of the ones believing in the failure of Artvin forestry organization protection activities (r=-0.179, p<0.01) and lacks in protection activities that need to be remedied decreases (r=-0.149, p<0.01).

The ones who have been residing in the village for a long time do not believe that the main cause is related to SFO itself (r=-0.151, p<0.01), and they disagree with the deduction that insufficiency of forest protection is related to self-interested acts of forestry employees (protection officials) (r=-0.220, p<0.01).

Again, it surfaces that the ones who have been residing in the village for a long time do not have a tendency to support the view on the cooperation between SFO and forest villagers (r=-0.107, p<0.05).

Once the statistically meaningful relations between length of residence in the village and perspectives on protection system are evaluated as a whole, it surfaces that the ones who have been residing in the village for a long time are inclined to regard the protection activities of SFO as efficient, and they believe SFO itself is not the cause of protection issues. The common belief depends on various reasons such as social, economical, cultural, legal etc. Forest damages in Turkey are mostly caused by forest villagers and villagers pose a threat to forests (Türker and Ayaz, 1998; Kudat et al., 1999; Tolunay and Alkan, 2008). At this point, it is possible to state

Table 7. The relationship between the length of duration in the village and perspectives on protection practices.

	RLS	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
RLS	1.000														
X1	.173(**)	1.000													
X2	-.179(**)	-.944(**)	1.000												
X3	-.149(**)	-.622(**)	.650(**)	1.000											
X4	.030	-.005	.034	.177(**)	1.000										
X5	-.046	-.028	.016	.064	.254(**)	1.000									
X6	-.107(*)	-.048	.079	.079	.105(*)	.192(**)	1.000								
X7	.045	-.023	.014	.010	.087	.062	.400(**)	1.000							
X8	-.058	-.063	.047	-.008	-.084	-.044	-.109(*)	-.041	1.000						
X9	-.018	-.128(*)	.108(*)	-.049	-.050	-.093	-.085	.046	.430(**)	1.000					
X10	.018	-.099	.072	-.070	-.071	-.087	.019	.074	.383(**)	.799(**)	1.000				
X11	-.059	-.035	.012	.006	-.070	-.036	-.083	-.063	.833(**)	.396(**)	.371(**)	1.000			
X12	-.151(**)	-.332(**)	.346(**)	.400(**)	.026	-.015	.026	.022	.111(*)	.091	.086	.081	1.000		
X13	-.069	-.155(**)	.160(**)	.184(**)	.085	.072	.050	-.012	-.016	-.011	.000	-.014	.333(**)	1.000	
X14	-.220(**)	-.395(**)	.371(**)	.376(**)	.069	.093	.059	.006	.020	-.005	.012	.024	.357(**)	.303(**)	1.000

** Correlation is significant at the .01 level (2-tailed).
*Correlation is significant at the .05 level (2-tailed).

(RLS) Residence length of villagers. **(X1)** Artvin FRD is successful in regard to its current forest protection system and practices and should continue as well. **(X2)** Artvin FRD is absolutely a failure in terms of forest protection practices and protection system needs to change thoroughly. **(X3)** There are certain defects in Artvin FRD's forest protection practices and should be remedied. **(X4)** Artvin FRD needs extra vehicle and personnel for its current protection system. **(X5)** Stricter and more deterrent precautions need to be taken in protecting forests **(X6)** Forests should be cooperatively protected together with state forestry organization and forest villagers. **(X7)** Particularly in protecting forests near villages state forestry organization should cooperate with local villagers thus create an employment opportunity for villagers as well. **(X8)** Ownership and management of forests should be allocated to legal entities in village or cooperatives founded by villagers. **(X9)** Solely management and protection activities of forests should be left to the hands of legal entities in village. **(X10)** Solely the protection of forests should be left to the hands of legal entities in village. **(X11)** In forest protection, cooperatives should be given responsibility when available. **(X12)** The main problem in protecting forests stems from state forestry organization itself. **(X13)** The main problem in protecting forests stems from irresponsible officials in charge of protection. **(X14)** The main problem in protecting forests stems from self-interest oriented acts of officials who play deaf in the face of illegal exploitations.

that by declaring the efficiency of SFO, the villagers who have been residing in the village for a long time are actually trying to give a message that this deduction is not convincing for themselves either.

Between the ones who have had a work experience in Artvin forestry for the last 10 years and the ones who have not, except for one deduction, there is no difference in terms of deductions on protection system (Table 8). Accordingly, the only deduction they have disagreed upon is *"The main pro-blem in forest protection stems from forest organization itself."* ($p < 0.05$). The ones, who have had a work experience in forestry for the last 10 years, mostly support the view that SFO itself is the cause of protection issues; whereas, the ones without work experience believe that this deduction is misleading. In a way, this may be related to the fact that the ones who have had a work experience got a chance to know the organization better than the others, thus, they are able to detect the problems related to forest protection.

CONCLUSION AND SUGGESTIONS

Forest villagers and SFO are the most important

Table 8. Results of Mann-Whitney U Test.

Mann-Whitney U	8599.000
Wilcoxon W	56494.000
Z	-3.081
Asymp. Sig. (2-tailed)	.002

A grouping variable: The operational condition of forestry practices for the last 10 years.

players having an impact on the sustainable management and protection process of forest resources in Turkey. These policies, assigned by SFO and practiced for a long time, have created a conflict between these two players. The poverty of villagers in particular and ineffective attempts to establish cooperation have fueled these conflicts (Barlı et al., 2006) and adversely affected the process of forest protection and management.

In Turkey, sample studies aimed at designating the perspective, attitudes, views and suggestions of forest villagers on SFO and forest protection practices are limited in number. The present study aims to provide useful information that will contribute to more effective management and protection of forest resources for local and SFO directors. Basic outcomes obtained from the study are summarized below.

A majority of forest villagers regard the province of Artvin to be rich in terms of forest entity. Nonetheless, the ones who are pessimistic about the future of forests think so because they believe forests are not effectively protected.

On the other hand, the main reason that accounts for the legal disputes between forest villagers and SFO is illegal lumbering. At this point, what draws the study's attention is that, most of the villagers who claim to have difficulty with their income and the ones with lower educational level are engaged in a lawsuit with SFO. All of these deductions indicate that individuals who have insufficient incomes and low educational levels are more oriented towards taking illegal benefit from forests.

Regardless of the fact that villagers believe in the affectivity of SFO's protection system and activities to a large extent, there are opposite views as well. The basic justifications of the opposing viewers are; insufficiency of the audits of SFO, failure to cooperate with local people, the fact that officials overlook forest crimes for their own self interest or not to have a dispute with villagers and to take bribes. Therefore, the villagers point out that the main reason accounting for the problems in forest protection is the faulty practices of protection officials and SFO.

It has been understood that villagers are more willing to protect forest resources through a participative and cooperative approach together with SFO instead of protecting, benefiting or managing forests by themselves. Indeed, the deduction that received the biggest support from villagers to protect forests more effectively is that a cooperative protection system should be executed with SFO and during this process villagers should also be employed in protection practices. This perspective is a great chance for SFO. Thanks to the participatory approach of forest villagers, disputes between SFO and villagers will reduce and employment opportunities will be provided to villagers, which will enable a rise in their economy. Consequently, they will be more motivated to contribute positively to protection and management process of forests.

Highly educated individuals, the ones in the young age group, the ones who have been residing in the village for a brief period and the ones who have had forestry experience are more outspoken about the lacks and problems in forest protection system and they believe that SFO is not successful enough. For that matter, the ideas and perspectives of these particular individuals will aid SFO in practicing more effective and beneficial protection and management.

SFO directors should take effective precautions to prevent the emergence of any conflict with citizens in solving potential conflicts. Ways of using initiatives within legal framework should be pursued. At this point, driven by participatory approach of local SFO, protection system should be turned into a structure where forest villagers also share responsibility; hence, protection will be better effectuated. Such a reconstruction will be a more effective method rather than legal punishments. Even more, a management or protection system that gives responsibility to forest villagers may eliminate the potential negations that may emerge due to alleged disputes between SFO and forest villagers.

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