

Determination of appropriate education program for participation of local authorities for controlling of hunting and game management: A case study on East Anatolia

Kırsal yöredeki yerel yönetimlerin avlanmanın denetimi ve avlak yönetimine katılımlarına yönelik uygun eğitim programının oluşturulması: Doğu Anadolu Bölgesi Örneği

¹Ahmet TOLUNAY, Özden YALÇIN², Nihat GÜLDAŞ², Çetin SEMERCI³, Mehmet Akif OKUTUCU⁴, Cevdet AĞYÜREK⁴

¹Süleyman Demirel Üniversitesi Orman Fakültesi, Isparta, Türkiye

²Güneydoğu Anadolu Ormanlık Araştırma Enstitüsü, Elazığ, Türkiye

³Bartın Üniversitesi, Eğitim Fakültesi, Bartın, Türkiye

⁴Doğu Anadolu Ormanlık Araştırma Enstitüsü, Erzurum, Türkiye

Eser Bilgisi

Araştırma makalesi

DOI: 10.17474/acuofd.19264

Sorumlu yazar: Ahmet TOLUNAY

e-mail: ahmettolunay@sdu.edu.tr

Geliş tarihi: 06.03.2016

Düzelme tarihi: 19.08.2016

Kabul tarihi: 24.08.2016

Keywords:

Hunting-wildlife

follow-up of closed seasons,

village headman

board of alderman

training program

Anahtar kelimeler:

Av-yaban hayatı

avcılık

av yasaklarının takibi

köy muhtarı

ihtiyar heyeti

eğitim programı

Abstract

The purpose of this study was to determine whether the village headmen who are legally responsible in the Eastern Anatolian Region have sufficient knowledge regarding the follow-up of closed seasons or not, and to create an appropriate training program for the target audience, which would ensure more efficient control in rural areas and the village headmen's efficient participation in the sustainability of hunting-wildlife. The study includes the Ardahan, Kars, Iğdır, Ağrı, Van, Hakkari, Bitlis, Mus, Bingöl, Elazığ, Malatya, Tunceli, Erzincan and Erzurum provinces. Data collected with surveys through face to face interviews to be made with 346 people in 146 villages in total. The level of knowledge of the village headmen, members of board of alderman and, village watchmen on the issues such as wildlife, protection-control, legislation and public relations questioned, and a training program appropriate for the abovementioned audience created.

Özet

Bu çalışmada, köy muhtarlıklarının avlanma ve av yasaklarının takibinde bilgi düzeyleri belirlenmiş, kırsal yörede avcılığın ve avlanmanın etkin kontrolünü sağlayacak bir eğitim programı geliştirilmiştir. Araştırma Doğu Anadolu Bölgesinde Ardahan, Kars, Iğdır, Ağrı, Van, Hakkâri, Bitlis, Muş, Bingöl, Elazığ, Malatya, Tunceli, Erzincan ve Erzurum olmak üzere 14 ilde yürütülmüş, 146 köyde, 346 kişiye anket uygulanarak veriler toplanmıştır. Çalışma ile köy muhtarlıklarının avcılığın ve avlanmanın denetimindeki eksiklikleri, bu eksikliklerin giderilmesine yönelik eğitim tercihleri, av yaban hayatı ile ilgili görüş ve önerileri belirlenmiştir. Köy muhtarlarının, ihtiyar heyeti üyelerinin ve köy bekçilerinin av-yaban hayatının sürdürülebilirliğine etkin katılımlarının sağlanmasında, bu araştırma ile geliştirilen eğitim programı kullanılmalıdır.

INTRODUCTION

Hunting is a sporting activity, dating back to the beginning of humanity, changing according to technology and performed for the purpose communing with nature, spending time together and displaying physical movements. This activity, which was conducted in an irregular and random manner in the past, necessitated the imposition of certain rules, limitations, bans and punishments today (Huş 1974; Bora 2005a).

An area of 70 million ha can potentially be utilized as a habitat for game and wild animals in Turkey and hunting is a sector having an economic value (Geray and Akesen 2005). In order to be a consumer in this sector, it is nec-

essary to obtain the right to hunt, receive a hunting certificate and a hunt permit card. Hunters are obliged to carry their hunting certificates with them and show them to the authorities during inspections, while they hunt in the hunting area (Bora 2002).

The duties associated with the preservation, development and inspection of hunting, have been conferred to the Directorate of Nature Conservation and Natural Parks affiliated with the Ministry of Forestry and Water Affairs. Furthermore, general law enforcement officers (police, gendarmerie), voluntary hunting inspectors, village headmen, village council members and village and countryside watchmen were also authorized for the inspection of hunting (Bora 2005b).

The most effective method in the protection of game animals is the conduct of hunting inspections on site and in a timely manner (Geray and Iğircik 2002). Conventional preservation and inspection practices have not been particularly effective in the rural areas constituting a major part of wildlife. Therefore, local administrators in rural regions need to become active in controlling hunting and gaming (Oğurlu 2008). Sustainability has been one of the main keywords on the establishment of management systems (Tolunay and Turkoglu 2014). It means both sustainable rural incomes and also sustainable environmental responsibility in terms of village council (Turkoglu et al. 2016). Nowadays, village council is a main stakeholder and plays an important role as in the example of model forest in sustainable forest management. Informing village council increases the contribution of stakeholders (Tolunay et al. 2014).

The only group has not received any training in controlling hunting is village management. Village management may ban, intentionally or unintentionally, the hunting areas located at village borders and allow hunting in closed areas. In a study conducted in Eastern and Southeastern Anatolian Region, it was indicated that the announcement of the decisions of the Central Hunting Commission (CHC) to village management would be beneficial to raise the awareness of village headmen and village council members in the inspection of hunting (Fidan et al. 2007).

Various studies have been conducted for determining the characteristics of land hunters in Turkey. In order to fulfill this purpose, Bora (2002) studied the characteristics of the hunters attending the training courses; Ay, Bilgin, Şafak, and Akkaş (2005) stated the characteristics of hunters with a hunting card in the Aegean Region; Elbek, Uysal, and Saygı (2002) defined the profile of hunters in the Aegean Region while Iğircik, Yadigar, Bekiroğlu, Okan, and Akkaş (2005) described the profile of the hunters in the Marmara Region; Bekiroğlu and Okan (2007) depicted the demographic and socioeconomic structure of hunters; Fidan et al. (2007) identified the profile of land hunters holding a hunting license or hunting without license in the Eastern and Southeastern Anatolian Regions; and Şafak (2009) depicted the cultural characteristics of hunters who are members of hunting associations.

This study identified the perspectives, preferences, views and proposals of village management holding legal liabilities in the inspection of hunting in rural regions and a training program was developed for this group. In order to achieve an effective hunting and game control, village headmen, village council members, village and countryside watchmen should be trained with the training program developed in this study.

MATERIALS AND METHOD

The study was conducted in the cities of Ardahan, Kars, Iğdır, Ağrı, Van, Hakkari, Bitlis, Muş, Bingöl, Elazığ, Malatya, Tunceli, Erzincan and Erzurum located in the Eastern Anatolian Region. There are 6.050 villages affiliated to these cities (Fig.1).

The number of villages where the survey was conducted and the number of persons to be interviewed was determined on the basis of the following formula (Sachs 1974) where the sampling error of 10% and a confidence interval of 95% ($p < 0.05$);

$$n = N / (1 + a^2 \cdot N)$$

These letters reflect the following;

n = Sampling volume,
 N = Population size,
 a = Sampling error.

The villages to be surveyed were selected via the random sampling method. The questions on the survey were prepared by taking into account the hunting wildlife literature, CHC decisions and the legislation on hunting and were tested between October 1-10, 2012, in 13 villages of the cities of Elazığ and Malatya, on village headmen and committee members. Unsuitable questions were removed from the survey form, the other necessary questions were added and the survey form was finalized (Bal 2001). The surveys were conducted between November 1 and December 2012 on 346 people in 146 villages. The survey forms were divided into 2 groups, namely the village headmen and village council members. Table 1 shows number of surveyed cities, villages and people. Due to the low number of village and countrymen participating in the survey, they were not included into the as-

assessment. The data were evaluated with the SPSS software 14.0 (SPSS 1988) and the Chi-square (χ^2) test was used for identifying the differences between the groups (Steel and Torrie 1980).



Figure 1. Eastern Anatolian Region of Turkey

FINDINGS

Age: Considering the age of the people in the management of the surveyed villages, it was observed that 36.4% of the village headmen were aged between 45-54 years, while 29.6% of the village council members were aged between 35-44 years.

Educational background: According to their educational background, 57.9% of the village headmen and 65.5% of the village council members were elementary school graduates.

Authority status in hunting controls: It was known that 47.9% of village headmen had a hunting license while 48.0% of village council members hold a license. There was no difference between village headmen and village committee members in terms of their license for hunting control ($\chi^2=32,782$, Sd=2, p=0,000).

Table 1. Number of surveyed cities, villages and people

Name of city	Total number of villages	No. of surveyed villages	No. of surveyed people	Duty in the village management		
				Village head-man	Village Council Members	Village and countryside watchmen
Ardahan	239	7	13	4	8	1
Kars	382	8	21	7	14	-
Iğdır	156	4	10	3	6	1
Ağrı	566	12	27	10	17	-
Van	575	12	27	9	18	-
Hakkari	130	2	6	2	4	-
Bitlis	318	8	18	8	10	-
Muş	364	7	18	6	12	-
Bingöl	317	6	15	6	9	-
Elazığ	548	13	34	12	24	-
Malatya	496	12	25	9	16	-
Tunceli	382	10	21	8	13	-
Erzincan	535	11	29	11	18	-
Erzurum	1 042	34	82	26	56	-
Total	6.050	146	346	121	223	2

Control of hunting documents and permits: The hunting permits and documents were not controlled by 75.2% of village headmen and 90.1% of village council members. There was a significant difference between village headmen and village council members in terms of the control of hunting documents ($\chi^2=13,623$, Sd=1, p=0,000).

Detection of hunting offences: While 97.5% of village headmen hold no records on hunting this rate was 99.6% for village council members.

Control of hunted game animals: The hunted game animals were not controlled by 80.2% of village headmen. This rate was 94.2% for village council members. There was a significant difference between village headmen and village council members in terms of the control on game animals ($\chi^2=16,028$, Sd=1, p=0,000).

The documents to be carried by hunters: When questioned on the documents required to be carried by the persons who were hunting, it was detected that 55.4% of

village headmen did not know all of the documents while 52.5% of village council members did not know the mandatory documents for hunting.

Species forbidden to be hunted: While 48.8% of village headmen did not know the species which were forbidden to be hunted within village borders, this rate was 43.5% for village council members.

Species allowed to be hunted during certain periods: While 83.5% of village headmen did not know which game animals were allowed to be hunted within village borders and the immediate surroundings during certain periods, this rate was 74.0% for village council members. It was observed that there was no significant difference between village headmen and village council members in terms of their responses ($\chi^2=4,731$, Sd=3, p=0,193).

Areas where hunting is forbidden: While 60.3% of village headmen knew the areas where hunting was forbidden within village borders, this rate was 55.1% among village council members. There no significant difference between village headmen and village council members in terms of their response to this question ($\chi^2=4,731$, Sd=3, p=0,193).

Hunting periods: Hunting periods were known by 50.4% of village headmen and 64.1% of village council members.

Hours when hunting is allowed: The hours when hunting were allowed were not known completely or were known erroneously by 47.1% of village headmen and 66.8% of village council members.

Hunting limits: The hunting limits per hunter according to species in a hunting day were not known by 57.9% of village headmen and 84.8% of village council members. There was a significant difference between village headmen and village council members in terms of hunting limits ($\chi^2=32,590$, Sd=4, p=0,000).

Banned hunting methods: The banned hunting methods were not known by 62.0% of village headmen and 85.2% of village council members.

Preferences in approaching hunters: A prioritized ranking of the preferences in approaching hunters when a hunter

was seen within village borders was requested and 39.7% of village headmen stated that they did not allow hunters to hunt within the borders of their village while 29.8% indicated as their first preference the fact that they controlled the documents themselves. It was indicated by 41.7% of village council members that they did not allow hunting while 24.7% stated as their first preference the fact that they did not do anything.

Effective control preferences in hunting: In relation with the question on what needs to be done in order to be more effective in hunting controls, 53.9% of village headmen and 56.6% of village council members requested for the provision of information and training for hunting controls while 24.9% of village headmen and 22.5% of village council members demanded for the issuance of a document indicating that they had been authorized by the state, in order to be more effective in controlling hunting.

Preferred institute for conveying the issues: When encountered with a problem about hunting, 71.6% of village headmen and 80.1% of village council members preferred to contact the gendarmerie.

Desire to receive training: When asked the question "Would you like to receive a training on hunting control?", 88.4% of village headmen and 86.5% of village council members indicated that they would like to receive training. The other training options were not asked to those who did not want to receive training. There was not a significant difference in the responses provided by village headmen and village council members to the desire for training ($\chi^2=0.249$, Sd=1, p=0.618).

Training site preferences: When asked the question, "If a training is to be provided for hunting control, where should it be conducted?", 45.4% of village headmen and 41.0 of village council members indicated that they wanted the training to be provided in the affiliated town. Moreover, a prioritized ranking was also requested in this question: 42.1% of village headmen stated as their first option they would like to receive the training in their affiliated town; 30.6% stated that they would like to receive the training in their own village; 39.0% of village council members indicated as their first preference that they

would like to receive the training in their own village; and 30.5% stated that they would like to receive it in the affiliated town. The breakdown of their preferences is provided in Table 2.

Table 2. Training site preferences of village headmen and village council members *

Training Site	Village Headmen		Village council members	
	No	Percentage	No	Percentage
In the affiliated Town	68	45.4	112	41.0
In our Village	38	25.3	87	31.9
At the city center	22	14.7	31	11.3
In the town	3	2.0	6	2.2
In the neighboring village	2	1.3	4	1.5
No matter	3	2.0	3	1.1
No response	14	9.3	30	11.0
Total	150	100	273	100

* Marked more than one preference.

Training site preferences: When asked the question “If training is to be provided on hunting control, how long should the training last?”, 52.1% of village headmen and 58.3% of village council members stated that 1 day training would be sufficient. The breakdown of their preferences is provided in Table 3. It was observed that there was no significant difference between village headmen and village council members in terms of preference in the duration of training ($\chi^2=5.810$, Sd=5, $p=0.325$).

Timing of Training: When asked the question “If training is to be provided on hunting control, in which month should the training be?”, 36.4% of village headmen and 44.8% of village council members stated that October-November-December were suitable for them. The breakdown of their preferences were provided in Table 4. There was no significant difference between village headmen and village council members in terms of their response for the timing of training ($\chi^2=7.553$, Sd=5, $p=0.183$).

Table 3. Training period preferences of village headmen and village council members

Duration of Training	Village Headmen		Village council members	
	No	Percentage	No	Percentage
1 day	63	52.1	130	58.3
2-3 days	18	14.8	23	10.3
4-5 days	9	7.4	8	3.6
6-7 days	11	9.1	15	6.7
Longer than 7 days	6	5.0	12	5.4
No response	14	11.6	35	15.7
Total	121	100	223	100

Table 4. Training time preferences of village headmen and village council members

Timing of Training	Village Headmen		Village council members	
	No	Percentage	No	Percentage
January-February-March	26	21.4	33	14.8
April-May-June	7	5.8	12	5.4
July-August-September	6	5.0	3	1.3
October-November-December	44	36.4	100	44.8
It doesn't matter	24	19.8	45	20.2
No response	14	11.6	30	13.5
Total	121	100	223	100

CONCLUSION AND PROPOSALS

During the preparatory phase of the training program aimed at enabling the active participation of village management in hunting control, village headmen and village council members declared that they will voluntarily attend the training as local authorities.

A significant majority of the responses of village headmen and village council members to the survey questions in the study demonstrated that both groups carried similar characteristics. Therefore, separated training programs were not prepared for the two groups and they were identified as the common target audience of the training to be provided.

The majority of the village headmen and village council members were aged between 35-64 years. Due to the large number of people of primary school graduates, adult education should be given at the elementary school level.

The main topics in the hunting control training for village management in rural regions will be hunting legislation, public relations, official correspondence and document

classification, hunting weapons, local hunting and information on game animals and the content of the training is provided in Table 5. The outline of hunting control training for village management is presented in Table 6.

Table 5. The main issues in hunting control training for village management

Main Training Topics	Topic contents
Hunting legislation	Village Law No. 442, Forest Law No. 6831, Land Hunting Law No. 4915, Misdemeanor Law No. 5326, Animal Protection Law No. 5199, Environmental Law No. 2872, National Parks Law No. 2873, Decisions of the Central Hunting Commission
Public relations	Communication with hunters, approach towards hunters, controlling game animals hunted by hunters
Official correspondence and Document classification	Preparation of official documents and correspondence, classification of control records
Hunting weapons	Types of hunting weapons, their use in hunting, hardware and equipment
Knowledge on local Hunting and game animals	Wild animals located in the region and immediate vicinity, species which are forbidden to be hunted and which can be hunted at certain periods.

Table 6. The outline of hunting control training for village management

<ul style="list-style-type: none"> • Institution to Provide the Training • Target audience • Timing of training • Duration of training • Training site 	<ul style="list-style-type: none"> • Provincial Branch Offices of Nature Conservation and Natural Parks • Village management, village council member, village and countryside watchmen • Autumn and winter months • 1 day • In city center where the villages are close to city center, In town center where the villages are close to town center.
<ul style="list-style-type: none"> • Training mode 	<ul style="list-style-type: none"> • Adult training for elementary school, Topic training and applications, Learning together (case studies, short films, role-plays) Assessment of training (what did we learn?)
<ul style="list-style-type: none"> • Frequency of training • Persons to provide the training • Materials to be issued at the end of training 	<ul style="list-style-type: none"> • After each local election • Academicians and executors specialized in hunting and wildlife. • Training documents (training notes, sample hunting records, decisions of the Central Hunting Commission) Certificate of attendance, Hunting control license, Hunting equipment (briefcase, binoculars, whistle, protective vest)

Institution to provide the training: Training should be provided by Provincial Branch Offices of Nature Conservation and Natural Parks with an organization in the city.

Target audience: The target audience of the training comprises village headmen, village council members, and village and countryside watchmen.

Timing of training: Training should be conducted during autumn and winter months when there is less workload in villages. Where required, training can be spread throughout the year.

Duration of training: One-day will be sufficient according to the content of training.

Training site: Training should be conducted in city center for villages close to the city center and in town center for villages close to the town center; training should be conducted in communities or centrally located villages, where this is not possible.

Mode of training: This is adult training at an elementary school graduate level. Brainstorms, case studies, short films and role-plays can be used in the implementation of training programs. An assessment should be made at the end of training in order to identify what has been learned.

Frequency of training: Training should be repeated for village headmen and village council members who change after each local election.

Persons to provide the training: Academicians and executors specialized in hunting and hunting wildlife should provide the training.

Materials to be provided at the end of training: Training notes, sample records, maps indicating areas where hunting is allowed or forbidden, decisions of the central hunting commission, certificate of attendance and hunting control license should be provided to participants at the end of training. Furthermore, the provision of materials used by protection officers such as briefcases, binoculars, whistle and protective vest will enable local management to be more effective in hunting controls.

ACKNOWLEDGMENTS

This study was supported by Turkish Scientific and Technical Research Council of Turkey (TUBITAK) in research project number 112O422.

REFERENCES

- Ay Z, Bilgin F, Şafak I, Akkaş M (2005) Determination of hunters profile in the Aegean Region of Turkey, Egean Forest Research Institute, Technical Bulletin No: 27:36, İzmir, p: 39.
- Bal H (2001) Scientific research methods and techniques, Suleyman Demirel University Press, Isparta, p: 389.
- Bekiroğlu S, Okan T (2007) Demographic and socioeconomic structure of the hunters: Example of Marmara and Aegean Regions, Acta Turcica, 1-1, 295-308.
- Bora ME (2002) Towards sustainable hunting and wildlife, Ministry of Forestry, General Directorate of National Parks and Hunting-Wildlife, Ankara, p:384.
- Bora ME (2005a) Hunting history, psychology and hilosophy, In: Basic Training Manual for Sustainable Hunting (Volume 1), Bora ME (Ed.), Dumat Ofset, Ankara, 27-56.
- Bora ME (2005b) Hunting laws regulating of land and water products, In: Basic Training Manual for Sustainable Hunting (Volume 2), Bora ME (Ed.), Dumat Ofset, Ankara, 9-250.
- Elbek AG, Uysal, I, Saygı H (2002) A research on determination of land hunters profile in the Aegean Region in Turkey, İzmir, p:30.
- Fidan C, Orhan C, Yalçın O, Duran C, Gültaş N, Çelik, N (2007) Determination of the land hunters profile of East and Southeast Region in Turkey, Soutern Anatolia Research Instute, Technical Bulletin, Elazığ, 19-11.
- Geray U, Iğırıcık M (2002) Hunting and wildlife education in Turkey, J. Forestry Engineering, 39-8: 5-10.
- Geray U, Akesen A (2005) Sustainable management of hunting and wildlife resource, In: Basic Training Manual for Sustainable Hunting (Volume 1), Bora ME (Ed.), Dumat Ofset, Ankara, 59-108.
- Huş S (1974) Game animals and hunting, Second Edition, Kurtulmuş Press, İstanbul, p:406.
- Iğırıcık M, Yadigar S, Bekiroğlu S, Okan T, Akkaş ME (2005) Hunter profile of Marmara Region. Egean Forest Research Institute, Technical Bulletin No: 29:38, İzmir, p: 27.
- Oğurlu I (2008) A review on our wildlife resources management, SDU Journal of Faculty of Forestry, 2, 35-88.
- Sachs L (1974) Angewandte Statistik, Planung und Auswertung Methoden und Modelle, ISBN: 3-540-06443-5, Berlin.
- Şafak I (2009) The cultural properties of hunters association members:Izmir Province example, Acta Turcica, 1-1, 327-343.
- SPSS (1988) User's Guid: 3rd Edn. SPSS Inc. Chicago, IL.
- Steel RGD, Torrie, JH (1980) Principles and procedures of statistics. McGraw-Hill, New York, p: 633.
- Tolunay A, Türkoğlu T (2014) perspectives and attitudes of forest products industry companies on the chain of custody certification: a case study from Turkey. Sustainability, 6(2), 857-871.
- Tolunay A, Türkoğlu T, Elbakidze M, Angelstam P (2014) Determination of the support level of local organizations in a model forest initiative: do local stakeholders have willingness to be involved in the model forest development?, Sustainability, 6(10), 7181-7196.
- Türkoğlu T, Bekiroğlu S, Tolunay A (2016) Effect of stocking rate on forage availability and growth performance of goat kids in mediterranean kermes oak shrublands. Kastamonu University Journal of Forestry Faculty, 16(1), 269-279.