

Current condition of pure hair goat grazing in forest areas in Turkey: Constraints, possibilities and solutions

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Summary

In this study, the pure hair goat (*Capra hircus* L.) in Turkey have been analyzed. Pure hair goat raising is an important means of subsistence for the villagers living in this district, providing them with income and food security. In accordance with the provisions of Forest Law No. 6831, the forest administration has prohibited the grazing of pure hair goats in these areas which are part of a public forest. Upon presenting the provisions of the said law as justification, lawsuits are being filed against villagers who graze pure hair goats, and those who are found guilty are fined and imprisoned. Furthermore, the forest administration is putting pressure on villagers to make them quit pure hair goat breeding. There are significant problems faced in utilizing forest resources in pure goat breeding Turkey. Therefore, the following interventions are proposed to ensure that the pure hair goat breeding system is productive, sustainable and stable: (1) The forest administration should allow villagers to use the forest resources and the forest areas should be classified as a separate business class entitled pure hair goat grazing class in the forest management plans, (2) Excessive and irregular grazing conducted by villagers should be stopped, (3) Grazing plans should be prepared according to the results of this research, (4) Pure hair goat breeders should be organized and the grazing program should be regulated by the organization of which these persons are members, (5) The forest administration should inspect whether grazing is performed in a sustainable manner.

Key words: forest resources, forest policy, forest law, pure hair goat, Turkey

Introduction

The goat species that are most commonly raised in Turkey are the pure hair goat and the angora goat. Of these two species, the pure hair goat (*Capra hircus* L.) is the most commonly raised species at 96% (Ozder 1997). The areas in Turkey where pure hair goat breeding is most widely conducted are the Aegean, Mediterranean and Southeast Anatolian Regions. Nomads who live in these areas have been breeding pure hair goats in the upper basins of that region for centuries (Boyazoglu et al. 2005, Ocak et al. 2007). Pure hair goat breeding symbolizes a cultural value for nomads, in addition to being a breeding system (Guney and Darcan 2005).

There are similarities between the borders of the regions where pure hair goats are bred and natural distribution borders of some types of trees and shrubs within the Mediterranean scrub vegetation. This similarity is demonstrated clearly in Kermes Oak (*Quercus coccifera* L.) and Boz Pinal Oak (*Quercus aucheri* Jaub.&Spach.) types. Both types of shrubs are woody types, whose leaves are eaten fondly by pure hair goats. Pure hair goats have selected as their habitat the natural distribution area of these two types of shrubs (Tolunay et al. 2009).

Various investigations have been conducted regarding grazing at in-forest meadows and forage yield in Turkey (Defne 1955, Alpay 1972). Furthermore, there are also studies regarding utilization of leaf fodders of forest trees (Mol 1982, Sevimsay and Sun 1987). In

these researches, the damage caused by pure hair goats on forests and trees have been highlighted and request has been made for keeping them away from forests. Yet, the countries located in the Mediterranean Region have noticed the importance of the kermes oak in goat breeding and tried to develop their breeding system (Aldezabal and Garin 2000, Boyazoglu and Morand 2001, Ainalis and Tsiouvaras 2004, Ainalis et al. 2006, Zarovali et al. 2007). The measures adopted against grazing of goats in forests are technical as well as social, economic and administrative in nature. It is necessary to settle the opposite relation between forestry and goat raising (Tolunay and Ayhan 2010).

Pure hair goat breeding and the current breeding system in Turkey have been analyzed, the bottlenecks have been detected and solution proposals have been developed in this article. The article has been prepared on the basis of the analyses and observations regarding pure hair goat breeding in different regions of Turkey. Moreover, scientific data and results obtained from research projects in different timeframes have been used in the preparation of this article. Some of these projects are: Designation of the Production Potential of Agroforestry in the Western Mediterranean Region (SDU Research Product No: 275), Suitable Species that May Be Used in Agroforestry Practices in the Western Mediterranean (SDU Research Project No: 460), Economic Analyses on the Contribution of Traditional Homegardens in Rural Regions to Households and Local Economy – Example from the Region of Isparta (SDU Research Project 08-YL-1767), The Yield of Fodder Leaves and Offshoots and the Change in the Content of Nutrients According to the Vegetation Period in Kermes Oaks (*Quercus coccifera* L.) (TUBITAK – Scientific and Technological Research Council of Turkey - Research Project 108 O 593).

Prohibitions, barriers and pressures on the pure hair goat production system in Turkey

Forest resources face numerous threats in many countries. For instance, the people living within and adjacent to forests are perceived as a threat for forests. Many entities and organizations strive to reduce this threat level or to totally eliminate it.

It is claimed that pure hair goat breeding which is traditionally conducted in developing countries and is one of the main means of subsistence for the people, harms forests. Thus, foresters who are responsible for the management and protection of forests, strive to reduce the number of pure hair goats and to direct the people performing this activity towards others means of subsistence.

There are 4 different situations regarding pure hair goat breeding in developing countries and these are provided in Table 1. According to the current situation, both foresters and pure hair goat breeders lose in Turkey.

Table 1. Four Different Status of Pure Hair Goat Production System in Developing Countries

FORESTERS LOSE, GOAT RAISERS WIN	BOTH WIN
<ul style="list-style-type: none"> * Irregular and unconscious grazing harms forests. * The environment is disrupted. * It gets more difficult to find grass and fodder. * Meat and milk yield is reduced. 	<ul style="list-style-type: none"> * The forest administration accepts the need of villagers to graze. * Suitable forest areas are allocated to villagers for grazing. * Villagers accept the rules placed by the forest administration. * Both parties obtain more productivity in the settlement area. * The risk of forest fires is reduced.

BOTH LOSE

- *Grazing goats in forest areas is banned.
- * Villagers graze goats illegally and pay high fines.
- * Villagers become poorer as they cannot gain sufficient income.
- * Villagers hate foresters.
- * Villagers harm forests deliberately.
- * The productivity of forests is reduced.

FORESTERS WIN, GOAT RAISERS LOSE

- * Forest villagers settle in areas outside the forest.
 - * Wide forest areas are converted into pure forests.
 - * Forest fires leading to a significant loss of life and property occur in large areas.
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Current Status

The land use experiences relating to pure hair goat raising of villagers living in the rural area of Turkey are life experiences developed by the inhabitants of this area. However, the representatives of the forest administration would like to eliminate these life experiences. According to Article 19 of Forest Law No. 6831; *“It is prohibited to allow the entry of any type of animals into national forests”*. Whereas, according to Article 21 of the Law; *“The grazing of animals upon allowed to enter the meadows inside national forests from outside collectively or in flocks shall depend on the permit to be granted by the forest administration according to the plans to be made.”* The *“Grazing Regulation”* drafted for the purpose of enforcing these articles has prohibited the grazing of pure hair goats within national forests. Article 95 of the said law reads: *“Those who allow the entry of animals into forests without permission, in violation of the provisions of this law shall be imprisoned for no less than 1 month and will also be fined.”* On the basis of this law, the forest administration files lawsuits against villagers who graze their pure hair goats in national forests. Persons found guilty by legal authorities are subjected to fines and imprisonment. The forest administration pressures villagers to quit raising pure hair goat.

Intervening to the pure hair goat production system in Turkey

There are problems regarding the use of land between villagers breeding pure hair goats and the forest administration. The forest administration has banned grazing of pure hair goats in forest areas. As goat owning shepherds graze their goats in an unbalanced and irregular manner within the production system, the fodder yield is very low. Breeders act independently. No sustainable benefit can be obtained from forest resources in grazing pure hair goats. The amount of meat and milk is also low due to irregular grazing.

Table 2 demonstrates the mode of intervention to the production system of pure hair goat breeding. Intervention should be made so as to ensure that the production system operates in a productive, balanced and sustainable manner. First of all, the forest administration should allow forest resources to be utilized by villagers raising pure hair goats. These areas should be allocated to a separate operation class under the heading of *“grazing area for pure hair goats”* in the forest management plan. Irregular grazing which is currently performed by villagers should be stopped and grazing capacity of these areas should be designated. The fodder leaf yield and change in nutrients in the areas where grazing is performed and the number of hair goats that may be grazed for how long and in what period in the unit area should be investigated. The grazing management of the area should be conducted by the *‘alliance’* established by the villagers and the forest administration should inspect whether grazing is performed in a sustainable manner. Moreover, persons who are not members of this alliance should not be allowed to raise pure hair goats and the persons who would like to enter the production system for raising pure hair goats should take permission from this alliance.

Table 2. Definition and Problems of Pure Hair Goat Breeding in Turkey and Mode of Intervention to the System

DEFINITION	<ul style="list-style-type: none"> * Pure hair goat breeding production system is a silvopastoral production system included into the agroforestry production systems. * Villagers breeding pure hair goats graze their animals in herds in forest areas. * Pure hair goat breeding is an important economic activity. *The production system includes tree/shrub species and pure hair goats. * The production objective of breeders is to breed pure hair goats in forest areas and produce meat and milk.
IDENTIFICATION	<ul style="list-style-type: none"> * The forest administration has banned the grazing of pure hair goats in these areas. * The villagers perform grazing in an irregular and unconscious manner. * There are problems in the utilization of land between the villagers breeding pure hair goats and the forest administration and these problems need to be solved. * As the tress/shrubs in forest areas are grazed in an irregular and intense manner the fodder yield is low. * The technology used is primitive and insufficient. * A sustainable benefit cannot be obtained from forest resources. *As pure hair goats cannot be fed sufficiently the amount of meat and milk is very low. * The breeders are not sufficiently organized. They act in an independent manner.
INTERVENTION	<ul style="list-style-type: none"> * The forest administration should allow pure hair goat breeders to utilize forest resources. * The “Alliance of Sheep-Goat Breeders” of which the breeders are members should work more effectively. * The production system should be operated in a productive, sustainable and balanced manner. * The grazing management in the area should be conducted by the vocational alliance established by the breeders. * Excessive and irregular grazing should be stopped. * Breeders should commit that they shall not perform excessive and irregular grazing. * Grazing should be performed in a given time, in certain periods.
DESIGN AND PLANNING	<ul style="list-style-type: none"> * The areas involving pure hair goat breeding production in forest resources should be classified as “Grazing Class” in the forest management plans. * Grazing plans which divide grazing into certain timeframes and periods should be prepared. * The grazing capacity of the areas where pure hair goat grazing will be performed should be designated. * The amount, timeframe and period of grazing per unit area should be investigated. * Breeders should be informed about regular grazing.
APPLICATION AND IMPLEMENTATION	<ul style="list-style-type: none"> * Plans and projects prepared for the development of the production system should be implemented. * Grazing plans should be implemented by the Alliance of Sheep-Goat Breeders”. * The forest administration should inspect the implementation of the grazing plans. * Special importance should be placed on coordination and cooperation in the implementations.
MONITORING AND EVALUATION	<ul style="list-style-type: none"> * It should be designated whether the production system is managed according to the land utilization plan. * It should be monitored whether breeders are acting according to the grazing plans. * The results obtained should be assessed and the system should be revised. * Have we reached the desired results? * Is grazing performed regularly? * Has there been any increase in the meat and milk yield? * Is the area used in a sustainable manner? * Has there been any increase in the income of breeders?

Discussion

The Ministry Environment and Forestry has prepared the “Action Plan for Reducing Goat Damage” in 2008 (MEFO 2008). This action plan aims to diminish the number of pure hair goats raised all over Turkey, starting with the Mediterranean Region encompassed by the study area. Twenty-five provinces in the Aegean and Mediterranean Regions, where pure hair goat breeding is widespread, were selected as the area of implementation of the action plan. The total number pure hair goats in these provinces is 3,472,000. It is planned to decrease the total number of pure hair goats to 1,010,000 with the implementations to be conducted between the years 2008-2012. This plan has been prepared without asking for the opinion of the people who raise pure hair goats. The human factor has been excluded in the resolving the difference between the forest resources and pure hair goat breeders.

Within the content of the action plan, there are also efforts for detecting the alternative sources of income instead of pure hair goats so as to enable the villagers to earn their living from these areas. Furthermore, areas without risk of erosion or floods and which are not suitable for forestation, but are suitable for raising goats due to the vegetation cover, shall be designated as grazing areas. Hence, some villagers will be permitted to grow pure hair goats. But, the fact that the action plan does not take into account the areas where pure hair goats are naturally bred is a significant deficit.

No productive forests may be composed with the kermes oak and boz pinal oak as this type of trees are not preferred by foresters. The areas including this type of shrub are defined as degraded forests in the forest management plans and are classified as fields to be reforested. From past to present, forest plantations geared towards industrial production have been established in areas where this type of shrub is distributed and where the slope of the land is convenient to be processed with machinery in Turkey. Although, kermes oaks have been removed along with their roots from their sites, they could not be eliminated. In places where it is not possible to conduct field work with machinery, afforestation work has been done manually, but could not successful due to the negative drawbacks in ecological conditions and the resistant nature of this shrub type. Today, it is aimed to afforest thousands of hectares of land in the upper basins of the Aegean and Mediterranean Regions, yet these areas are not suitable for establishing industrial forest plantations.

On the other hand, the “Action Plan for Preventing Goat Damage” recommends the raising of Saanen milk goats for breeding instead of pure hair goats in areas where goat raising will be allowed. The following statements of a pure hair goat breeder, stating: *“We have also bred Saanen goats as a family. But, the geographic and climactic structure of our region is not suitable for raising Saanen goats due to their physiological structure. We have quit because we were losing money. Now, we don’t know what to do”*, are thought-provoking and also reflect the desperateness experienced. This is a natural consequence of the ecological conditions of the region.

Conclusion

It is not possible to maintain the pure hair goat production system with the current forestry understanding in Turkey and, more importantly, it is not possible to transfer a local culture to the future generations. Efforts should be made for developing this production system instead of eliminating it. This study demonstrates the general action plan regarding the solution of the problems in the production system and the mode of intervening to the system. The forestry administration should modify its perspective on pure hair goats and pure hair goat raisers. Because, no animal species proposed in the goat action plan provides an alternative to pure hair goats and they may not adapt themselves to the ecosystem where pure hair goats live.

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Βόσκησι οικόσιτης κατσίκας σε δασικές εκτάσεις της Τουρκίας: Περιορισμοί, δυνατότητες και λύσεις

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Περίληψη

Στην παρούσα μελέτη αναλύεται η κατάσταση της οικόσιτης κατσίκας (*Capra hircus* L.) στην Τουρκία. Η εκτροφή της αποτελεί σημαντική ασχολία για τους κατοίκους της υπαίθρου και αποφέρει ικανοποιητικό εισόδημα και ποιοτικά προϊόντα. Σύμφωνα με τις οδηγίες της δασικής νομοθεσίας (Νόμος 6831), οι δασικές αρχές απαγορεύουν τη βόσκησι της οικόσιτης κατσίκας στα δάση και τις δασικές εκτάσεις. Αν και ισχύει ο νόμος αυτός υπάρχει πλήθος δικαστικών αγωγών εναντίον των κατοίκων που εκτρέφουν τα ζώα αυτά και στην περίπτωση που κριθούν ένοχοι καλούνται να πληρώσουν υψηλά πρόστιμα ή φυλακίζονται. Επιπλέον, ασκείται πίεσι από τις δασικές αρχές στους κατοίκους ώστε να σταματήσουν την εκτροφή της οικόσιτης κατσίκας. Υπάρχουν σημαντικά προβλήματα στη χρησιμοποίηση των δασικών πόρων από την οικόσιτη κατσίκα. Για την αποφυγή αυτών προτείνονται οι ακόλουθες οδηγίες ώστε η εκτροφή των ζώων αυτών να είναι σταθερή και παραγωγική και αιειφορική: 1) οι δασικές αρχές θα πρέπει να επιτρέψουν υπό προϋποθέσεις τη βόσκησι των ζώων αυτών στα δάση και τις δασικές εκτάσεις και θα πρέπει να περιλάβουν τη διαδικασία αυτή στα διαχειριστικά σχέδια για τα δάση, 2) θα πρέπει να σταματήσει η άσκησι της μη ορθολογικής βόσκησις ή αυτής σε απαγορευμένες εκτάσεις, 3) μελέτες διαχείρισης της βόσκησις θα πρέπει να ετοιμαστούν, 4) θα πρέπει να οργανωθούν οι κτηνοτρόφοι σε συνεταιρισμούς και να ακολουθούν τις οδηγίες για τη βόσκησι και 5) οι δασικές αρχές θα πρέπει να ελέγχουν αν η βόσκησι ασκείται ορθολογικά και αιειφορικά.

Λέξεις κλειδιά: οικόσιτη κατσίκα, δασικοί πόροι, δασική πολιτική, δασική νομοθεσία, Τουρκία