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Silvopastoralism in Turkey's Mountainous Mediterranean Region



Grasslands and forests are degraded in Turkey's Mediterranean Region (TMR), the center of the widespread traditional Yoruk silvopastoral system. Government efforts to halt degradation focus on afforestation, a policy that reduces the amount of land available to the Yoruks for their traditional livelihood system, which is further endangered by socioeconomic dynamics subject to the pressures of globalization. This silvopastoral system is examined with respect to policies that affect it and its potential for sustainability, with a view to regional community development. Interaction between this regional system, a component of traditional culture in the TMR, and current trends in globalization are noted, and the need for harmony between silvopastoralism and forestry is examined.

The natural setting

Silvopastoralism, a livestock production system that focuses mainly on the Anatolian black goat (native hair goat or *kil kecisi*), is a major component of rural culture in Turkey's Mediterranean Region (TMR). It was introduced to the area by the Yoruks, a (semi-)nomadic Turkish tribe that migrated to Anatolia from Central Asia in the 10th century. The TMR extends 700 km from Fethiye Bay in the southwest to the Elbistan Plain in the southeast (Figure 1). It is characterized by high mountain chains, plateaus, biological diversity, and local cultural values.

The Taurus Mountains—the western extension of the Himalaya—are the most prominent feature of the region (Figure 2). Seventy percent of the land in the TMR is mountainous. The productive alluvial soils located in the coastal parts and depressed plains do not constitute a major portion of the landscape. The TMR contains 28% of Turkey's total forestland, which can roughly be divided into 2 categories: "lower zone vegetation" consisting mainly of Calabrian pine and maquis, and "higher zone vegetation" that comprises European black pine, Cedar of Lebanon, and Cilician fir. Maquis vegetation can extend up to 800 m and Calabrian pine up to 1200 m, with the tree line at 2050 m. Frequent rain, improper grazing and agricultural practices, and deforestation exacerbate soil erosion.

Pasturelands in the TMR represent 9% of the region's total surface (Table 1). There has been a dramatic decrease in pasture area due to mechanized ploughing to gain cropland and an increase of animals grazing on the TMR's pastures to 3–4 times more than their carrying capacity. Villages rarely plan pasture management, which is left totally to the shepherds. The most degraded pastures are found on the least productive ecological systems and areas close to villages. They cannot be improved and managed efficiently in the short term. Larger pasture areas urgently require very careful improvement and management techniques. The government has made limited attempts to improve pastureland through artificial fertilization in some areas.

FIGURE 1 Location of the TMR. (Map by Andreas Brodbeck)



Land ownership and demographic patterns

In Turkey, 99% of the forest- and rangelands are owned by the state and other public entities. This ownership pattern is more or less the same in the TMR. Whereas forestlands are managed by the state forest enterprises, rangelands are allocated for common use by the villages. Turkey has 21,745,000 ha of rangelands, 1,014,100 of which are in the TMR. Most of the rangeland areas are close to forests.

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TABLE 1 Forest areas and pasturelands in Turkey's Mediterranean Region.

Quality	Cover	
	Forest area, including coppice (ha)	Pasturelands (ha)
Normal	2,386,439	100,396
Degraded	3,226,399	913,704
Total	**5,612,838**	**1,014,100**

Developed townships are located either along the coast or on the fertile plains, whereas less developed townships are situated inland and in the mountains. Urban areas along the coastline and in lowland plains receive immigrants from almost all other regions in the country. Approximately 1 million forest villagers moved out of the TMR between 1980 and 1997 because of governmental policy to protect forests, degradation of pasturelands, rural poverty, and industry and tourism policies. Immigration from rural areas to the cities has led to various problems with infrastructure, education and employment, and to environmental degradation. Demographic, economic, and structural problems have also occurred in rural areas.

Livestock production

Extensive animal husbandry, especially black goat breeding, has been the basis of livestock production in the TMR. The most significant advantages of black goat breeding are the use of otherwise "unused" ecosystems and low financial and labor inputs by the villages. According to ORKÖY (General Directorate of Forest and Rural Relations) data, 28% of the 8.7 million black goats in Turkey are found in the TMR. Although goat production has contributed considerably to the regional economy, it is experiencing a decline. In the TMR, seminomadic, transhumance and sedentary livestock production are based largely on silvopasture. Until recently, *yaylacilik*, a seminomadic form of production, was a more common practice than the others. Today, however, sedentary livestock production appears to be more common, largely because seminomadic communities have become settled villagers.

Different livestock production practices are the result of natural, economic, and social factors as well as historical development. Migration was a traditional way of life for ancient Turks mainly because of the biophysical requirements of livestock production. Nomadic and seminomadic lifestyles were brought to Anatolia and the TMR (where bioclimatic conditions were favorable) by the Yoruks, a Turkish tribe from Central Asia. Today,

FIGURE 2 Typical landscape in the Taurus Mountains, Turkey. (Photo by Sezgin Özden)



the mainly sedentary livestock production usually involves grazing black goats and sheep in relatively small numbers on coppice, maquis, and grasslands in forests.

Anatolian black goat production is important for several reasons: black goats produce milk, hair, and meat, are resistant to ailments, are not highly selective in terms of food, and have an ability to climb that allows them to reach practically all available grazing land (Figure 3). However, all pastureland in the TMR is degraded. The Yoruks traditionally graze their goats on natural pasturelands and in forests, but they also use forest products illegally as forage for livestock. An improvement of the silvopastoral system is needed to move toward more sustainable use of grassland resources.

The potential of the silvopastoral system

Originally, Yoruk communities were self-sufficient and did not produce for the market. Today, however, they appear to have close contact with the market envi-

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FIGURE 3 Anatolian black goat: this breed's agility and surefootedness makes it an ideal animal for pastoral production in the Taurus Mountains. (Photo by Sezgin Özden)



FIGURE 4 A Yoruk household in their tent. (Photo by Sezgin Özden)



ronment, which exposes them more to external influences and pressure, and leads, among others, to more intense use of natural resources in the hope of generating income. Traditional forestry practices promoted by the government are also problematical in the area, first because more than half of the forest cover in the TMR is unproductive in terms of timber production and second because they tend to prohibit access to resources for such communities as the Yoruks.

Today a comprehensive planning approach that takes into account the human, vegetative, and animal components of silvopastoralism is needed. It is vital that the younger generation remain willing to adopt and further develop silvopasture as a way of life and culture. At the same time, the crucial external aspects of the silvopastoral system need to be continuously monitored. Policies on forestry, agriculture, and livestock growing directly affect the sustainability of the silvopasture system.

Given the existence of "inflationary pressures" in the Turkish economy, outlays for controlling silvopasture and raising its productivity would clearly pay off sooner than expenditures for plantation and afforestation. This could help ensure villagers' participation in and the state's support for silvopastoral management. Furthermore, there is a close relationship between silvopastoral practices and production of organic foods, for which markets are expanding noticeably. There has been a lack of adequate emphasis on organic foods in local forest and rangeland resource management. The TMR, in which the tourism sector is very active, must be considered as a source of organic foods, with silvopastoral products, hunting and wildlife products, and medical and aromatic plants.

Finally, and perhaps most importantly, it must be emphasized that forestry and silvopasture have sociocultural implications. Carefully planned forestry and silvopasture can strengthen the currently eroding sociocultural framework within which mountain communities such as the Yoruks can develop adapted livelihoods and can help limit the loss of cultural diversity in the TMR (Figure 4).

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Persistent problems

Agriculture on fragmented, unproductive and remote lands appears to be a major reason for rural poverty and migration in the TMR. Other problems in rural areas include excessive population growth, lack of entrepreneurship and social organization, inadequate education, lack of financial resources for rural development, and lack of institutional perception. Misconceptions in forestry exemplify this lack of institutional perception. For example, forest management approaches that oppose silvopasture in general and Anatolian black goat breeding in the TMR in particular still persist, based on the argument that this leads to the "destruction" of forests. Largely because of this conditioned reaction, there has been no quest for wise silvopasture management. Ironically, neither have any steps been taken to bring the silvopastoral production system to an end.

The negative impacts of globalization exacerbate these problems. It could be argued that the process of globalization has undermined economic self-sufficiency. Certain economic sectors, namely agriculture and livestock growing, have experienced serious difficulties as a result. Moreover, the pressure of globalization appears to be responsible for the disappearance of local and regional cultures shaped for centuries or even millennia. As in the case of natural resource management, the sustainability of cultures depends on the sustainability of their social, economic, and ecological bases and the self-reproductive capacities of their systems of production.

Outlook and recommendations

Certain rural areas in the TMR do not seem suitable for silvopastoralism. Excessive emigration to other regions has deprived numerous villages of their "productive" population, hindering the success of silvopastoral activities. Determining the viability and outlook for silvopasture in the TMR will require a master land-use plan that takes into account all interrelated sectors, including forestry, water, wildlife and hunting, recreation, and ecotourism.

The absence of legal stability and institutional coordination is also a major impediment to sustainable silvopastoral management. In Turkey, the authorities responsible for forest management, range management, and water management operate with minimal coordination and cooperation. One solution to this bottleneck would be to designate a higher Watershed Management Authority responsible for integrated planning and coordination among natural resource authorities. There is also a need for regulations to establish village associations and draw up contracts for rural development projects with villages or village associations.

Moreover, the sustainability of silvopastoral systems in the TMR should be secured through establishment of village cooperatives involving the market, price supports, and more effective and extensive education. A focus on "growing vegetation" in lieu of growing trees or traditional afforestation activities could promote silvopastoral practices. Because the forestry administration has adopted a policy of protection or afforestation on open areas within and adjacent to forestlands, conflicts have occurred in forest–society relations, and compromise appears difficult.

It appears that if the current course of development in the TMR continues without mitigating interventions, consequences such as the disappearance of historical and cultural features, erosion of potential for tourism, and exacerbation of social problems in urban areas due to excessive migration from rural areas will be inevitable. Moreover, income will decline because of failure to exploit natural grazing opportunities and the potential for organic food production. Interventions need to focus on in situ development of the essential components of the silvopastoral system—human, vegetative, and animal.

The issue of silvopastoral sustainability in the TMR thus calls for a multidimensional, comprehensive management approach. Globalization represents the greatest threat to this production system and its multidimensional benefits. There is an urgent need to adopt vigorous measures to counter this threat and prevent adverse effects.

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FURTHER READING

Brun A. 1977. Espaces forestiers et espaces pastoraux: Le pâturage en forêt. *Économie rurale* 118:57–62.
Gilbert Y. 1989. Élevage, forêt et société. Analyse socio-historique. *Forêt Méditerranéenne* 11(3):203–255.
Özden S. 2000. *Economic Analysis and Development Possibilities of Grazing Systems in Forests* [PhD Thesis, in Turkish]. Istanbul: Department of Forestry Economics, Institute of Natural Sciences, Istanbul University.
Sharrow SH, Fletcher RA. 1994. *Trees and Pastures: 40 Years of Agrosilvopastoral Experience in Western Oregon.* Agroforestry and Sustainable Systems: Symposium Proceedings, August 1994. United States Department of Agriculture, National Agroforestry Center (NAC). www.unl.edu/nac/aug94/silvo-40-years.html; accessed in February 2003.

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