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## Goat production systems of Turkey: Nomadic to industrial

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## ABSTRACT

Goats play an important socio-economic role in many marginal rural areas of the world. Indigenous goat breeds have taken an important role in the livelihood strategies of impoverished farmers, especially those in harsh, remote areas. Those roles include their use as security and diversification of assets, social and cultural functions. They are also valued for their productive performance, adaptation and disease resistance. Turkey is one of the leading countries in the world for goat population and production. Hair, Kilis, Angora and Shami are the main goat breeds of the country. Hair goats are raised in many parts of the country but are concentrated particularly in the mountainous regions country, while the Angora breed is concentrated mainly in Central Anatolia. Kilis and Shami goats are known for their higher milk yield and litter size and are mainly focused in the south-east region of Turkey. Apart from these four breeds, the minor breeds such as Honamlı are located in the Bolkar Mountains in the Mediterranean region (specifically Antalya, Isparta and Konya) and the Norduz breed in Van province. A limited number of dairy goats such as Maltiz, Saanen and their crossbreds are located in the Aegean and Marmara regions of Turkey. The population of goats in Turkey is about 11 million head. Hair goats make up approximately 10 million of the total number and the rest make up the balance. There are many reasons for goat production in Turkey, including the country's geography and ecological condition, as well as the socio-economic situation of the rural communities. Goats have been raised in the Anatolian Plateau for many centuries providing dairy, meat, hide and hair to the inhabitants. It is the main source of animal protein for the rural masses in the mountainous regions of the country and less so for the urban population. Goats provide approximately 3% of the total red meat, 2.5% of the total milk and 18.5% of the total hide production for Turkey. They are also the only source of mohair and animal hair production in the country. Although their number and economic significance has decreased over the years, goat breeding still plays an important socio-economic role for the people living in remote areas of Turkey. Investments in intensive goat enterprises have increased significantly in the last few decades in Turkey although marketing margins across the value chain between producers, middlemen, processors, and consumers unjustifiably irregular.

## 1. Introduction

Goats are an important component of the livestock sector for the Anatolian population, integral to the cultural, social and economic

livelihood of the rural community. Indigenous goat breeds have taken an important socio-economic role in the livelihood strategies of the poor farmers, especially those in rural and hard-to-reach areas. Those roles include their use as security and diversification of assets as well as

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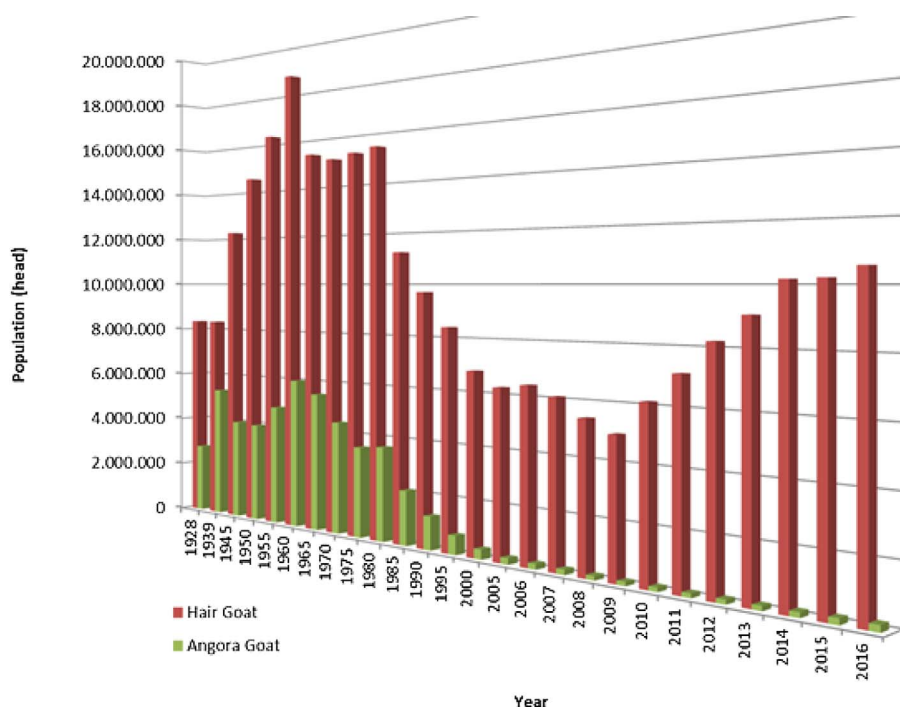


Fig. 1. Turkey Goat population situation between 1928 and 2016.

social and cultural functions. Goats are also valued for their productivity, adaptation capacity and disease resistance. Turkey is one of the leading countries in the world for goat production (Daskiran, 2000).

The total number of goats in Turkey is around 11 million head (Fig.1). This number is made up of approximately 10 million Hair Goats and the rest made up of other breeds and crossbred animals including 220,000 Angora goats, 500,000 Kilis Goats (Anonymous, 2016).

There are many reasons for such a large number of goats to be present in Turkey. Geographical and ecological conditions, as well as the socio-economic situation of most small ruminant farmers make it very conducive to raise goats in the Anatolian Plateau. Goats are multipurpose animals which have been bred for milk, meat, skin and hair for many centuries in Anatolia (Table 1). Goat cheese and meat are the main sources of animal protein for the inhabitants of the Turkish mountainous areas and surroundings (Yalcin, 1986).

As can be seen in Figs. 2 and 3, goat meat and milk production rate is limited in Turkey compared to total animal production figures. However in recent years there has been a steady increase in investment from the private sector for goat production. Goats presently provide approximately 3% of the total red meat 2.5% of the total milk, 18.5% of the total hide production in Turkey. They are also the sole source of mohair in the country. Although the number and economic importance of goat enterprises have decreased in Turkey over the past few decades, goat breeding still plays an important socio-economic role for the people living in remote rural and mountainous regions of the country.

The density of the goat population increases proportionately with

**Table 1**  
Production of various goat products and their proportions in the total production in Turkey (Anonymous, 2015)

Product	Production from goats	Total production	Proportion in the total
			production (%)
Red meat (tons)	33.990	1.149.262	2.96
Milk (tons)	481.174	18.654.682	2.57
Skin (number)	1.999.241	10.774.120	18.5
Mohair (tons)	325	325	100.0
Hair (tons)	5.569	5.460	100.0

the altitude of the habitation, mainly due to the flora of the geography. In forest and shrub areas, where cultivation is limited, goats predominate land use. They are the only breed of farm animal which can utilize such marginal vegetative resources economically. People living in such regions keep goats mainly for their own sustenance and also carry out small scale arable farming to very limited degree. The Angora goats however are concentrated in central Anatolia, around the province of “Ankara” where it also takes its name. Apart from these two breeds, there is another endemic breed called Kilis which is raised in the south-east region of Turkey and used mainly as a dairy breed. The minor breeds i.e. < 100,000 head, such as Honamlı are located in the Taurus Mountains of the Mediterranean region of Turkey (Antalya, Isparta and Konya) and the Norduz breed which is found around the Van province. A limited number of Maltz, Saanen and crossbred dairy goats are also used mainly for cheese production in the Aegean and Marmara regions. Some descriptive characteristics of the Turkish native goat breeds can be seen in Table 2 (Daskiran and Koluman, 2014).

## 2. Results and discussion

### 2.1. Goat husbandry systems in Turkey

Goat husbandry systems are comprised of small-size flocks that are managed with family labour. Indigenous breeds are the main components of these systems. These breeds are a product of long term natural selection and are well adapted to their environment, displaying desirable characteristics such as resistance to diseases and parasites, good flocking instinct, ability to travel long distances in search of feed, high tolerance to adverse climatic conditions, endurance to droughts and to low and fluctuating nutrient availability (Gürsoy, 2006).

Different management systems prevail in goat husbandry, depending on the environmental and social conditions. One of these is extensive production where a large is kept fairly constantly of poor pasture or harvested grain paddocks and is attended either by a hired shepherd or by one of the family members. Small component of the produce (meat or milk) is consumed by the family and the rest sold to the local market mainly as cheese. The number of such production systems is not many in the country and is usually referred to as “Horizontal transhumance”. In these systems, goat herds are sometimes mixed with

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