Grazing Problems in Turkey

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Permanent pastures and meadows occupy about 75 million acres in Turkey. This acreage exceeds that used for all cultivated crops, about 62 million acres, out of a total land area of 192 million acres. Considerable grazing is also obtained from stubble fields after grain harvest or from weedy fallow, and from about 5 million acres of forested land. The total forested land in the country is about 26 million acres.

Approximately 80 percent of the people live in villages and are engaged in agricultural pursuits. Their principal activities are the production of grain and other cultivated crops and the raising of livestock. Animal products include meat, cheese, and milk as important food items for their regular diet; wool and mohair for clothing and carpets; and leather for a multitude of uses. About 20 percent of the people live in cities engaged in industry, business, and government administration.

Grazing Methods

Herding of livestock prevails throughout the country. Fences are not used to confine animals to grazing areas. Under the village system livestock are privately owned but the animals graze together on community pastures (Figure 1). The cultivated area is in private ownership but the grazing is done on public land and fees are not required for the grazing rights.

Trend in Livestock Numbers

Livestock numbers have increased considerably during the past 10 years. Goats have increased by 35 percent and make it especially difficult to manage the rangeland. Further complications occur from the mixed classes grazing the common range (Figure 2). Water buffalo, cattle, camel, sheep, donkeys, and horses in addition to the goats rely almost entirely for their livelihood upon grazing the grass and browsing the brush. Cultivation has increased to now occupy 20 percent more land during the past 10 years. This

![Figure 1. Bermuda grass sod closely grazed by water buffalo in south central Turkey, Adana province. This level, fertile area was grazed year long by 500 head, a mixed herd of water buffalo and cattle, on 1200 acres with cotton by-products including hulls and seed fed as supplement.](image-url)
Condition of the Grazing Land


"The pasture lands have been assigned as common land to the people who want to raise livestock. However, there is no grazing management. Because of the heavy and early grazing, the basic plants of the pasture lands have disappeared. As a result of research, it has been found that the vegetation of the area has consisted of valuable plants. Some of these plants like pasture type Medicago, Onobrychis, Lotus, Hedysarum, Bromus, Dactylis, Alopecurus, Festuca, Poa, Andropogon, Agropyron, and Sanguisorba species are still alive under the weeds and spiny vegetation in places which animals cannot reach. As a matter of fact, we have found the parent material in these kinds of places. We have been propagating this material in order to improve the pastures of the region.

Today, these valuable plants are about 8 percent in the pasture land of the region. The other 92 percent of the vegetation belongs to some useless plants like Bromus tomentellus and Aegilops species. They invade the places of the better plants.

"The places in which these plants cannot stand, Stipa, Artemisia, and Astragalus species can be seen."

Soils and Climatic Conditions

The soils of central Turkey mostly belong to the Reddish Brown and Brown group (Oakes, 1954). The texture of the soils is fine. Much lime is present in the composition of the soil. The elevations range from 2,500 to about 5,000 feet above sea level in this plateau area. Precipitation comes mostly during winter and early spring and totals about 15 inches per year.

The coastal section includes areas that border on the Black, Aegean, and Mediterranean Seas. Average annual rainfall varies from 24 inches at Adana in south Turkey to 100 inches at Rize in the northeast. The soils consist mainly of calcareous clayey de-

Potential for Forage Production

No part of Turkey can be classed as true desert. Precipitation and soil are generally adequate for good growth of grasses and legumes. The lime content in much of the soil especially favors legumes. Turkey and adjacent countries of the Middle East are the home of many legumes now cultivated throughout the world. The flora is especially rich in species of clover, Trifolium, and alfalfa, Medicago. In my trips through the country 706 collections of seed were made; legumes contributed 77 percent of this number and grasses 22 percent. The early introductions were usually made from low elevations in the Mediterranean Region to low elevations in the New World. We are now in need of forage species adapted to our mountainous grazing lands and to our drier rangelands. Special drought and cold resistance is needed. The great variability in ecotypes existing among the legumes in Turkey lends encouragement to the possibility of introducing new strains that will improve the grazing areas in the temperate zone especially with the Mediterranean type of climate where precipitation comes mainly in winter and spring, and summers are hot and dry.
Improvement Practices Being Undertaken in Turkey

A grass and legume variety testing program was initiated in 1952. Seed was obtained from the United States through I C A and from other parts of the world through FAO of the United Nations. These varieties are being compared with their local varieties and wild types. A few of the best varieties are being increased on State Farms for distribution to villages to improve the grazing land.

Legislation is being enacted to provide opportunity for cooperative agreements to be made between the villages with community pastures in need of improvement and the ministry of agriculture to help provide facilities for a rangeland development program to be carried out. The ministry of agriculture will furnish seed and certain equipment and technical assistance in planning. The village people will agree to carry out recommended methods of land preparation and seeding practices for a period of 10 years. Improvements to the grazing land may include controlled and rotation grazing and other treatments as mutually agreed by the village people and the ministry of agriculture.

Several livestock improvement programs are being conducted by the Turkish government. For example, Montafano cattle were imported from Switzerland. These are raised on government farms for distribution to the villagers to help them improve the breeding of their cattle. Also, a goat breeding research station is maintained at Lalahan near Ankara for the improvement of the native Angora goats which are very important for mohair production.

Several hundred technicians from Turkey have been trained in the United States and in Europe. The I C A through mutual assistance projects has trained many in agriculture, engineering, and related fields who work for the Turkish government in administrative or teaching positions.

Future Developments

The outlook is bright for further development of Turkey by industrialization. This movement should enable them to manufacture more of their electrical and mechanical equipment thereby reducing the costly importations of such equipment. Construction of dams and reservoirs for irrigation and hydroelectric power has helped but the opportunity is excellent for more projects of this type to be developed.

Greater industrialization should benefit agriculture by reducing the percentage of the people living in the villages. More people will leave the rural areas when jobs become available in factories. By reducing the size of the rural population a greater acreage of arable land will be available per family unit. These larger units will then favor the use of modern equipment. The present situation precludes mechanization of agriculture in some cases where it might otherwise be justified.

A reduction in number of livestock accompanied by an increase in attention to nutritional requirements and improving the grade of product should go hand in hand with the range improvement projects already discussed. It is hoped that these industrial and agricultural developments might occur simultaneously and provide a higher standard of living for the people.

LITERATURE CITED


Overcoming the Problems of Range Livestock Production in Southern South America

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Range livestock production is a vital phase of the economy of the seven countries of southern South America. Range beef production provides a good income for many ranchers in Uruguay, Brazil, Paraguay, Argentina and Chile. Sheep production on the steep slopes in the highlands of Peru and on the plains of Argentina and Uruguay as well as in other southern South American countries provides a livelihood for many other ranchers. On many ranches both sheep and cattle are grazed.

Range, or native grazing lands, cover more than 75 percent of the land areas of these countries. Elevation, climate, vegetation and use vary tremendously. There are the low elevation humid subtropical hill and coastal areas of southern Brazil, including the natural growth on the periodically cultivated rice paddies. There are extensive areas of Parana pine on the hills of southern Brazil where forage is produced under the trees. Vast temperate prairies and plains occur as the rolling plains of Uruguay and western Rio Grande do Sul, the humid prairies southeast of Buenos Aires or in the dry Pampa of Argentina where the native range has not been plowed to produce grain. The semi-arid plateaus of Brazil form extensive plains which produce good forage for both cattle