

RANGELANDS OF PAKISTAN

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Report



The term "Range" refers to a vast area supporting natural vegetation which is suitable for grazing and browsing by livestock. Range Management is the application of scientific knowledge on range lands and related resources for obtaining maximum feed for a variety of livestock on sustained basis. Livestock herding is one of the oldest and the noblest professional pastime of the human race. This is particular to Muslims because they originated from a land which was proverbially known for raising and rearing souls in Muslim history did acquire the profession of a shepherd at one time or the other to sustain themselves and their families. Actually a noble man was known and respected by virtue of a large herd.

Pakistan have a total livestock population of about 120 million heads, composed primarily of goats, sheep, cattle, buffaloes, camels, horses, donkeys and mules. About 3 million people living from Himalayas to the coast of Arabian Sea depend on livestock for their bread and butter and are engaged in its herding and rearing.

A country where 65 to 70 percent of the total area consists of mountains, gullied foot hills, arid waste and deserts, can never achieve harnessed to the advantage of its people. These areas which can be potential source to feed millions of livestock of this country have been put to extreme misuse in the past leading to their deterioration almost to the point of no return. Original natural vegetation has been ruthlessly destroyed by the cultivators and the grazers alike. These tract which are range lands merely in name have born the burnt of not only the local sheep, goats, and cattle, but also have served the insatiable appetite of thousands of grazing animals from across N.W. F. P, which streak into the border provinces, get fattened on some of the richest range lands of the country and are driven back by the owner when nothing is left. This yearly cycle of devastation has been perpetrated on this country since ages. The consequences of such un-thoughtful use of this great asset can be seen all over in the form of denuded hill sides and degraded pastures. The main range resources are described below:

1- Alpine Pastures

The areas lying above an altitude of about 3000 and below the perpetual snow constitute alpine pastures. These are characterized by short, cool growing seasons and long, cold winters. The vegetation is mostly dominated by slow growing perennial, herbaceous and shrubby vascular plants and extensive mats of cryptogams. Much of the landscape of the alpine pastures is rugged and broken with rocky, snowcapped peaks, spectacular cliffs and slopes. However, there are also many large areas, gently rolling to almost flat topography.

2- Trans- Himalayan Grazing Lands

These grazing lands are spread over Northern Mountains in Dir, Chitral, Swat, Gilgit, Chilas and Skardu districts. The region constitutes a series of high mountain ranges of Karakorum, Hindu Kush and Pamir. The altitude varies from 1500 to 8600 meter and includes 19 peaks over 7600 meter, such as K-2, Nanga Parbat, Rakaposhi, and Trichmir. The area has rugged, steep and dissected slopes, and narrow valleys, subject to active geologic erosion. The terrain is naturally unstable. Landslides and rock falls are very common. The climate of the area is that of a mountain desert with bitterly cold winters and hot dry summers. The climatic variation in the area is greatly influenced by altitudinal differences. Lower altitudes experience marked diurnal as well as seasonal temperature variations and scanty precipitation. The areas between 2300 and 3300 meter receive sufficient snow and enjoy a temperate climate. Areas above 3300 meter are very cold with a limited growing season. Most of the area is beyond the reach of summer monsoon rainfall. Average annual rainfall (100-300 m.m) in valleys is mostly received during winter and early spring. Crop production, livestock rearing and forestry are major land uses in the area. Maize, rice, wheat and barley are important cereal crops. Marginal and newly reclaimed lands are used for fodder production. Livestock grazing is done in alpine pastures and

forests. The areas are subject to heavy pressure by livestock as well as a shortage of fuel wood. Alpine pastures are in good condition but due to environmental limitations, the growth period is short. Low lying ranges are in fair to good condition.

3- Himalyan Forest grazing lands

These lands cover Siran, Kaghan, Neelam and Jhelum valleys. These areas can be ecologically divided into moist temperate and sub tropical humid zones. The wet temperate zone occurs between 2000 meters to the timber line. Kail, deodar, spruce and fir forests are abundant in this zone. Jammu, Kashmir and Hazara have extensive wet temperate areas. These areas receive plenty of snow during winter. About 3-4 meters of snow fall has been recorded at Kaghan, Shogran, Naran and Nathiagali. Most of the areas in this zone receive more than 1000 mm during the monsoon which creates heavy soil erosion as the topography is steep and disturbed by unscientific cropping. Summers are cool but winters are very cold.

The sub tropic humid zone is represented by "chirpine" but "kail" forests also occur on higher slopes. The altitude varies from 1000 to 2000 meters. Rainfall is usually more than 1000 mm. Flat and plain areas are fit for the cultivation of wheat, rice and maize with occasional irrigation. Most of the areas are subject to soil erosion. Forestry, cropping and livestock are the major land uses. As the areas receive monsoon rainfall, plenty of soil moisture is available for crop cultivation. Apple orchards cover a large area. Bluepine and chirpine forests cover an extensive area throughout the tract.

4- Pothar Plateau

It includes Islamabad, Rawalpindi, Chakwal, Jhelum and Attock districts. It covers the area of 1.5 million hectares. This tract lies between Jhelum and Indus River. Altitude varies from 300 to 1500 meters. Ecologically, it is located in sub tropical semi arid to sub humid zone. Geomorphologically, the plateau can be classified into mountains, hills, rock plains, weathered rock plains, piedmont plains, loess plains, and river plain. The soils of the area have developed from wind and water transported materials consisting of loess, old alluvial deposits. Some of derived from shale's and sandstones.

The climate is temperate in the northeast to sub tropical semi arid in the south west. Annual rainfall varies from 250 mm in the southern part of Salt Range to over 1500 mm at Islamabad. Temperature extremes are 45 C in June to often drop below freezing during January.

Dry land farming is the main land use. Wheat, Maize, Sorghum, millets, groundnut, gram, mustard, sunflower and soybean are the major cultivated crops. Livestock rearing is the main component of the rural economy. The tract possesses scrub forests of Kala Chitta, Margala Hills, Pabbi Hills, and Salt Range which are gradually disappearing due to excessive exploitation for fire wood and grazing by livestock.

5- Thal Desert Ranges

It stretches over an area of 2.6 million hectares. The tract is bound by the piedmont of the Salt Range in the north, the Indus River flood plains in the west and Jhelum and Chenab River flood plains in the east. Ecologically, it is situated in the tropical plains. The mean maximum and minimum temperatures recorded in the tract are about 44 C and less than 0 C respectively. The wind affects the amount and distribution of rainfall in the desert, most of which is received in monsoon. It varies from 133 mm in the southern areas to 30 mm in the northeastern region of the tract. The soils are alluvial with sandy textured sand dunes covering 50 to 60 percent of the area. Continued heavy grazing and ruthless cutting of trees and shrubs have resulted in the complete disappearance of several desirable species. The topsoil has been eroded by wind erosion and sand dunes have become unstable. The vegetative cover and forage production have declined substantially. Geo-morphologically, this area consists of sand ridges, abandoned channels and flood plains.

Livestock rearing is the major occupation of the people. With the construction of Thal irrigation canal, about 1 million hectare sand dunes have been converted into productive cultivated areas. However, about 1.6 million hectare is still used as grazing lands. In years of normal rainfall,

sand dunes are used for gram, water melons, millets, and guar cultivation. Persian wheels are very common in these areas.

6- Dera Ghazi Khan Rangelands

These rangelands lie between the Sulaiman Range and the Indus River over an area of 0.5 million hectares. Average slope is gentle. A few sand dunes are also found. The general climatic regime of D. G. Khan Tract is typical of very arid sub mountainous, sub tropical area. Ecologically, it is a tropical plain. Climate is broadly characterized by cold winters and very hot summers. Average rainfall varies from 75 to 162 mm. Most of the rainfall storms from the high mountains (1540-3400 m) and lose their moisture before reaching range areas which are at lower altitudes (150 m).

Most of the herbs and annual plants start growing in early spring and complete their life cycle with in two to three months. Deterioration of the rangelands has been associated with irregular grazing by nomadic and local livestock and illicit cutting of shrubs for fuel and fodder. Most of the range lands are in poor condition. Shrubs, grasses and herbs are the best used by different kinds of livestock.

7- Cholistan Desert Ranges

This desert is located in Bahawalpur, Bhawalnagar, and Rahim Yar Khan Districts. It covers about 2.7 million hectares. Its north and south boundaries are surrounded by areas irrigated by canals. On the east, it is situated at the Indian Rajasthan Desert. Ecologically, it is tropical arid sand desert. The area is subjected to wind erosion. Rainfall is erratic and ranges from 100 to 200 mm. Mean minimum and maximum temperature are 20 to 40 C, respectively. Soils of this tract are saline, alkaline and gypsiferous. The area consists of shifting and dunes. The dunes may reach to the height of 100 meters.

Livestock production is the major profession. Wildlife is hunted during the winter. Unavailability of drinking water is a serious problem as under ground water is brackish. Aridity precludes dry land farming.

8- Tharparkar Desert Ranges

This desert is situated in Tharparkar, Sanghar and Mirpur Khas Districts. It covers about 2.65 million hectares. Ecologically, the tract can be categorized as tropical thorn desert. The four major landforms are sand dunes, valleys, flat alluvial plains and rocky hills.

The Thar Desert is subjected to heavy soil erosion partly due to dry land cultivation. In the northwestern and southwestern dunes windblown sand is a natural phenomenon. The landforms and soils of Thar are similar to Cholistan Desert. The climate is arid. Rainfall is scanty and erratic and mostly received in monsoon season. The area has received a severe drought for the past four years. In a normal year, rainfall varies from 150 mm in the north to 400 mm in the south near Nagarparkar. Summers are hot (45C) and winters are mild (5C).

Livestock rearing is the major occupation this area. Dry land farming is also practiced where annual rainfall is adequate. Millet, sorghum and castor crops are cultivated in the dune valleys. Forestry is limited to irrigated areas and riverbank belt. Small villages are found where water ponds are found. Underground water is 200-300 meter in depth and brackish.

8- Kohistan Ranges

These ranges are situated in Karachi, Thatta, Dadu Districts and part of Lasbela District. They cover about 2.3 million hectares.

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