CHAPTER 1

INTRODUCTION

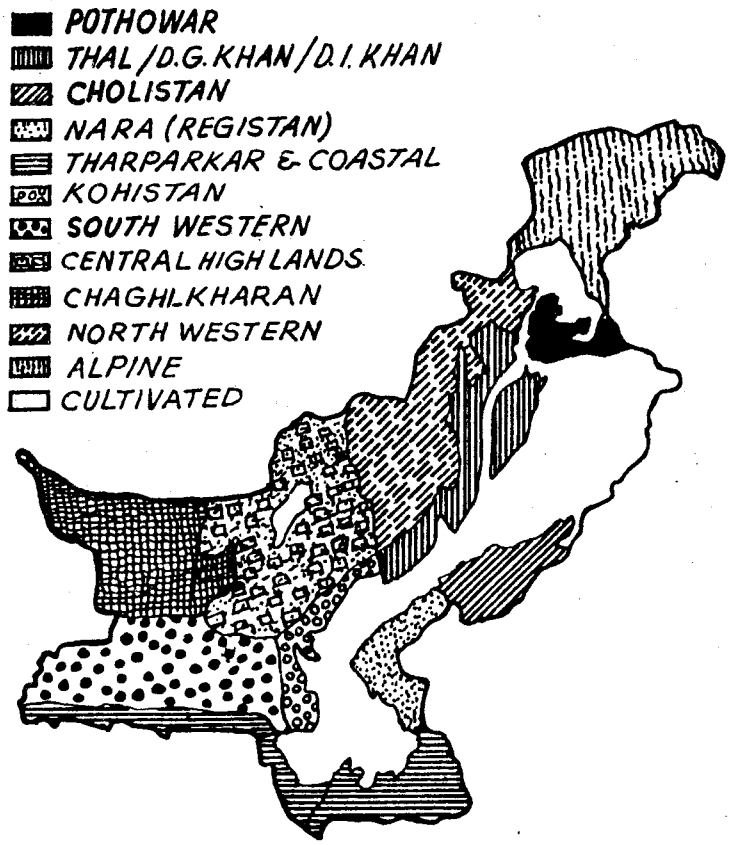
The term Range refers to a vast area supporting natural vegetation which is suitable for grazing and browsing by livestock. Range Management connotes application of science on range lands and related resources for obtaining maximum yields on sustained basis.

The range areas of Pakistan are not only extensive but are also highly variable in terms of soils, climates, vegetation and productivity. Poor access, light textured soils, arid to semi arid climate, poor and open scrub vegetation and low productivity are characteristic features of these range lands. Decline in forage yield has naturally resulted in reduced livestock production. In contrast to the usual poor condition of extensive range areas of the country, the river banks and adjoining areas are, however, reputed to be high potential areas and are considered ideal sites for rearing livestock. Pothowar upland (districts of Islamabad, Rawalpindi, Jhelum, Chakwal, Attock, Khushab and Gujrat) and Hill slopes of Central and Northern NWFP are other examples of high potential range areas of Pakistan. Good quality and nutrient rich forage shrubs and grasses are quite frequent in these areas. A little protection and some investment can bring significant improvement of these range areas.

Range Management or tending of livestock on natural grazing lands is one of the oldest and most respected profession of man in general and of muslims in particular. All messengers of Allah (may His choicest blessings and peace be upon them all), for example, are reported to have tended livestock on natural grazing areas especially during early formative years of their lives. It seems certain that their pastoral experience must have contributed in strengthening and polishing inherent sterling qualities of their character and must have made them best prepared for receiving divine messages and discharging their immeasurably gigantic prophetic responsibilities successfully. The pastoral influences on Pakistan's culture and traditions are easily visible everywhere; the folktales of Heer-Ranjha and Sohni-Maihinwaal being good examples of this influence. Nomadic grazing (irregular and uncontrolled grazing by migratory herds) and Agro-grazing (controlled grazing by small livestock herds in cultivated tracts) are familiar form of Range Management in present day Pakistan. Range Management as a science is, however, new to this country. It took its start in mid fifties at a place called Mastakh near Quetta, Balochistan.

The graziers of Pakistan are in general neither aware nor interested in proper range-livestock management and improvement. This indifference of graziers to scientific management and improvement of range livestock and range areas is due to many reasons such as traditions, lack of private ownership and low potential of range lands. The graziers themselves hurt range productivity by keeping too many unproductive livestock heads to be supported by the area. Owning large livestock herds, irrespective of quality of animals, still continues to be their status symbol. Lack of private ownership discourages the graziers from adopting any precautionary measures and prevents any investment for improvement measures. Moreover, minimum level of inputs required for productivizing these deteriorated low potential range areas is simply too high to be borne by the grazier. Geographic distribution of Pakistan's range areas is shown in figure on the next page.

Although high potential range areas are well represented, extensive desert/semi-desert ranges are found in Punjab (Thal, D.G. Khan, Cholistan), Sind (Nara, Tharparkar, Kohistan) and Balochistan (Central high lands, South-western Chaghi - Kharan). With the possible exception of deserts of Chaghi - Kharan, most of Pakistan's deserts are man-made. These deserts are the result of centuries of overuse and misuse such as over-grazing, over-cutting, excessive lopping, trampling, uprooting, burning and litter/fuel collection etc. The productivity of all these range lands has, therefore, been adversely affected and these are presently producing only 10 to 50 per cent of their potential. Further more, almost all range lands are subject to wind and water erosion. The current trend of retrogression/deterioration of these range lands is still in progress. Consequent outcome of negative range trend has taken some or all of the following forms.

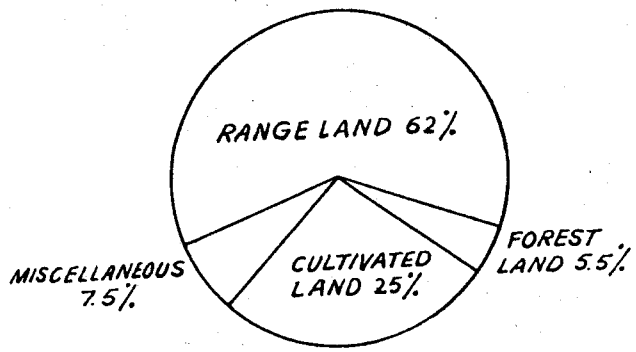


- Decrease in number of desirable forage species.
- Reduction in their vigour; stunted and deformed shape.
- Decline in their ability to compete and reproduce.
- Shortening of growing and grazing periods.
- Increase in number of undesirable species.
- Deterioration in watershed values, reduction in waterholding capacity of soil.
- Depletion of wildlife.

IMPORTANCE

It has been reported by National Commission on Agriculture in 1988 that out of 79.61 million hectares

of Pakistan's land area, about 49.5 m. ha. constitute range lands. These range lands extend from Alpine pastures in the north to the coastal ranges in the south and thus represent a wide variety of soils, climates and vegetation. Cultivated lands, on the other hand occupy about 25 per cent and forest lands cover only 5.5 percent. Range lands thus constitute single largest (62%) land use in Pakistan.



Region wise distribution of range lands is as follows.

Region	Total area (m.h)	Range area (m.h)	Percentage
Punjab	20.63	8.20	40
Sindh	14.09	7.80	55
NWFP	10.17	6.10	60
Balochistan	34.72	27.40	79
Sub total	79.61	49.50	62.20
Northern Areas	7.04	2.10	30
Azad Jammu and Kashmir	1.33	0.60	45
Sub total	8.37	2.70	32.20
Total	87.98	52.20	59.30

Most of 91.091 million livestock heads are supported by range lands either wholly or partially. One local survey and casual observations strongly suggest that range lands of Punjab, NWFP and Azad Kashmir provide forage requirement of about 30-40 per cent of total livestock heads. Similar figures for Sindh and Balochistan are estimated to be about 60 and over 80 per cent respectively. Recently National Commission on Agriculture (1988) has reported that about 19 million sheep and goats directly depend on rangelands. This number is roughly equal to about 40 percent of total number of sheep and goat in the country.

Livestock wealth of Pakistan (estimated for 1992)

Cattle	17.560	million heads
Buffaloes	15.767	" "
Sheep	23.338	" "
Goats	30.065	" "
Camels	0.962	" "
Horses	0.389	" "
Donkeys	3.010	" "
Total	91.091	million heads

(Estimated standing value Rs. 18100 - 23100 million)

According to National Commission on Agriculture (1988) about 200,000 families directly depend on grazing their livestock on Rangelands. It has been estimated by the authors that an equal number of families depend on grazing their livestock on irrigated farmlands. It is evident that grazing of livestock affects the lives of about 2.5 million people of our country.

The contribution of livestock industry which largely depends on natural range lands to the Gross Domestic Production (1987-88) is as follows.

Sector	Estimated contribution (in billion rupees)	Percentage
GNP	649.132	
Agriculture	143.917	22.2
Livestock (stall fed cum grazing animals)	47.393	07.3
Forestry	0.705	0.1
Major farm crops	65.275	10.1
Minor farm crops	26.586	04.1
Fishing	3.958	0.6

The above figures clearly indicate the importance of livestock industry which ultimately depends on range lands as its base.

Importance of range lands and their products is further highlighted when one realises that about 66 percent Pakistanis suffer from deficiency of proteins which is mostly a product of range lands.

[illegible] component	Consumption in g/head/day at desired level	at present level
[illegible] protein	68.5	45.8
[illegible] protein	34.2	12.2
[illegible]	102.7	58.0

TEST QUESTIONS

1. Define the following.
   Range, Range Management.
2. What are the major characteristics of Pakistan range lands ?
3. Briefly describe high potential range lands of Pakistan.
4. Write a note on the importance of Range Management in Pakistan.
5. Why Pakistani graziers don't take active interest in the improvement of range areas ?
6. Write a note on general condition of our range lands.
7. What are the consequences of retrogression of range vegetation ?
8. Describe regional or geographic distribution of national rangelands of Pakistan.
9. What is the relationship of Ranching with our Culture ?
10. Why is Range Management more difficult than other commercial agricultural land uses?