

Range Management and Shepherds in Baluchistan, Pakistan

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Baluchistan, a Province of southwestern Pakistan, is a country of extensive rangelands operated by hospitable, capable sheepherding tribes. Many of the shepherds are largely untouched by the modern world, but they nevertheless occupy a strategic area in global politics. Baluchistan is also a likely new source of herders for sheep industries of more developed countries.

Baluchistan's Climate, Topography, and Agriculture

Baluchistan is bordered by Afghanistan and Iran to the north and west, by the plains of the Indus river to the east, and by the Arabian sea to the south. Its diverse climatic and



Fig. 1. Location of Baluchistan, Pakistan, compared to southwestern United States and northern Mexico. Latitude and scale of both maps are comparable.

physical features include extensions of Iranian and Afghanisthan deserts in the west and mountains with fertile valleys between them elsewhere. Temperatures vary with elevations from sea level to over 4,000 meters. The average annual rainfall also varies from less than 25mm (1 inch) in western parts of the Province to more than 400mm (16 inches) in some areas in the northwest. The latitude is essentially the same as the north of Mexico.

With an area of about 347,000 sq. km (134,000 sq. miles) and a populations of 4.3 million, Baluchistan is the largest,

most sparsely populated, and most arid of the four provinces of Pakistan. Most of Baluchistan's population raises crops and animals. Nearly everyone outside the large towns depends on crop and animal raising and fishing for their living.

Less than 3% of Baluchistan's land (34.7 million hectares, 85.7 million acres) is reported to be under cultivation; the remainder is rangeland, with negligible areas of forests. Wheat, occupying about 185,000 hectares (457,000 acres), is by far the most important crop and is also the staple food of the Baluch people. Deciduous fruit crops, as well as potatoes, onions, and other vegetables, are grown in the central and northern highlands. The canal-irrigated areas in the extreme southeast portion of the Province produce rice, fodder crops, and oilseeds, as well as wheat. Dates occupy large areas in the southwest.

The main animal-producing areas in central and northeastern Baluchistan support 8.81 million sheep, 7.72 million goats, 0.7 million cattle, and 0.2 million camels.

History and Government

Various tribes, living in areas today called Pakistani and Iranian Baluchistan and adjoining areas in Afghanistan, were more or less independent before the middle of the 19th century. The British rulers of India incorporated parts of Baluchistan into their empire in 1854, and the areas along the Afghanistan border were administered directly as British Baluchistan. The remainder of Baluchistan was administered according to the policy of indirect rule under which local rulers (*Khans*, *Nawab*, and *Sardars*) were confirmed in their positions, paid some yearly remunerations, and made responsible to the empire. British army officers and civil servants were required to learn local languages and were generally respected by the mountain tribes.

Baluchistan became part of Pakistan in 1947 and was made a separate Province in 1970. The current government of Pakistan is dominated by the Punjabi-speaking people of the Indus Valley; and government employees generally speak Punjabi, Urdu (the official national language), and English. They do not, as a rule, speak the local mountain languages and are generally disliked by the rural people of Baluchistan.

Tribes and Languages

Various Baluch and Pathan tribes, which also extend

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across the borders into Afghanistan and Iran, lead a largely subsistence life. These tribes are still largely nomadic and seminomadic and raise sheep, goats and cereal crops.

The Province is divided into diverse linguistic, cultural, and ethnic regions. Districts in the northeast which border Afghanistan are mainly Pushto speaking and are culturally akin to the Pathans of Afghanistan. The central and eastern districts are inhabited by mixed Baluch, Pathan, and Sindhi speaking groups. The southern and southwestern districts are Baluchi-and Brahui-speaking areas.

Occupational Groups

The people of Baluchistan are fishermen, city dwellers, nomads, pastoralists, and agriculturalists. Fishing along the coastal areas which border the driest lands has little impact on range management. On the other hand, both city dwellers and nomads (known locally as *Powindahs* or *Pawindahs*) greatly affect the ranges. City dwellers usually come from different ethnic and language backgrounds than nomads, pastoralists, and agriculturalists, and they provide a major market for crops and animal products. In addition, they use fuel wood extensively, which creates large areas of devastated brush ranges.

Previously, powerful nomads were able to force their way into rangelands normally grazed by animals owned by resident herders. The nomad tribes are now less powerful. The closure of the border into Afghanistan also has forced many nomads that previously spent the summer months in Afghanistan to remain in Baluchistan.

Pastoralists, whether Baluch or Pathan, are the poorest and the most unaffected by outside forces. Most Baluch and Pathan cherish traditions and values like hospitality, courage, a simple life, and honesty. It is generally believed among Baluch tribesmen that a tribesman will lose most of his Baluch characteristics if he settles in a village and ceases to shepherd animals. Very few animal raisers send their children to school. One reason often cited for not sending children to school is that they will be unable to perform traditional jobs later in life.

Agriculturalists normally live in valleys and communicate with towns. Traditionally, agricultural settlements were confined to areas with wells, springs, and river water sources. Today rainfed agriculture presents a permanent basis for settlement only in areas of the northeast where annual average rainfall exceeds 250mm (10 inches).

The traditional agriculturalists' tribal organization has weakened, and relationships and alliances are based on different interests and considerations. Social organizations different from the tribal organizations have developed, and some education has been introduced. Life is more individualistic, with less unity and solidarity among village people than among pastoralists. The leadership of agriculturalists is based more on land ownership and wealth than on the traditional Baluch values.

Leadership

Islam and Pakistani political, economic, and social systems help mold social systems in all of Pakistan, but Baluchistan experiences fewer of these influences because of its difficult terrain and hostile physical environment. The topo-

graphic and climatic conditions necessitate unique social, economic and political organizations. For example, traditional tribal organizations protect property and exclude groups other than fellow tribesmen from the occupied common tribal rangelands. The family tribal and religious institutions have been based on the necessity to share the meager resources of the society and make survival possible for the maximum number of people.

Traditional Leadership

Most pastoralists have well-defined traditional leadership systems. Even though their traditional organizations have suffered due to outside influences, they retain most of the traditional political, economic, and social systems. The family organization, the role and place of elders and sub-tribal leaders, and most other traditional instructions and practices are still intact.

The high chiefs or *Sardars* of big tribes have changed roles in some cases. These chiefs initially were given a role by the government different from their traditional tribal role, and in recent times have used government pressure against their own tribesmen. They have alternatively used the tribal organization and force against the government to suit their own political purposes. Most *Sardars* no longer live in their own tribal areas.

The lower hierarchy of *Malik*, *Wa Takari* and *Safed Rish*, the sectional and subtribal leadership, remains. These people, who have major grass roots followers, are important leaders with respect to resource use. These leaders have little education and little knowledge of the outside world. This leadership is often inherited, and it is common to replace an ineffective and unpopular *Malik* with a brother or cousin. However, in settled agricultural areas the leadership is both inherited and land- and wealth-based.

Generally, inherited leadership, land ownership, contacts with government, and education all go together. Changes within these areas are more rapid. Increased education and opportunities of work in urban areas and in other countries are rapidly changing the traditional leadership structure, although at this time the traditional leadership structure still predominates.

Government-approved Leadership

Like the rest of Pakistan, formal leadership at the local level in Baluchistan is vested in the union council system. The people elect their representatives to the union councils, whose members elect a representative for *tehsil* councils, and *tehsil* councils elect members for district councils. Traditionally the elders in Baluchistan (the *Sardars*, the *Maliks* and *Mirs*) were all government men and belonged to the party in power. The introduction of a system of local councils did not make any difference because the *Maliks* automatically became members and the chiefs became the chairmen. In this way the existing local leadership system was confirmed by the government.

Where the traditional leadership is cooperating with the government, there is little conflict. However, the union council system has not proved to be a substitute for the traditional leadership system in areas where the local council and traditional leadership is not the same. Here the union council leadership itself has a lesser following and is less trusted and

respected by the people.

Range Management Practices

In Baluchistan, as in other arid and semiarid regions of the world, the division between range management and other forms of agriculture is based primarily on water availability. Where water is available, the higher potential values of cultivated crops dictate that the land be used for crop production. Where water is unavailable, the land is used extensively for livestock grazing, often with low capital investment. Thus, the production levels are a given attribute of range management programs. If higher production levels were possible, the land would be used for a higher economic purpose.

A major influence on range production is climatic uncertainty. While the management strategy for irrigated crops is to overcome water shortages by using stored water, these opportunities in range management are limited. Natural

on selection of animals and animal management practices to promote survival rather than animal weight gain, milk production, wool production, or other commonly accepted measures of production, and (2) major ecological impacts.

Since survival is paramount, a successful livestock operator must constantly choose those practices that enhance survival. In Baluchistan, successful survival practices have evolved over the centuries (an example is the use of fat-tailed sheep which survive better than other breeds because of more fat storage). Any attempts to replace this successful survival strategy with a high production strategy will either be strongly resisted or, if accepted, will assuredly fail unless other changes are also adopted to accommodate the new strategies.

In many areas forage along natural migration routes is more limiting than the forage supply at the end of the migration route. For example, to use the winter and summer forage supply more, traditional spring-fall migration routes typically are abused. This is certainly true in Baluchistan where the major migration routes are severely grazed by passing bands of sheep and goats.

Supplemental Feeds and Water Development

As agriculture develops, the integrations of supplemental feeds with native forages will become both more feasible and more common. This will, in turn, upgrade animal quality.

Normally, grazing animals are restricted by forage and water supplies and animal losses to starvation are commensurate with long-term carrying capacity. However, when supplemental forages and water developments prevent this natural adjustment in animal numbers, the ecological damage can be severe.

As agricultural development proceeds in Baluchistan, use of tame pastures and crop aftermath will greatly modify traditional grazing management patterns. Nomadism will give way to transhumant agriculture practices and sedentarization. These changes may reduce the magnitude of range management problems, but could also intensify some problems. In particular, the animals that could live on crops and crop residues during some periods might outnumber those that could live on rangelands during other periods.

Market Strategies and Animal Numbers

Highs and lows in natural forage production naturally result in high and low animal numbers. Long-term human needs require a more stable level of animal numbers, and this stability can be achieved with fewer animals. The maximum number of animals consistent with long-term production goals remains unknown.

Currently no incentive exists in Baluchistan for livestock operators to reduce animal numbers to levels consistent with long-term stability. However, in the purely pastoral areas, drought and starvation result in necessary corrections in animal numbers. Some methods of purposefully achieving this stability include (1) private land ownership where the long-term benefits of lower animal numbers and stability will accrue to an individual; (2) cooperative grazing associations where the long-term benefits of stability and lower animal numbers will accrue to livestock operators, and thus a group will have incentives for animal number control; and (3)



Fig. 2. Baluch shepherds and Baluchi breed sheep.

variations in weather limit production stability. As a result, excess animals must either die during drought years or be free to migrate from areas of relative feed scarcity to areas of relative plenty. Pastoralists in Baluchistan who are completely dependent on range forage suffer from these oscillations in animal numbers. A strong motivation for irrigation and other agricultural practices is to reduce these oscillations. Major strategies to reduce the variations include (1) migration, (2) supplemental feeds, and (3) water developments.

Migration

Migration is perhaps the major way of adapting to the province's severe weather differences. Seasonal weather patterns make forage more available in a given area at one season than at another. Moving animals among areas to utilize seasonally available forages often involves semianual treks of 500 to 800km (300 to 500 miles) for transhumants (seasonal movers) and even longer distances for nomads. These movements, in turn, lead to (1) major emphases

governmental control where the long-term benefits of stability and lower animal numbers will accrue to the larger population. In all these cases, the costs of instability are high. Therefore, the creation of an environment where these costs are borne by the appropriate managers will provide incentives for stability (meaning lower animal numbers). Since private land ownership is not a significant factor on Baluchistan ranges, only cooperative grazing associations and government control will be discussed here.

Cooperative Grazing Associations

The essence of an operable cooperative association is a social structure that can organize individuals to operate for the common good. Such organizations are particularly important where there are communal grazing lands. However, in Baluchistan no grazing associations exist, and communal grazing lands are used according to the "tragedy of the commons." Therefore, it is to the advantage of each individual to have his herd graze as much forage as possible before anyone else can do so. Cooperative grazing associations, on the other hand, bring the pressure of social organizations to preserve communal grazing land for the common good.

Operable grazing associations are certainly not unknown in developing countries. In fact, they reach their greatest strength in those countries (or societies within countries) where social pressure is even more forceful than it usually is in highly developed economies. In Baluchistan, tribal social structures present significant opportunities for success of such organizations. A successful system of grazing associations would capitalize on existing organization structures.

Governmental Control

To be successful, governmental control of range management requires a highly trained cadre of professional range managers who can make professional judgments about rangeland conditions and trends. However, no such organization exists in Pakistan, and there are scant prospects for having such an organization in the near future. There are trained range managers in Pakistan, but with no range management organization, they are mostly employed in other specialties.

Range Conditions

The usual report on rangelands in Baluchistan is that the ranges are completely devastated. For the visitor who flies into Quetta and looks at the Quetta Valley, this is an understandable conclusion. However, once outside the Quetta Valley, range conditions appear much better. Of course, nearly all the ranges of Baluchistan are dry and heavily used, but at least remnants of desirable forage species are found where they are protected by rocks and bushes; these remnants can be expected to provide a seed source for future range improvements if management corrections can be made.

The valley floors have little protection from rocks, and in the Quetta Valley especially, all the shrubs have been removed and no remnants of desirable plants remain. The use of supplemental feed from cultivated lands, heavy nomad traffic, and fuelwood gathering by city dwellers are the apparent causes of the devastation. Beyond the range of

these impacts, animal populations have adjusted to the forage availability, and range conditions are better even though there may be little concept in the minds of livestock owners of proper range use.

The entire southwestern two-thirds of the province is dry with no large towns. There is little nomad traffic and no supplemental feed produced for livestock. This results in a good balance between the number of animals and the vegetation. Livestock owners in the area are knowledgeable about both grazing and animal production practices. Most of the sheep are of the desirable Baluchi breed, as decided on by consensus among many owners. No single owner is free to make a change in breeds or grazing areas.

Based on the condition of the vegetation and the knowledge and cooperative attitude of the livestock owners, many opportunities for improved range management are apparent. Unfortunately, no mechanism exists to create good relationships between the pastoralists and the government. The Baluchistan Forest Department is the only agency appropriately directed to even begin such a program; however, the operating philosophy of this department depends on control to enforce regulations rather than on advice and assistance to the pastoralists who are of different ethnic backgrounds and are generally anti-government.

The Future

Independent, isolated, illiterate, and alienated from the government, the pastoralists of Baluchistan face an uncertain future. Total animal numbers cannot be greatly increased, and flock sizes are decreasing as human population increases. Agriculture will develop, but the pastoralists likely will not share in the benefits. Improved range practices are possible, but illiteracy and fear of the government make acceptance of new practices difficult.

Although illiterate, the pastoralists are an intelligent and industrious people. Historically, many of the Baluch were mercenaries in various Arabian armies, and the Pathans were the backbone of the British armies along the Afghanistan borders. In recent time, labor has been the chief export of Pakistan, with thousands of Pakistanis of all kinds working in the Arabian oil fields.

A strength of the pastoralists is the ability to adapt to new situations; as long as the environment is spacious and rural they can do well. The combination of circumstances surrounding these people suggests that a program of temporary exports of shepherds would be one of the most helpful ways to introduce change and progress. Importing shepherds into the United States for two-year labor contracts is common, and certainly the experienced shepherds of Baluchistan are adjusted to isolated, harsh conditions. Only the language problem, which could be overcome by a short language school, would be an impediment.

Shepherds returning from overseas labor contracts, even with modest earnings, would be wealthy by pastoralists' standards and would have many new ideas to try. Thus, they could be focal points for change and adoption of new ways of life. If export shepherds can be chosen specifically from the lower-level leadership families, a nucleus for improved range management in Baluchistan could be established. ●