

LIVESTOCK NATURE, STATUS, BREEDING AND FEEDING SYSTEM IN BALOCHISTAN

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ABSTRACT

Balochistan is a largest province of Pakistan in terms of area and its scattered population mainly depends on livestock. It is the major share in the agriculture economy of Balochistan. Indigenous ecological situation also favors the livestock (majority sheep and goat) to flourish in the province. There are few rainfalls, which has made the cultivation very hard as compare to other provinces of Pakistan. Most of area of Balochistan comprises rangelands, which are solidly rocky. There are some parts of Balochistan, where there are natural pastures for the herders. These peculiar natures of land characteristics differentiate it from all Pakistan. Additionally, climate is most suitable for small ruminant to grow here at the hilly parts of the country. Hence, this paper is an attempt to highlight the nature, status, breeding and feeding system of Balochistan.

KEY WORDS: Livestock, sheep and goat, breeding and feeding, Balochistan.

INTRODUCTION:

Balochistan, the province of Pakistan, is having a climate with large arid to hyper-arid areas around its stretch (Geological survey; 2005). This means low rainfall on vast area of the province and hard for

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agriculture cultivation. A large part of the mountainous uncultivated i.e 90% and animal grazing is the ultimate land use (Siddiqui et al., 1997). It is, the smallest Province in population which is the smallest province of all Pakistan. Water is largely scarce source of major emphasis in Balochistan. Hence, cultivation is much harder than the other provinces. The low rainfall varying from 50 mm in coastal areas to 400 mm in the North Eastern Parts of Loralai and Zhob districts provides scanty facility for undertaking widespread crop culture. Consequently hardly 2 percent of the entire area is under crop culture. 98 percent comprising almost 35 million hectares of wastelands is nothing but scant grazing for livestock through part of the year. It is estimated that only 15 percent of this Rangeland is located in areas with more than 250 mm annual rain fall, which can support perennial grasses and shrubs (Meteorological Department, Quetta, 2002). Hence, in some portions of Loralai and Zhob districts, rest of the land surface does not even support rearing of livestock throughout the year necessitating seasonal migration of nomadic and transhumance herders who move to lowlands in autumn and highlands in spring with a view to find feed for their of difficult conditions for livestock, which are mostly sheep, goats and lesser number of cattle and camels. Despite difficult conditions for livestock industry, it occupies a pivotal place in the economy of Balochistan due to being the mainstay of more than 70 percent of the people inhabiting the countryside in the relative absence of other means of subsistence (Livestock Sub Strategy Balochistan, 1998).

Despite the significant efforts in the introduction of mechanized power in agriculture, a large number of draught (draft) animals exist and will continue for many years to provide the main source of power for the small farmers. The generally accepted definition of the small farmer is the one with land holding up to 5 hectares (Livestock sub Strategy Balochistan, 1998). It is an admitted fact that the use of power machinery can only be afforded when farming system provides sufficient income to pay for its purchase, operation, maintenance, repair and depreciation. There is no doubt that tractor is a superior source of power. But nearly two-third of the farming community who are presently cultivating with the help of animals power cannot shift unless they have sufficient income to pay for the use tractor and allied equipment (Livestock sub Strategy Balochistan). The animal drawn implement research in Pakistan has

Animal. Apart from poor staffing for the purpose, the controversy between the pro and animal power cultivation groups dampened the emphasis by the government in the area. There are working bullocks for cultivation purposes in the province. This all is the advantage to the farmer who is mainly depends on livestock production to earn some adequate income for him and for his family. Therefore, some kinds of livestock is used as draught animal side by side with its other benefits

LIVESTOCK NATURE AND STATUS:

Livestock of Balochistan consist of sheep, goats, cattle, camels, horses, donkeys, and poultry and in some area buffaloes. Sheep, goats and cattle are the most significant, which are the basic elements to be kept by all sorts of farmers and livestock traders. They are easy to graze on the natural pastures of Balochistan, which comprise dry land shrub and small herbs that can only be benefited to small livestock of Balochistan. Therefore, the rural inhabitants frequently keep them (sheep and goats) in their daily consumption as well. They are valuable items for small, and land-less farmers especially, as they attribute them with good saleable product which has market indigenously. Agriculture is hard in the areas where there is low rainfall, hence, people are happily involved in livestock rearing (Bruinsma, J. 2003). As raising livestock is one of the major activities and economic sources of livelihood for people living in the rural areas of Balochistan. A significant portion of the national livestock population particularly small ruminants is reared in this part of the country (sheep 46% and goats 23%). Almost 75% people of the Province are dependent on agriculture and livestock, mixed farming being sustainable only (Livestock Sub Strategy Balochistan, 1998). The continued overgrazing rather mismanaged grazing of range lands by the overstocked livestock has not only resulted in denuding vast areas of vegetative cover, but has in turn resulted into worsening cycles of mass malnutrition and starvation of livestock every year resulting into considerable mortality, high incidence of parasitic loads in livestock and stunting of growth in young lambs (Afzal, M. 1998). Enormous losses are thus sustained by the livestock industry, which has grown out of all proportions to the range resources without any checks. The annual growth rate in livestock population of Pakistan was 3 percent (Economic Survey of Pakistan, 2003-04) due to which there is demand for compound feed.

LIVESTOCK POPULATION:

The Livestock census figures for which a Census was taken by the Agriculture Census Organization, Pakistan in collaboration with Provincial Livestock and Dairy Development Department during 1996, have been published in 1998. According to the said report, the population of animals in Balochistan during 1996 with its comparison to the population of 1986 is as under in table No. 1 as livestock in Balochistan has sustained from 1986 to the year 1996. It can be noticed that sheep and goats are predominantly important. Majority of Balochistan area consists of open rangelands with scanty grazing which only allows sheep and goats to survive in hard condition of the province arid climate. Though camels can graze in the open rangeland of Balochistan, but the importance of sheep and goat has in the economy of Balochistan, camels of Balochistan livestock does not have. Poultry is growing with the substantial percentage in the years, which signals towards commercialism and business trends in Balochistan. Table No. 1 shows the growth of Population of livestock in Balochistan the years, analysing the differences and annual growth: while Table No. 2 shows the population since 1972 to 1996:

S. No	Category	1986	1996	Difference %	Annual %
1	Cattle	1,156,778	1,340,970	16	0.16
2	Buffaloes	63,154	161,063	155	2.45
3	Sheep	11,111,414	10,841,019	(2.4)	(0.24)
4	Goats	7,342,047	9,369,450	27	0.37
5	Camels	348,851	338,502	(3)	(0.86)
6	Horses	29,233	42,518	45	1.54
7	Mules	3,537	2,988	(15)	(4.24)
8	Asses	632,743	382,889	(39)	(6.16)
9	Poultry	3,295,353	4,693,908	42	1.27

Figure mentioned in brackets shows the negative growth of livestock in Balochistan.

Source: - Livestock census 1996.

Table No. 2 Shows the comparison of animal population and growth trends (million) from 1972 to 1996

S. No	Category	1972 Census	1976 Census	Annual %	1986 Census	Annual %	1996 Census
1	Cattle	0.482	0.675	10.0	1.157	7	134

1	Buffaloes	0.022	0.033	12.5	0.063	7	0.161	10
2	Sheep	3.859	5.075	6.8	11.111	8.5	10.84	-0.2
3	Goats	3.238	4.445	9.3	7.342	5.5	9.369	2.6
4	Chicken	1.183	1.958	16.4	3.295	5.5	4.694	4
5	Camels	---	---	---	---	---	0.339	-0.3
6	Horses	---	---	---	0.029	---	0.043	4
7	Mules	---	---	---	0.004	---	0.003	-1.5
8	Asses	---	---	---	0.633	---	0.383	-4.5

Source: - Livestock census, (1996).

From the above table, the declining trend in the population of cattle indicates the gradual mechanism of agriculture while negative growth in the population of pack animals like camels and asses reflects the use of modern transport. The negative growth in the population is however indicative of less use of mutton due to medical reasons and awareness of cholesterol contents in fat, but major reason can also be attributed to decreasing smuggling of sheep to Iran due to currency exchange rate making the Pakistani goods quite expensive for Iranians. Probably the main reason for dwindling/decreasing of sheep population and increasing number of goats is also because when the range feed available diminishes, flock owners increase the number of goats which can stand better the feed shortages. Moreover proliferation in goats is also there. Livestock population is badly effected by the severe drought since 1996 to 2005. After the examination of record one can easily perceived that the population of livestock was shaken by the drought specially sheep and goat in Balochistan. Table No.3

Table No.3

Livestock type	1996 Census	2000 Agri. Census
Cattle	1.341	0.964
Buffalos	0.161	0.097
Sheep	10.841	5.246
Goat	9.369	6.064
Camel	0.339	0.152
Horses	0.043	0.024
Asses	0.383	0.296
Mules	0.006	0.002
Poultry	4.437	3.148
<i>Total</i>	26.92	16.863

Source: Livestock and dairy development department, Government of Balochistan, Quetta, 2007

TYPES OF LIVESTOCK PRODUCTION IN BALOCHISTAN:

Province of Balochistan is an arid range based on the production systems. It differs with ecological conditions, social and availability of food and feed for themselves and their animals in this province as compare to other provinces. The mountainous habitat covers over an area of 392 thousands km (Mohammad, 1996). Small ruminants such as sheep and goats are better adapted to Balochistan environment and greatly outnumber large ruminants such as cattle and buffaloes (Afzal, M. 2003). Camels and donkeys are the most commonly used pack animals although horses and mules are also used rarely. In Balochistan, camels (55%), bullocks (33%) and tractors (12%) are used as traction at their farms for performing various agricultural operations in irrigated and dry land farming systems of Balochistan (Rees, 1988). The following are the main types of livestock production in Balochistan:

SHEEP:

Environment is the basic issue when talk of Balochistan, the sheep and goat are in increased number (Giles and Baig, 1992). In Balochistan livestock economy predominately sheep and goat. The main and distinct breeds of sheep in Balochistan are Balochi, beema

may also called Bribrik, Harnai and Rakshani. Less common breeds are the Kakri and Mengli. The Productivity of these breeds is far below the genetic potential mainly due to shortage of feed. If we glance on an average sheep we find out the following general facts regarding the sheep such as: the average adult weight of sheep is hardly around 30-35 kg, average age at first conceiving is 18 to 21 months and the average lambing interval is around 12 months. The breeding season in migratory flocks is from September to November. One ram is used to permeate up to 40 ewes. Among sedentary flocks, breeding takes place twice a year, so that ewes not permeated during autumn are bred again during spring. The fertility rate among sheep is estimated to be between 60 to 80% the highly levels reach during years with high rainfall. The wool produced is coarse and suitable for carpet making only. The average yield is between 1.5 to 2.0 kg per animal per year (Balochistan sub strategy, 1998). Ewes can produce some milk in excess of the lamb's requirements which is used for domestic purposes only. Sheep breeds of Balochistan discussed below:

Bribrik (Beevragh):

A medium to small sized fat tailed breed which inhabits eastern and north eastern parts of Balochistan comprising Kohlu, Bugti, Barkhan, Musakhel and some parts of Loralai and Zhob districts and accounts for up to 26.5% (2,875,000 heads) of the sheep population of the province (Balochistan sub strategy, 1998). It has a white body with black or brown marks on the head and face. The breed is mainly for mutton, wool and skin production. Its mutton is highly appreciated. The wool production in average is 1.5 kg, dirty and 0.70 kg clean, and is 100% white in color, average adult live-weight is 27 kg (Balochistan sub strategy, 1998).

Balochi:

A medium to large sized fat tailed breed important in central, southern and some south-western parts of the province and accounting for up to 14% (1,542,000 heads) of the provincial sheep population Livestock census, (1996). It is a mutton and dairy sheep, producing coarse wool. The color of the body and ears is white with black or brown spots on the heads, legs and even on body in some areas. The average wool production is 1.7

kg dirty and 0.8 clean with 90 % white color, 8% Grey and 2% Black. Average adult live-weight is 34kg (Balochistan sub strategy, 1998).

Harnai:

A medium sized, fat tailed possessing better percentage of wool fiber inhabiting Sinjawi, Loralai, Ziarat and Harnai areas of Balochistan province. The typical breed accounts for about 5% (511, 000 heads) of the sheep population Livestock census, (1996). The color is predominantly white with black or brown spots on the ears and face. It is usually a heavy wool, which is dense and heavy. The breed is an excellent producer of mutton, wool and skin. The wool production is in average 1.5 kg dirty and 1-kg clean. 94% of the wool is white and 6% is Grey in color. Average adult body weight is around 30-32 kg (Balochistan sub strategy, 1998).

Rakhshani:

A medium to small sized fat tailed sheep breed of the province which has the finest wool of any indigenous type. This breed is found in Kharan, Panjgoor and parts of Awaran and Chagai districts. This breed accounts about 16% (1,759, 000 heads) of the provincial sheep population Livestock census, (1996). The breed has white head and the muzzle may be black or brown. The animals are generally white with black or brown spots. The production is average is 1.2 kg dirty and 0.95 kg clean. 96% white, 4% grey and sometime a little black. Body weight is around 30g (Balochistan sub strategy, 1998).

Kakri:

The breed resembles Harnai sheep breeds due to its size and color respectively. The breed is scattered over in areas of Quetta, Killa Saifullah, Pishin and Killa Abdullah districts and accounts for about 16 % (1,772,000 heads) of the sheep population of the province Livestock census, (1996).

Mengali:

This resembles admixture of Balochi and Rakhshani sheep breeds but bigger in size than Rakhshani and inhabits the districts of Killa Lasbela and Part of Awaran. This however accounts for almost 16% (2,200,000) of sheep population of the province Livestock census, (1996).

GOATS:

Breeds used for hair and meat production are the Pahari and Kajli in hilly areas. While Khurasani and Lehri are for meat purposes (Baig, 2005). Those used for milk production are the Barabai and kamori crosses. Most herds comprise numerous varieties of breeds, with the hairy goats serving as flock leaders. Dairy goats are mainly found in urban centers or in areas where irrigated fodder production is possible. Some exotic sheep and goat breeds have also been introduced in Balochistan (Ather and Raja, 2002). These included Awassi, Rambouillet, Polled Dorset and karakul sheep, teddy from Bengal and angora goats. However, very small number of these exotic species of sheep can still be found around because they were unable to thrive under the prevailing conditions of low vegetation, feed scarcity and difficult terrain of the Province.

CATTLE:

Food requirement is increasing each day due to rapid increase the population of the country (Government of Pakistan, 1988). Hence, cattle fulfill the requirement of food shortage in the country to some extent. In Balochistan apart from sheep and goat cattle is also one of the important kind of livestock. The provincial indigenous cattle herd consists of one recognized dairy breed that is Red Sindhi found in Lasbela district and two recognized drought breeds namely Bhagnari and Lohani. Bahgnari is found in Sibi, Bolan, Nasirabad and Kachhi areas and Lohani in Loralai, Musa Khel, Barkhan and Duki Areas of Balochistan. Besides indigenous cattle there are now about 3,000 heads of purebred European dairy type animals and up to 20,000 crossbreds, the result of natural insemination of indigenous cows with these European breeds (Balochistan sub strategy, 1998). Indigenous cattle are of Zebu type, are well adapted to local conditions and over time have been selected for milk for draught. Cattle kinds are described briefly as under:

Bhagnari:

The Bhagnari, strong heavy breed is well suited to slow agricultural work and pulling heavy loads and in great demand by farmers of Sindh and Punjab provinces. The breed accounts for about 18% (380,000 heads) of cattle population and is scattered over in areas of Kachhi (Bolan), Nasirabad Jaffarabad and adjoining areas of Makran and Bugti districts of Balochistan. The breed is however also found in districts of upper Sindh like Jacob Abad, Larkana and Sukkur (Livestock & Dairy Development Department, Government of Balochistan, Quetta, 2003).

Red Sindhi:

Red Sindhi is one of best milk breeds of cattle in Pakistan and is known for possessing characters of thriving well under harsh conditions of high temperature and scarcity of water and have been in great demand from other countries for evolution of tropical cattle breeds like Jamaica. The breed accounts for about 18% i.e 236,000 heads (Balochistan sub strategy, 1998) and inhabits mainly Lassbela district and parts of Khuzdar, Awaran, Turbat districts of the province. Large herds of the breed are found in Karachi, Hyderabad and other southern areas of Sindh Province and also the home tract of the breed.

Lohani:

Cattle are short statured and hilly type capable to plough in mountainous areas being sure footed and live on little feed. They are found in Barkhan, Musa Khel,, parts of Loralai, Duki, Zhob, Kharan, Dera Bugti accounting almost 27 % i.e 358,000 heads of cattle population (Balochistan sub strategy, 1998). In addition there are about 350,000 heads of non-descript type accounting about 25 % of cattle population all over the province (Balochistan sub strategy, 1998). Such crosses comprising mostly bullocks to plough and cows of non-descript type are the result of on the spot and indiscriminate breeding by any sire and are reared for domestic use. This type is usually crosses of Bhagnari, Red Sindhi, Sahiwal of Punjab, Tharparkar of Sindh and crosses of different imported breeds.

BUFFALOES:

Balochistan Province does not possess any buffalo breed except that of Kundi buffaloes of Sindh in canal irrigated districts of Quetta and Nasirabad. Other buffalo population comprises peri-urban areas in almost all towns of the province to meet demand of milk of the population. These buffaloes are usually of Kundi breed of Sindh and Punjab (Pirzadeh and Islam, 1981). They are also brought from Sindh and other parts of Punjab for milking purpose by the different owners and dairy forms exist in Quetta as well as other parts of Balochistan.

CAMELS:

Camel rearing is considered as a source of investment and income with low risks and minimum management attention. The camel usually found in Balochistan is Arabian one-humped camel. There are two main types, the "mahari" or riding camel and the loading camel called, "bar, or "ladu". Camels are widely distributed all over Balochistan, but nearly 70 % of them are concentrated in the southern part. Since the seventies, camels are losing their importance when trucks and buses have emerged as popular transport in Balochistan. The mechanization process did slow down the annual camel population growth to 1.6 % (Aujla, K. et al., 1997). Farmers, peasants, landless laborers and agribusiness own most of the camels. Farmers are usually crop oriented and peasants with low incomes, living close to the poverty line (Ahmed, 1995). The majority of them invariably possess goats or sheep or both, along with camels. Landless peasants may be hired as herders and shepherds for extensive grazing. Socio-economic importance of camels is closely associated with existing production systems. These systems are largely determined by climatic conditions, topography of the region, plant growth phenology, water sources, etc. There are three major production systems in this region (nomadic, transhumant and sedentary). Despite their small number in comparison to the other animals, camels provide an important source of subsistence and income for people residing southwestern mountainous areas. The dromedary is the only camel found in Pakistan. Since it is the most economical and efficient animal of arid and semi-arid areas, its socio-economic value is highly recognized, particularly in Balochistan province where most of the

NOMADIC LIVESTOCK PRODUCTION:

Livestock raising interacts with crop production in both directions. Crop residues are the major sources of ruminant feed; livestock supply draft power and manure to the crop. Enterprises (Isani, 1998) class of production system includes those people who do not stay in one place but migrate through Balochistan. At times they even cross the country's boundary. The 30 percent of total sheep population in Balochistan province belong to these people having herds averaging 100 – 150 head per flock but vary from area to area. Flocks traveling from north to south are having flocks ranging from 100 to 200 (Balochistan sub strategy, 1998). They migrate from uplands to lowlands in winter and vice versa in the summer season. Their migration takes place through strategic area where they have contact with the communities that provide them grazing facilities and animal feed and in return they may sell them animals, their by products and labor. Initially a few goats were included in each flock as mascots and as a source of milk for the nomadic family. Over time because of their higher reproduction rate their numbers have increased. Although nomadic sheep and goats may be managed in smaller units are usually managed by shepherds in flocks of about 100 to 200, working on behalf of the owners in return for a share of the wool production. Nomadic flocks have no fixed base but instead move constantly throughout the year in search of grazing. There is also no specific microclimates or valleys with moist soils which provide good grazing specific times of the year. In general the grazing areas available to nomadic shepherds are determined by tradition according to rites and customs. For natural reason most lambs and kids are born during winter (i.e. from December to April) while flocks are at lower elevations. All female offspring are retained for flock replacement or build-up, but nearly all male offspring are sold before one year. Sales of spent females are made either at the end of breeding and lambing and before moving to summer grazing areas. Grazing for nomadic flocks is generally free of cost but there are instances when flocks owners are obliged to pay to the tribe for summer grazing frequently for winter grazing. In times of shortage, the shepherd may need to buy stubble grazing or may even need to purchase feed. However, in total over 90 % of feed consumed by nomadic flocks in Balochistan derive from rangelands. Sheep are mostly shorn twice annually to minimize problems of seeds and clinging plants and in consequent

ple in short. Some sheep and goats are milked to provide for the needs of the shepherd and his family. Lambing and kidding percentages are about 70 to 90 and about 100 respectively, mortality rates vary considerably ranging from 5 % for adults to over 20 % for young kids. Overall off take rate averages about 35 to 40 % (Aujla, K. et al., 1997).

TRANSUMANCE LIVESTOCK PRODUCTION:

Transhumance or semi-nomadic is also basically a livestock system differing from nomadic. It usually involves shifting of tillage operations among rain fed areas during certain seasons of a year (Wilson and Clarke, 1975). These migrations sometimes follow fixed annual routes because the transhumant producers would always move between specific locations. The extent of movements from one cropping area to another might be subject to available feed and water. Buzdar, (1989) distinguished between transhumant with land ownership and land-less (semi-nomadic transhumant). The semi-sedentary transhumant (18 %) cultivates rain fed crops, mainly winter wheat. Every winter after sowing wheat fields, they move from the central highlands of Balochistan to the Indus valley where they behave like a true nomadic population. The semi-nomadic transhumant (5%) is almost completely dependent on their camels and small ruminants. They are co-owners of common tribal rangelands, and in most cases their movements take place only within the limits of their tribal lands. They move from commonly owned rangelands to the open rangelands as forage availability fluctuates and would usually return to their permanent dwellings during the summer months. In case of a drought, some of them take their families and animals to adjoining agricultural valleys to work as laborers, and their animals graze on stubble and vegetation in and around the fields. Camels and donkeys are used for transportation of crops and other goods. They would earn enough by these means to buy wheat grain and other supplies for living (Buzdar, 1989). Transhumant flock size ranges from 1 to 5 camels along with 5 sheep and 5 goats. Overall, 23 % of camel herders raise camels as transhumant flock.

Some workers have distinguished between transhumance with land ownership (semi sedentary) and those without it (semi-nomadic). The semi-sedentary transhumance raise rained crop, mainly winter wheat. Each year they migrate along with their big flocks (few hundred animals)

mostly by trucks now days, to the low land Sibi and Karachi plains where they have the opportunity to work on agriculture lands and in some cases return back to their homes. Their way of trade is the same as that of nomads. They exchange their livestock commodities and labor for food and feed for themselves and feed for their livestock. When stubble grazing is available and this is usually winter, flocks are grazed on stubbles, returning at night to be penned at the owner's house or enclosed in a crude temporary pen constructed on the stubble land. When no feed remains in these areas, flocks migrate to rangelands and flood plains. The sheep are usually accompanied by their families travel with the flocks for roughly five to six months away from their villages. Because of the unreliable feed supply lambing percentage are marginally higher in nomadic flocks and mortality is less. Off take rates are also higher at 40 %. As with nomadic flocks sheep are shorn twice. Sheep are milked for family milk consumption and for production of 'ghee', 'Kurt' and 'lassie' some of that might be sold in the village. Transhumant shepherds at times have to pay for stubble or range grazing and occasionally purchase feed for their animals but overall production values are low. Over 70 % of production value derives from livestock and about 20 % from milk and its byproducts (Livestock & Development Department, Government of Balochistan, Quetta, 1970). Wool is important for household but contributes little to income.

SEDENTARY LIVESTOCK PRODUCTION:

Most of the people living in agriculture village in Balochistan raise a few animals. Most animals raised on farms are either for household consumption, or for sale just before religious festivals, when livestock prices are higher. This supplementary livestock production accounts for a major portion of household income and helps to improve farm productivity. Household flocks rarely contain more than 5 to 15 animals and often a single shepherd is hired to look after an entire village's livestock. As members of the same lineage or clan group normally inhabit agriculture villages, they have the usage rights over rangelands adjacent to their villages. Since the introduction of tube-well irrigation in the region there has been a steady increase in the number of livestock owners becoming sedentary and settling near irrigated land to practice agriculture as well. Approximately 50 % of the camel herders living in southern

mountainous areas raise camels under sedentary System. Camel rising constitutes 35.2% of household income and helps increase farm productivity. (Aujla, K. et al., 1997). Women play a major role, not only in raising animals, but also in converting their by-products into useful food and marketable items like carpets, mats, blankets, gunny bags, etc. Since mid 70's, there has been a steady decrease in the number of nomadic and transhumant herds. Herds are gradually becoming sedentary by settling around permanent agricultural fields established by an influx of tube wells where former shepherds find increasing alternate work opportunities.

A Summary of the above position is tabulated as below is Livestock Production System in Balochistan.

Category	%	Activities	Habitat	Mobility	Tribes or Groups	Flock Size
Nomadic	30	Livestock Rearing	Tent and camps	High long range Movements (150 Km)	Majority: Pashtun and Afghani Minority: Brahvi of (Kalat, Nushki, and Mastung) While some Pashtun from Afghanistan	100-150 80 - 100
Trans-humant	60	Livestock and Rain fed Agriculture	Trans-Humant hamlet in Summer Tents in winter	Seasonally with Relatively short Distances (80 Km)	Brahvi from Kalat, Nushki, and Mastung). Some Pashtuns From Northern Districts	50 - 100
Sedentary	10	Livestock + Irrigated Agriculture	House in villages	none	Brahvi (Mastung, Kalat, Khuzdar) Pashtun form Northern Districts	15 - 50

Source: Bonfiglioli (1995)

Sheep & goats distribution in different animal's production systems
Balochistan:

PRODUCTION SYSTEM	SHEEP (PERCENTAGE)	GOATS (PERCENTAGE)
Nomadic	30	30
Transhumance	65	52
Sedentary	05	18

Source: FAO (1983)

It can be seen that migratory livestock constitutes about 90 % of the livestock population in Balochistan out of which 60 % is transhumant and only 30 % nomadic. In the nomadic herds, there were 70 % sheep and 24 % goats, while cattle, camels and other animals were only 6 %. In the different production systems, only 30 % each of sheep and goats are estimated to be found in nomadic system, while 65 % sheep and 52 % goats in transhumant system and only 5 % sheep and 18 % goats in sedentary/household system. The mountainous habitat extends over an area of 392 thousands km (Mohammad, 1996).

LIVESTOCK FEEDING SYSTEM:

A large part of the mountainous area is uncultivated (90%) and animal grazing is the ultimate land use. Only 10 million hectares of Balochistan (30% of total area) can be considered as usable rangeland (Van Giles and Baig, 1991). Animals in general need some nutrients like human beings. Some feeds such as pasture grasses, hay, silage crops and certain grains are grown specifically for animals. Other feeds such as sugar beet, pulp, grains, and bran are the by-products remaining after a food crop processed for human consumption. Surplus food crops such as wheat, other cereals, fruits and vegetables and root of many crops could be developed as feed to animals, thus surpluses could be converted into meat, milk and eggs for human diet.

Livestock will become the significant in all over the world as the world run out of space as compare to the population of the world (Delgado and Rosegrant, 1999). The small ruminants of Balochistan survive on the traditional livestock feeding system which mainly include grazing on stubbles, rangelands, orchards, and some supplement in the form of a single ingredients to those animals who are weak or lactating ewes.

and straw or stalk and Stover during winter months while at home. Rangelands cover less than 50 percent palatable grasses plus limited number of shrubs/trees; this situation is being deteriorated due to over grazing and mismanaged grazing plan (Aujla, K. et al., 1997). There is no doubt that the indigenous livestock of Balochistan have during many generations adapted their maintenance and production requirements to the meager availability of nutrients. Therefore, their size and body weight is smaller than in other countries even in some parts of Pakistan, where it is possible to obtain the necessary feed requirements. Dry matter intake could be estimated at 2.5 % of body weight per day; however, these animals are able to make a more efficient utilization of the range roughage than similar form developed countries having good pastures. In Balochistan rangelands that constitute 79 % of total area, provide more than 90 % of total feed requirements of sheep and goats, 40 % of the total feed requirements of horses, donkeys and camels and 5 % for cattle and buffaloes (FAO, 1983). Feed available from rangelands is generally deficient in protein, energy, minerals and vitamins during the greater part of the year (8-9 months) and has been found to be a factor that limit the productivity of sheep and goats (Livestock & Dairy Development Department, Government of Balochistan, Quetta, 2003). Therefore, poor nutrition is generally blamed for low lambing percentage. Low proportion of cultivated land has also some agricultural crop residues available during the scarcity periods of winter and midsummer. Feed supply and quality are particularly poor during these two periods, when the cold winter does not allow grass to grow and before the monsoon rains in July-August in the Northern zone. In the Southern zone the scarcity period particularly lasts for 10 months of the year, interrupted only by the spring growth when winter rains are available (Livestock & Dairy Development Department, Government of Balochistan, Quetta, 2003). The orchards in the northern zone apparently also provide ample feed resources in the form of leaves and waste fruits, for sheep and goats. Large ruminants (Cattle and buffalo) which are mainly kept for milk purpose, are fed green as well as dry roughage (most common crops are Alfa, sorghum, maize, wheat/barley/oats green), and concentrate (commonly agriculture by-products are wheat bran, rice polish, chick peas, cotton seed cake mustard seed cake, guar meal etc). The majority of cattle farmers prepare their own concentrate mixture. Draft cattle like Bhagnari are fed sorghum Stover and

free grazing crop residues while Lohani cattle are mostly sent in pastures (ranges) and fields after harvesting. Rural poultry is almost scavenger type. The climate of the area is extremely varied. Seasonal temperature variation is altitude dependent, with extremes: lowland summer temperatures can rise above 45 degree Celsius, and highland lows below 5 degree Celsius (Kidd, 1998). Rainfall amount is low, from 100 to 400 mm/year. In addition rainfall is seasonal, with the majority falling during a specific time of year and the remainder of the year being dry. Annual rainfall is highly variable from year to year, both in quantity and where it falls. The threat of drought is always present. In the Quetta zone the probability of crop failure, annual rainfall being of 200 mm, is likely to occur 1 year in 3 (Keatings et al., 1989). Which means that it is very hard for the farmer to fully concentrate on their crop growing and ultimately relies on low rains which grow scanty grazing that ultimately provides indigenous ground for livestock rearing in Balochistan?

NATURAL VEGETATION:

With the exception of the mountain areas, with altitude of 2,436 to 3,352m above sea level, most of Balochistan is sparsely vegetated and severely eroded (Livestock sub strategy Balochistan, 1998). The valley floors and the lower slopes of the plateau areas are characterized by poor, patchy vegetation, which is heavily influenced by grazing and human interference.

FEED SUPPLY:

Main sources of feed for the livestock are:-

S. No.	Type	Source of feeding	
		Ranges (percentage)	Agriculture (percentage)
1	Sheep	90	10
2	Goat	95	5
3	Camel	95	5
4	Donkeys	95	5
5	Cattle	40	60
6	Horses	10	90
7	Buffalo	-	100

Source: (Livestock Sub Strategy Balochistan, 1998).

RANGELANDS:

Rangelands constitute about 93% of the total area of Balochistan. Only 28% of the rangelands are considered fair to good, around 36% of the ranges are considered poor, 30% unproductive and 5% undergrazed (Livestock Sub Strategy, Balochistan, 1998). The undergrazed areas are not utilized to their full potential because of their inaccessibility and the limited water availability. There are two types of private rangelands in Balochistan based on property regimes (common ranges and open ranges). Tribes traditionally own common rangeland with customary institutional arrangements for their sustainability and effective management (FAO, 1983). Open rangelands, used to be commonly owned, have unrestricted access and are free to all and are usually deteriorated. At some point in time, the group or tribe makes a decision as to whether a rangeland is so degraded that it should not be considered anymore as a common rangeland. Open rangelands have been increasing in area as the more exclusive common rangelands have lost the ability to sustain the animals' grazing needs and are abandoned by their owners (Buzdar et al., 1989). Balochistan can be divided into two zones as regards the grazing quality of rangelands. The upper and lower highlands comprise the best ranges of the province and support about 76% of Balochistan livestock. The southern plains have the poorest ranges and support only 25% of the livestock population. Two factors have mainly caused rangeland deterioration (institutional implications due to excessive population growth and external social and economic forces coupled with no management). For example, migration of 0.6 million Afghan refugees with their 4.8 million animals to Balochistan have devastated large scale grazing resources in the northern highlands. The other effects of this sudden increase in Balochistan equivalent to 14 % of the total Population and human population in Balochistan, on a fragile environment have been drastic (Livestock Sub Strategy Balochistan, 1998). On the other hand, the differential within communal setup has gradually given way to increased divergence of interest and unequal concentration of power. This, in turn, enabled the more powerful families to press for exclusionary use and de facto appropriation of common resources. As a consequence, they are subverting and eroding. (Aujla, K. et al., 1997). The productivity potential of the rangelands of the province is low and variable from 30 to 280 kg of dry matter production per hectare per annum in southwestern to north-

eastern parts. The increasing livestock population is overstocking most of the range areas well above their carrying capacity. Overgrazing and deforestation had caused extensive destruction of the vegetative cover of the rangelands resulting in a declining status of these resources and loss of bio-diversity of both fauna and flora. The situation is further aggravated by the weak base of forage/fodder alternatives from agriculture, which currently meets only 20 to 30 percent of the total requirement of the livestock. As agriculture expansion beyond a certain limit will not be possible because of scarcity of good land and water resources, the subsistence of the majority of the rural population will remain dependent in the future primarily on the rangelands for livestock production. True nomads follow the seasonal patterns of forage production. They are allowed to pass through the local tribal common rangelands, but cannot prolong their stay. In the lowlands of Sindh, they have contracts with local farmers for buying stubble grazing rights, straw and other feed for livestock. They would sell their animals and animal by-products in exchange. The arrival schedule in the lowlands coincides with the harvesting season, extending opportunity to nomads for working as a labor force in cultivated fields and to buy cheap feed for their animals. Likewise, their return to the highlands in spring and summer coincides with seasonal re-growth of vegetation and with seasonal labor requirements (Buzdar, 1989). Balochistan rangelands are managed under two property regimes and are classified as common or open rangelands. Common rangelands are traditionally owned by tribes, with customary institutional arrangements for their sustain ability and effective management. Open rangelands have unrestricted access and are usually in poor condition. Open rangelands have been increasing in area, as common rangelands have undergone degradation and have been abandoned by their owners (Buzdar et al., 1989).

IRRIGATED FODDER:

Most of the crops are produced in the irrigated areas of Naseerabad and Jaffarabad and the rain-fed areas of Karachi and Sibi plains. Deciduous fruits, wheat, potatoes, and tobacco are produced in the highlands. Balochistan's agricultural production is presently inefficient to meet the needs of the population and food is imported from other parts of the country. Consequently very little production of fodder is obtained in

canal irrigated areas and under the fruit trees till these becomes fruit bearing. A paltry area of about 50,445 hectares is assigned to fodder production in both 'Rabi' and 'Kharif' seasons out of which 37329 hectares of land receives proper irrigation (Livestock sub strategy Balochistan,1998). This quantity may not even fulfil the domestic requirement of household dairy and work animals.

LIVESTOCK BREEDING SYSTEM:

Typical local indigenous breeds of cattle such as Bhagnari, Red Sindhi and Lohani and those of sheep such as: Balochi, Bibrik (Beevragh), Harnai and Rakhshani are being conserved through Pure breeding in government as well as private sector as stipulated in National Breeding Policy. Breeding sires for all types of livestock are maintained by Private farmers who own such animals except for large ruminants and horses/donkeys, where these are available on payment for breeding charges. Such breeding sires are, however, without any pedigree or breeding record and are selected/ maintained by their owners keeping in view phenotypical characters. Provincial Government in the Livestock Department is providing breeding service to livestock population in the province through following two systems:

a) Issue of breeding sires

1) Sheep and Goats

Selected rams and bucks are maintained and fed separately from the breeding females flock by the flock owners and let loose in the flocks during breeding season at the rate of 30-40 females. Livestock Department has been issuing phenotypical selected breeding rams of different local sheep breeds produced at departmental farms: I) Multipurpose Sheep Research Station, Yateabad (Llralai district), ii) Karakul Sheep Breeding Farm, Maslakh (Pishin district); and iii) Bhagnari Cattle cum Balochi Sheep farm, Usta Muhammad (Jaffarabad district), mostly free of cost under different project (Planning and Development Department, 1998). This is one step towards the better future of livestock of Balochistan.

2) Cattle

Bhagnari and Red Sindhi cattle breeding schemes are in operation in Sibi, Bolan Kachhi and Lasbela districts where selected true to the type Bulls and heifers of Private in key breeding areas are registered and owners are paid monthly subsidy (Part of maintenance charges) as incentive for providing free breeding service to the farmers of the area. Breeding bulls and cows of Bhagnari (draft type), Sahiwal, Red Sindhi and Friesian (milk type) breeds are being Issued (mostly on subsidized cost) to farmers for breeding purpose from different departmental farms detailed as under.

- i) Multiplication Dairy Farm (Friesian cattle) Quetta;
- ii) District Dairy Farms (Friesian cattle) at eight (8) Places in the province;
- iii) District Dairy Farms (Sahiwal, indigenous milk cattle) at Turbat and Dera Bugti;
- iv) Bhagnari Cattle Farm, Use Mohammad.
- v) Red Sindhi Cattle Farm, Hub (Lesbela district);

b) Artificial insemination program:

In Balochistan, a beginning for regular artificial insemination program in cattle was made with the implementation of EEC/ADB assisted Balochistan Livestock Development Project (FAO 1987). Under the project almost 180,000 doses of Friesian breed of cattle have been imported from abroad to maintain a semen bank at Quetta where two liquid nitrogen plants have been installed to produce and supply liquid nitrogen. Several centers established in strategic areas of the Province in this sequence (Livestock & Dairy Development Department, Government of Balochistan, Quetta, 2003). Annually 22,000 inseminations are carried out in cattle for producing cross-breeds to increase milk production (Pirzadeh and Islam, 1981). These programs must be continued in future which definitely benefit the livestock rearing in the province

ANIMAL HEALTH AND NUTRITION IN BALOCHISTAN:

Poor nutrition in combination with livestock diseases are a serious problem limiting production of small ruminants in Balochistan. It is estimated that only 11 % of Balochistan's livestock have access to veterinary dispensaries (Livestock sub strategy Balochistan, 1998). The

inaccessibility of many pastures areas and the migratory nature of Balochistan's livestock systems, adds to the problems. Most commonly the high mortality in animals can be due to infectious diseases like Anthrax, Blackquarter, sheep pox, Pleuro-pneumonia, Bovine Diarrhoea, Foot and Mouth Rinderpest and Enteric Toxaemia and parasitic diseases like lung worm, intestinal worms, liver flukes and Piroplasmiasis (Livestock and dairy development department, Government of Balochistan, Quetta, 2003). Effects on economic productivity of livestock due to ecto-parasites like ticks, mango mites, sheep keds and warbles has been found to be a detrimental factor. Holders of livestock ultimately suffer huge loss due to no access to the medical facilities for their livestock. Moreover, they can not easily travel to those areas where they could cure their animals through veterinary doctors. Additionally mobile veterinary aid camps must be organized annually along movement routes where mass treatment against parasitic diseases and vaccination against infectious diseases of Livestock. Diagnostic units at district level assistance must also be provided. A Veterinary Research Institute has been established at Quetta where main emphasis is the production of 8 million doses of vaccines against a number of diseases annually (Livestock sub strategy Balochistan, 1998). There is need to establish such sort of centers all over the Balochistan, especially in remote areas. Provincial Livestock Department lacks sufficient resources and trained manpower to provide full services to the entire province. Such an important department must not be ignored and full fledged attention ought to be given on this issue for the livestock development. A healthy industry is also largely dependent upon healthy animals.

STRATEGIES

Ensure Animal Health:

Continue working to protect the health of the livestock and poultry industry from the immediate threat of devastating and economically damaging diseases.

ENHANCE MARKETING EFFORTS:

Work to establish a Jersey Fresh brand name for livestock raised in the state, enabling the industry to benefit from a common trademark that identifies their products as locally produced. Assist in the exploration and development of international markets for the processed egg industry.

Encourage Production of Grass-Fed Animals - Beef, Sheep, Meat Goats:

Aid in the development of a market for natural pasture grazing-fed animals. Help develop marketing programs for the distribution of fresh and frozen grass-fed products throughout the state. Consider conducting an economic impact study to determine the benefits of offering fresh products to farmers markets in all over Balochistan

Explore Benefits of Sheep Milk Production:

Introduce sheep milk production to during the Sibi or animal relevant fair and conferences. Consider undertaking a study to help quantify the demand for sheep milk and define its primary channels of distribution.

Work With Markets:

Encourage the state's three markets to upgrade their facilities and adapt their operations to better meet the particular needs of both traditional and ethnic markets.

Promote an Annual Market for Sheep, Goats:

Consider establishing a seasonal market for live sheep and goats at the different places in Balochistan on fairgrounds.

Assist in Addressing Labor Issues:

Continue the commitment to programs that support worker training, keep workers healthy and safe, and address issues such as farm labor housing.

Support reform of policies and procedures addressing temporary agricultural worker visas at the federal and state level.

Encourage farmers to take a pro-active approach to learning about their responsibilities at both the federal and state levels to ensure worker safety.

CONSTRAINTS IN LIVESTOCK DEVELOPMENT:

Livestock is considered the ancestor's business of the majority of population of this province but unfortunately it has some many problems

and constraints in its natural development. Some of the constraints are discussed below:

a) Low producers price

Low producer price for many livestock products particularly of meat is the major constraint to adopt on professional basis. Even although Prices have risen in recent years but still there is nothing much left for the livestock producer.

b) Feed supply:

Overall feed supply falls below the level needed for existing livestock population to produce at their full potential. Fodder like straws and stubble obtained from crop areas provide very little grazing resource for livestock and it is difficult to persuade users to adopt the sound grazing practices to permit improved productivity.

c) customs and Traditional life style

Keeping livestock is like a tradition and custom. They are not reared on commercial basis in most of the cases. Traditionally livestock have been kept for subsistence or for subsistence for draught purposes. Small holders, the part of the sector, are prepared to use family labor for livestock production and devote some land to growing fodder but in general are reluctant to make cash expenditure for the adoption of improved technology. Livestock kept as a means of saving or as status symbol are seldom managed to achieve their full potential.

d) Animal health assurances

For most of the livestock, health problems depress economic production. They are more important with exotic and crossbred animals. Frequent migration from one place to another, highlands to low lands and vice versa, less frequent adoption of disease control schedule, little access to vet services and under feeding or malnutrition make the provincial stock prone to various parasitic and infectious diseases. Long and porous borders with Afghanistan and Iran do not help in stalling the unchecked movement of livestock which sometimes becomes a source of epidemics on large scale. Frequent droughts and under-feeding/mal-nutrition of the animals make it prone to heavy parasitic infestation leading sometimes to mortality and lesser economic productivity.

e) Institutional Constraints:

The sector lacks adequate means for formulating development plans which is due to deficiencies in present statistics and data collection. This is also due to lack of staff to bring together available information on livestock population, number of animals slaughtered or sold to other provinces, reproduction and production parameters of domestic animals, disease incidence and then to use this information for planning both longer and short term strategies.

f) Hesitant to recognize the role of women

Although women play an important role in livestock production, there are virtually no women trained in livestock subjects. This means that an important part of the livestock owning community has little first hand access to advice on animal health or production.

g) Less Attention towards breed Improvement:

Artificial Insemination and breed improvement services presently reach little livestock population. In addition lack of follow-up extension advice means crossbred progeny do not achieve their full production potential.

h) Lack of proper credit facilities:

The livestock farmers are not credit minded mainly because of component of interest. In cases of drought or urgent necessity, the farmers would approach neighbors, fellow farmers or even beoparis (local traders), village shopkeepers or commission agents in the market for commodities like wheat or barley on credit. Which are to be returned in kind in the ensuing harvest season, whatever the cost may be. On small scale credit is involved between beoparis and butchers only. In large cities, it is the beopari who provides the butchers with the required number of animals on credit. In small towns, it is the farmer who sells his animals on credit to the butchers or village beopari. Government agencies, cooperatives or banks are not involved in providing credit to the meat supply system, and even other livestock farming in Balochistan.

i) Lack of coordination:

Difficulties in coordinating the work of different Institutions forms a constraint in a number of aspects of the livestock sector. In particular,

coordination between crop extension services, who are responsible for fodder crops, and Livestock services is often lacking; priorities are not agreed and fodder crops receive little attention. Coordination between the forestry and livestock departments also poses a constraint to the development of rangelands and range management practices.

SUGGESTIONS:

- Balochistan must be declared, as mutton producing zone and necessary facilities and subsidiary must be provided.
 - Province has no major Livestock Production Research Institute where comprehensive studies could be carried out. However, some studies on various aspects of animal breeding management and feeding are being done at department dairy/livestock and sheep farms and through the University of Balochistan. This needs to be enhanced on advance level by opening the different research centers branches all over the remote areas of Balochistan with all due facilities.
 - Strategy is required for development of the livestock sector has three main inter-related elements:
 - a) increasing the productivity of the animals rather than increasing its numbers;
 - b) Improving the quality of livestock products.
 - c) The Strategy should depend on gradual shifting of responsibility to the private sector for its implementation and on free market prices to determine production and the allocation of resources.
 - d) Government has an important role to play in providing an appropriate policy framework and technical support to the sector as a whole and to small holders in particular.
 - e) the strategy may seek to promote ways in which some of the services provided by government would be supplied by the private sector, freeing government funds to be focused on areas which are unlikely to attract private sector investment
 - It is important to stress that the strategy is constrained by biological limitations. Feed resources in the form of grazing and rangelands are finite and there are limits to the extent that such resources can be increased.
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There is a dire need for extensive study on the household organization of agrarian societies with a focus on the following aspects:

- i. Decision-making within the household;
 - ii. Source of income of different family members;
 - iii. Rights to use milk and other livestock products;
 - iv. Responsibility of marketing; and
 - v. Who controls the money
- The need to increase livestock productivity rather than increased livestock numbers is dictated by feed availability. There is theoretically a potential for increasing the productivity of natural grazing areas, but there are constraints to realizing this potential. Consequently, the main potential for increasing feed supplies lies in the crop sector, cash and food crops and food crops and hence of by-products used for livestock feed and from increased production of fodder crops. The potential for increasing fodder crop yields is considerable if a high yield is considerable if high yielding varieties and high-bred fodder are introduced as against traditional types.
 - The strategy should be not only to increase the quantity of fodder, but its availability over the years and its quality particularly the protein contents. I
 - Rapid development of livestock requires a degree of coordination between animal and crop extension staff.
 - Feed balance can be improved through treatment of straws with urea or ammonia. This technique has already been tested and demonstrated to the farmers in a number of pilot areas set up under the UNDP/FAO Feed Resources Development Project in Balochistan implemented by the Livestock Department.
 - Advance research work must be conducted for improved breed. In this regard exotic or better sheep and goat must be introduced in the province.
 - In dairy development the artificial insemination should form the cornerstone of breed improvement program for cattle and buffalo
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population, but coverage should be increased from the present levels. Newly established Semen Production Unit at Quetta should also start production of buffalo semen.

- There is ample scope for private practitioners in artificial insemination who with little support of government in the form of liquid nitrogen containers on credit or subsidized cost can boost up the services in potential areas. This would also help in optimal utilization of newly established Semen production Unit capacity providing ready market outlet to the surplus quantities of semen.
 - Effort should also aim to assist producers in identifying the most productive animals and, by reducing age to first parturition and reducing calving intervals, encourage producers to maintain only such animals.
 - Keeping of crossbred cows on commercial basis which over their life cycle, would be more efficient converters of feed must be introduced in the province.
 - Emphasis must also be put on reducing the number of dry females from the peri-uran herds that are usually slaughtered by enforcing existing legislation regarding slaughter of productive animals.
 - Measures must be introduced to provide incentives in the form of credit or subsidized to strengthen the livestock of Balochistan.
 - The draught and transport component of livestock depend on animals such as camels, horses and asses besides draught cattle. Hence, pack animal must be taken as priority consideration due to their export characteristics to Middle East and other neighboring countries
 - Existing animal health services must need to review by providing veterinary care to most parts of the province, this would have an impact on productivity of livestock in the future
 - NGO'S already working in different parts of the province must be persuaded to work by assisting in the areas of technical advice, animal nutrition, animal diseases regarding the livestock.
 - In order to involve private sector in animal health and production programs, establishment of a Livestock Foundation, on the pattern of Health and Education Foundations can also be looked into.
 - The capital investments required to invest in livestock business on efficiency levels must be assisted, it will increase the capacity of the
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small farmer and it will lead to strengthening of existing farm economy and creation of capital for investment in better forms of mechanization and organization of the farm.

- Incentives must be given for setting up animal/Poultry feed industry to the private sector. It would help in improvement and development of livestock and poultry industry.
 - Feed industry should be controlled by a quality control system. A Quality Control Feed Act exists in Punjab and similar legislation is required for this province as well. Spot Checks on feed consignments, with analysis undertaken by government laboratories, would do much to overcome farmers' distrust of some commercial feeds.
 - The industry should be required as well to introduce proper labeling of all feeds, providing farmers with information on ingredients and nutrient contents of feed so produced.
 - There is a need to collect data on total number of live animals, number of animals slaughtered, number of animals sold to other provinces, consumption pattern of urban population and reproduction and production parameters of different domestic animals in Balochistan. These data, if collected on small scale, would be far better as cheap alternative than to form models on inaccurate and speculative data.
 - There is also need to create a team of women extension livestock workers who should after training be placed within their home vicinity or near the workplace of their husbands and, if possible, they can work in pairs. Instead of providing to men to pass it on to women, training should be provided to women workers who can do this job better.
 - The present practice of many producers of mixing their own feeds is likely to continue, as the cost of purchasing ingredients is less than that of prepared commercial feed. The Livestock Department should make available advice to the producers on the most appropriate feeds and feed sources, to ensure balanced rations for both poultry and ruminants.
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- Government's role is important to achieve development in the livestock sector. Few important ones are discussed below:-
 - a) Priorities should include research on nutrition consist of available feeds and crop by-products, fodder and its year-round supply and Breed Improvement.
 - b) The Government Research Stations and Para-Veterinary Training Institute, Should make provisions of training component for making available courses in different fields to the private sector as well particularly at technician level. This can help in improvement of farm income.
 - c) The role of the government would be more important when proposals for bringing in improvements to production systems and marketing and processing facilities will have to be implemented under the proposed strategy. Credit would be needed for both small holders and commercial producers.
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CONCLUSION:

Livestock is an important sub sector of Pakistan economy. It is the backbone to the growing economy of Balochistan. Balochistan livestock mainly consist of sheep and goat, but other livestock are also part of their usage. People living predominately depend on the development of livestock sector in Balochistan. Government has realized the importance of this sector; hence magnitude important is rendered on its development. There are numerous strategies which the government is following, however, its difficult to say about the benefits which would come in coming years. After a long spell of drought, the present status of livestock is not much encouraging. Nevertheless measurement which the provincial government is taking is very encouraging which includes the distribution of goat and sheep among the herders of Balochistan on loan basis. If it achieves its objectives, effects will be pleasant in terms of the prosperity in Balochistan and ultimately would increase the population of livestock to offset the aftermath of last horrible drought in Balochistan. Balochistan has many breeds of goat and sheep; few are very often keep the herders. There are few new types of breed introduced by the provincial government which are producing more than normal benefits in order to supply meat and other by products. Barkhan, Rakhni, and Rarkan to increase dairy production, but still livestock productivity and quality is low, due to primitive husbandry practices, lack of basic facilities, in-adequate animal health and inadequate nutrition. It is critically important to guide them about the importance of new breeds and to assist them in breeding process for long lasting result Herders of province are traditional, therefore, mostly depend on traditional grazing system. They have to persuade to adopt modern techniques of feeding their animals especially during the spell of drought. It is worth to say; to improve the life of common man in Balochistan, breeding, and feeding has to be the focal point. Hence, breeding and feeding system in Balochistan is waiting for the special attention in Balochistan. The promotion of livestock is possible only through active co-operation of people involved in the livestock activities. Regular training on growing small ruminants and poultry is needed. Co-ordination between livestock, agricultural, and financial institutions is also necessary for the development of the livestock sector.

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