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Socio-Economic Profile of Camel Herders in Balochistan, Pakistan

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ABSTRACT

The purpose of the study was to provide an overview of camel production systems and their contribution to different farms in mountainous areas of Balochistan; to identify the problems and constraints in camel farming and to identify research areas and suggestions for the improvement of camel farming in Pakistan. For this purpose, 200 camel herders were randomly selected from four mountainous areas of Balochistan, Pakistan. Detailed information was collected on camel demography, flock size and structure, production systems, feeding constraints, and breeding practices. Seasonal migratory patterns of camel herders and their impact on grazing lands are also discussed.

Key Words: Socio-economics; Camel; Herder; Balochistan; Pakistan

INTRODUCTION

South-Western mountainous areas comprise of Balochistan province as well as Rod-Kohi region constituting parts of NWFP, Punjab and Sindh provinces. These areas of Pakistan make a significant contribution to livestock production. Household camel raising is very common all over the tract and camel availability is about one camel per 14 inhabitants. Camels play a distinct role in all kind of agricultural operations of dryland farming and recognized as most appropriate source of draft power in agrarian economy of arid regions. Camels are providing a source of subsistence and income for local people and play an important role in the economy of these remote areas. This paper[1] contains socio-economic profile of camel herders in Balochistan province of Pakistan. It provides an overview of camel production systems as well as farmers' problems and management practices regarding camel raising in these areas and concludes implications for researchers and planners to develop future strategies.

MATERIALS AND METHODS

A multi-disciplinary team of National Aridland Development and Research Institute conducted a formal survey in collaboration with Provincial Livestock Department in October, 1997. A survey questionnaire was pre-tested in Sibi and suburbs of Quetta and then it was decided to spread the sample all over mountainous Balochistan and Rod-Kohi, by targeting all major camel producing areas. Four localities were earmarked and minimum 30 camel herders were interviewed from each location making total sample size of 200 respondents as shown in Table I.

Table I. Location wise sample respondents in south-western mountainous areas

Location	Sample	% of Respondent
Harmugai, Kharan	70	35.0
Talli, Sibi	60	32.5
Mastung/Kalat	30	10.0
Dukki, Barkhan	40	15.0
Total	200	100.0

The data were collected through a well-designed questionnaire covering general features of camel production systems, fodder availability, breeding practices and socio-economic indicators of camel herders. Information on exploring infra-structural and social capabilities of the area was also collected to provide an average profile of this region. Other secondary information was extracted from publications of Governments of Pakistan and Balochistan to establish the importance of camels in the province.

RESULTS AND DISCUSSION

The study evaluates socio-economic profile of camel herders in Balochistan with major focus on the following parameters:

[1] This survey and study was conducted with the joint collaboration of Pakistan Agricultural Research Council and the Arab Centre for the Studies of Arid Zones and Dry Lands, Damascus, Syria.

- Socio-economic environment
- Agricultural practices
- Camel production systems
- Camel husbandry and management practices

Socio-economic environment

Human resources. Balochistan makes up 5.1% of the national population and its share would improve (i.e. 8.5%) by the year 2010 (Van Giles & Baig, 1991). The literacy rate in rural areas is 9.8% for males and 1.8% for females, conversely, in urban areas, it is 42.4% for males and 18.5% for females. In rural areas, 77% of the population is engaged in agriculture, animal husbandry or forestry (GOP, 1983).

Migration pattern. The migratory period starts with the onset of winter. A migration may originate from somewhere in Afghanistan and may end up in any part of Balochistan or Indus plains. In most cases, migrations shall take start from a locality of northern highlands for a final destination in southern foothills or irrigated plains of adjoining provinces. The migrants may be true nomads or transhumants. They stay there with their animals until February to March. With the onset of spring season, they move back to mountainous areas. The movement is along traditionally fixed routes. The migration involves both activities (i.e. pastoralism and trade) as the migrants are accompanied by their flocks and trade goods are transported on camels.

Agricultural Practices

Wheat and barley are the main winter crops whereas sorghum, melon and pulses (mainly mung), are grown in summer. Wheat, being the staple food of the people of Balochistan, has always been a major component of the cropping system (i.e. 63 to 97%). Sorghum is largely grown in Sibi district and in the eastern tehsils of Loralai district. The main barley growing area is also Loralai district and is gaining popularity among farmers in the highlands of Balochistan. Cumin is grown in Mastung/Kalat region. Some of the most important crop rotation systems followed in the highlands are (a) wheat or barley-fallow-wheat or barley-fallow (b) wheat or barley-sorghum or melon/beans mixture-wheat or barley-sorghum or melon/beans mixture (c) wheat-fallow-wheat-fallow.

Use of agricultural inputs. Farmers use mostly seed of local varieties better adapted to climatic conditions. Most local varieties have a higher straw production than "improved" varieties and are valuable for farmers as supplementary feed for livestock. Most of the rainfed farmers in highland Balochistan do not use fertilizer or farm yard manure to improve the soil fertility of cultivated fields.

Size of land holding and ownership. In survey areas, there were negligible big landlords or very poor tenants and most of the people made an average subsistence living. Most of the land in survey area is owner operated (i.e. 76 to 90%), however, very low productivity of cultivated land. For instance, inspite of an average land ownership of 17 ha in Kovak, about 33% of farmers need to work both on their own land and be a tenant.

Camel Production Systems

The population of camels in Balochistan has been estimated as 0.349 million (GOP, 1989). Mostly camels are owned by small farmers, peasants or landless labourers or pastoralists. Camel rearing is considered as a source of investment and income with low risk and minimum management attention. Camel production systems are largely determined by climatic conditions, topography of land, growth phenology and water sources etc. Three major camel production systems exist in the region namely nomadic (26%), transhumant (24%) and sedentary (50%). In nomadic system, the nomads follow seasonal patterns of forage production. They spend summers in highlands and winters in warmer lowlands of Indus plain. Average nomadic family was found to own 24 heads of camel along with 95 sheep and 32 goats. Three or four families keep their livestock together making up flock of about 380 animals. A nomadic herd of 24 camels (i.e. 72% female and 28% male) usually has 15 breeding camels and six calves. About 48% of gross income is constituted by sale of live camels and camel services, 30% by marketing small ruminants, and 8% by off-farm employment as presented in table II.

Transhumance or semi-nomadism is also a migratory and/or livestock system differing from nomadism. It involves shifting of tillage operations among rainfed areas during certain seasons of a year. The extent of movements from one cropping area to other may be subject to available feed and water. Transhumant flock sizes range from one to five camels along with five sheep and 15 goats. Overall 24% camel herders raise camels as transhumant livestock. Fifty per cent of camel herders living in south-western mountainous areas of Pakistan raise camels under sedentary system. Camel raising constitutes 35.2% of household income and helps increasing farm productivity.

The average annual income shares from various enterprises and their comparison under the three camel production systems in survey areas are presented in Table II.

Table II. Income sources (%) of camel herders in Balochistan, 1997

Source	Nom	Tran	Sed	All
Sale of live animals				
• Camels	29.5	8.8	22.4	21.4
• Sheep, goats & hides/skins/wool	30.6	6.0	11.7	16.8
Value of home consumption*	14.0	6.2	10.6	9.6
Farm operations & transportation**	18.4	22.0	12.8	17.2
Crops production	0.0	46.9	28.0	26.0
Off-farm employment	07.5	10.1	14.5	9.0
Total	100.0	100.0	100.0	100.0

*Include value of home consumption, gifts to relatives, bridal price or sacrifices; **Draft power for farm operations and transportation of wood, farm inputs and products; Nom= Nomadic; Tran= Transhumant; Sed= Sedentary

Socio-economic value of camel is closely associated with existing camel production systems. Camel generates considerable annual income in all three types of production systems. Current management practices of all three production systems are rustic. Despite significant contributions into annual gross income, camel is considered an animal which requires little management and inputs which greatly determines its current productivity levels.

Camel Husbandry and Management Practices

Milk production. Farmers reported a lactation length of 270 to 525 days and daily milk yields vary from 4 to 12 litres. Total milk yield in a lactation ranges between 1250 to 3650 litres with an average of 1800 litres. Most of the camel milk is consumed by a family and negligible enters into marketing process. The situation offers little incentive to the camel herders to keep camels as daily animals as is the cool in few countries like Mauritania.

Table III. Milk yields of camels (liters) in mountainous areas of Pakistan

Parameter	Good feed*	Poor feed**	Desert feed***
Daily milk yield (litres)			
• Average	11.5	4	8
• Maximum	12–20		
Lactation yield (litres)	2450–3380	1264	2400–3200
Lactation length (days)	345–540	365	365
Calculated yield for 305 days (litres)	2650–3650	1180	2140–2840

*Good feed contains green fodder and added concentrates **Poor feed constitutes agricultural crop residues

*** Desert feed consists of range grazing

Meat production. About 9000 metric tons of camel meat is being produced annually in Pakistan in which about 40% is contributed by Balochistan. The slaughter rate of camel in Balochistan is 3% (GOP, 1989), and in healthy and well fed camel, the carcass weight is 350 to 500 kg. Commercial camel ranching for meat production has big scope for export to Middle East countries. It would involve a policy decision for establishing a camel meat processing plant at a focal market (i.e. Quetta).

Table IV. Camels slaughtered in and outside slaughter houses for meat in Pakistan during 1986 (GOP, 1989)

Place	Total (Heads)	Slaughtered in (Heads)	Slaughtered out (Heads)
Balochistan	8714	3273	5441
Sindh	4606	2182	2424
Punjab	7868	2986	4882
NWFP	2297	1052	1245

Production of hair and hides. Camel hides are used for making shoes and saddles. A hide is commonly sold at the rate of Rs.300 to 550. Its value goes as high as Rs.3000 to 5000 when used for manufacturing table lamps. These products have a great export potential.

Marketing. There are only two major camel markets, one at Quetta and the other at Dalbandin in the whole region. In the absence of well developed marketing infrastructure and resources for travelling 50 to 350 kilometers to reach the market, the herders prefer to dispose off their camels at village level. Middlemen in mountainous areas are reported to make a profit as high as 35 to 40% and it is in reality a big loss to producer (Mahmood & Rodriguez, 1993). A thorough analysis of camel marketing system and marketing margins is required to devise ways to improve the current marketing system. This will enable the herders to receive reasonable proportion of consumer's prices.

Management implications

- Social and institutional implications are accelerating the degradation process at grazing lands. Current intense and high grazing pressure levels with no parallel resource development and improvement activity is largely converting common ranges into open lands. It is imperative to involve non-governmental organizations (NGOs) and community based organizations (CBOs) to save these natural resources. A target community must come to realize that repair and rehabilitation of

- communal common and/or open land is primary responsibility of its individual member.
- Increase in human population and a very low literacy rate (i.e. <10%) in Balochistan countryside gives a little apprehension of resource degradation and its long term socio-economic impacts on marginalized societies. Redirection of socio-cultural trends away from subsistence at grass root level including camel herders would need persuance and motivation through training for shifting to commercial as well as profitable production.
- Seasonal migration of herders causes a sudden imbalance and very high pressure well beyond the threshold level of a particular resource and ultimately inflicts irrecoverable damage to it. Any unconventional approach for feeding animals at their origin has to be employed, however, it must match with existing socio-economic norms.
- Expansion of crop cultivation due to over exploitation of underground water by tubewells must be supported by adequate watershed management activities to avoid severe lack of water resources for the whole region.
- Inadequate forage supplies coupled with heavy parasitism cause heavy economic losses to camel herders. Having good control over external and internal parasitism, the overall performance of camel herders may considerably improve.

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