

# Development Constraints and Drifting of Camel Production Systems in Pakistan

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## ABSTRACT

A survey was conducted through out Pakistan in main camel habitats during 1997 to 1999. A pre-tested questionnaire was used to interview total 1337 camel herders. Another follow-up survey was conducted during 2000 to assess shifts and trends in production systems. Rapid Rural Appraisal (RRA) technique by conducting semi-structured interviews was used. Sample respondents reported numerous constraints hindering camel development in Pakistan. Majority of camel herders (90%) were applying indigenous as well as primitive methods of production and management. Average calving rate in irrigated plains was reported as 70.6% as compared to 82% in sandy deserts. Trypanosomiasis was reported in 30 to 45% of sample herds in coastal zone; whereas, its highest incidence (50%) was reported in camel herds of irrigated plains. In sandy deserts, 45 to 100% respondents treated their sick animals with traditional medicines, and 66% of them were not satisfied with local veterinary extension services. Heavy infestation by both external and internal parasites was considered by respondents as a single biggest problem. A very low literacy rate (<10%) among respondent camel herders implied that camel production at subsistence level would continue. In sandy deserts, 73 to 100% respondents reported problems of camel milk and meat marketing and 26 to 60% were facing exploitation by middlemen. RRA survey revealed a phenomenon of gradual socio-economic transformation of pastoralists in Balochistan. The nomads had highly been vulnerable to current external forces and rapid changes were occurring in their traditional practices and norms as a part of survival strategy. Commercial nomads and nomad transhumants have emerged as classical example. Further studies are required to determine the magnitude and dynamics of transformation process.

**Key Words:** Camel; Pakistan; Production; Systems

## INTRODUCTION

There are about 0.328 million households engaged with camel production in four major camel habitats of Pakistan (Government of Pakistan, 1998). Camel herders of Pakistan are not only very hard to thrive under extremely harsh climate conditions of sandy deserts, mountain deserts etc. but are also victims of poverty due to socio-economic implications. Negligible development inputs have so far been directed towards these inaccessible areas of the poor communities of camel herders by the government. There had absolutely been no attempt to analyze carefully the whole scenario in order to design strategies for enhancing productivity of camels for economic empowerment of their herders. This study was designed under the sponsorship of the Camel Applied Research and Development Network (CARDN) to describe the socio-economic profile of camel herders in Pakistan and to identify major constraints hindering camel development.

## MATERIALS AND METHODS

There were two phases of the study. In first phase, socio-economic survey was conducted in four major camel

habitats in Pakistan during 1997 to 1999. Out of total 1337 respondents, 200 were from mountain areas, 170 were from sandy deserts, 122 were from irrigated plains and 345 were interviewed in coastal zone.

A pre-tested questionnaire was used to collect information from camel herders. Excel package was used for data compilation. In second phase, a follow-up survey was conducted during 2000 in Balochistan province with 41% of total camel population in Pakistan to assess shifts and trends in pastoral production systems due to socio-economic implications as well as development constraints. Rapid Rural Appraisal (RRA) technique by conducting semi-structured interviews of farmers was used during field work.

## RESULTS AND DISCUSSION

During survey interviews, the respondent camel herders identified following major constraints for camel development in Pakistan:

a) **Issues of production systems.** Majority of camel herders (90%) inherit this profession from their ancestors of subsistence economy. Though they are well versed with camel raising yet their indigenous camel production systems

need up-gradation based on modern animal husbandry practices keeping in view a shift from subsistence level to commercial camel production.

b) **Management specific constraints.** The primitive approach of camel management in all three production systems (i.e. nomadic, sedentary and transhumant) manifested in general poor feeding of animals, hence slow growth rate, delayed maturity, long calving interval, low calving rates and high disease incidence are common constraints on camel productivity. Mean pubertal age of females was reported as five years. Average calving rate in irrigated plains was reported as 70.6% as compared to 82% in sandy deserts.

c) **Socio-economic implications.** In irrigated plains 88 to 94% respondent herders were illiterate. Similarly, the literacy level among herders of mountains and sandy deserts was very poor. On average 92% of herders in coastal zone were illiterate. For usual farm operations in mountainous Balochistan, more than 50% respondents preferred camel over bullocks. In Kharan area of Balochistan, 95% respondents were engaged in camel raising as well as cultivation of crops.

Almost all respondents in irrigated plains were mix livestock herders. These herds consisted of buffalo, cow, sheep, goats and camels. They had been earning 50 to 80% of total annual income from camels depending upon type of cropping zone. However, income from camels in all three sandy deserts ranged between 50 to 74%. In coastal zone, 93% of respondents reported < US\$ 1000.00 (< Rs. 50 thousands) their annual income.

d) **Marketing concerns.** In sandy deserts, 21 to 100% respondents reported problems with marketing of camel milk and meat. Upto 60% camel herders reported middlemen exploitation. More than 80% of respondents in

coastal areas reported low market prices for their animals and no government control on market operations.

e) **Disease problem.** High incidence of parasitic as well as infectious diseases in camel herds was reported as serious concern. Trypanosomiasis was reported in 30 to 45% of sample camel population of coastal zone. Similarly, 28 to 50% respondents of irrigated Punjab reported Surra. Mange and ticks were reported by upto 98% respondent camel herders. Among infectious diseases Pneumonia was widely reported.

f) **Veterinary extension services.** In sandy deserts, 45 to 100% respondent herders were using traditional medicine for sick animals. More than 65% of respondents were unsatisfied with general treatment of diseases. None of the respondents drenched his animals against parasites as well as treated against Trypanosomiasis.

g) **Policy implications.** At both policy levels (i.e. federal as well as provincial), the livestock sub-sector has traditionally been given low priority within agriculture sector. And under livestock sub-sector, the camel had been victim of neglect by both research and development functionaries.

h) **Technological deficiency.** There is severe deficiency of camel specific and appropriate technological packages for camel herders to construct a track for camel development.

i) **Gender issues.** Women were rarely involved in marketing of camels and their products and were mostly not consulted for decision making. Majority of women were unaware of the concept of development and an increase in number of animals was development for them.

j) **Machinery threats.** Camel has quickly lost its traditional draft value mainly against machinery and tractors over the past 30 years. It was estimated that machinery and tractors had taken over almost 50% of camel draft power

**Table I. Comparison of current percent draft power contribution of camel with its 30 years' ago in sandy deserts**

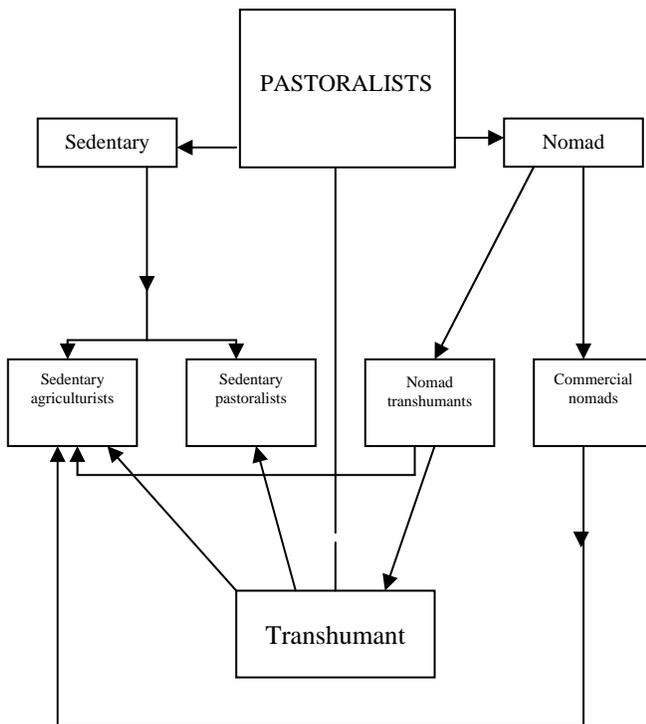
| <b>30 years ago</b>                     |       |       |        |         |                     |       |  |
|---|-------|-------|--------|---------|---------------------|-------|--|
| Type of operation/ utility              | Camel | Horse | Donkey | Bullock | Tractor & Machinery | Total |  |
| Transportation of goods and commodities | 85    | 1     | 13     | 1       | 0                   | 100   |  |
| Riding                                  | 90    | 2     | 8      | 0       | 0                   | 100   |  |
| Amusements and sports                   | 70    | 30    | 0      | 0       | 0                   | 100   |  |
| Persian wheel drawing                   | 0     | 0     | 0      | 0       | 0                   | 0     |  |
| Water lifting from deep wells           | 50    | 0     | 2      | 48      | 0                   | 100   |  |
| Village water distribution              | 95    | 0     | 5      | 0       | 0                   | 100   |  |
| Camel related industry                  | 0     | 0     | 0      | 0       | 0                   | 0     |  |
| Agricultural operations                 | 80    | 0     | 5      | 15      | 0                   | 100   |  |
| <b>1999</b>                             |       |       |        |         |                     |       |  |
| Type of operation/ utility              | Camel | Horse | Donkey | Bullock | Tractor & Machinery | Total |  |
| Transportation of goods and commodities | 45    | 1     | 13     | 1       | 40                  | 100   |  |
| Riding                                  | 70    | 1     | 5      | 0       | 24                  | 100   |  |
| Amusements and sports                   | 70    | 30    | 0      | 0       | 0                   | 100   |  |
| Persian wheel drawing                   | 0     | 0     | 0      | 0       | 0                   | 0     |  |
| Water lifting from deep wells           | 40    | 0     | 2      | 45      | 13                  | 100   |  |
| Village water distribution              | 95    | 0     | 5      | 0       | 0                   | 100   |  |
| Camel related industry                  | 0     | 0     | 0      | 0       | 0                   | 0     |  |
| Agricultural operations                 | 40    | 0     | 0      | 5       | 55                  | 100   |  |

responsibility in terms of transportation and agricultural operations in sandy deserts (Table I). Under this scenario, the traditional camel production systems may not sustain too long.

k) **Drifting of production systems.** The second phase survey revealed that all three traditional classes of pastoralists (i.e. nomad, sedentary and transhumant) were subject to transformation in one or other way in Balochistan province, the largest camel habitat. Expanding cultivation under government policies is gradually restricting movements of free roaming flocks/herds. Nomads were found highly vulnerable to external forces. RRA survey findings concluded that following two more groups had emerged from nomads as indicated in chart 1.

- a) Commercial nomads
- b) Nomad transhumants

**Chart 1. Shifts and trends in socio-economic systems of pastoral communities in Balochistan**



(Survey, 2000)

Khan *et al.* (1988) reported heavy parasitic infestation in sheep flocks of Balochistan where most of the pastoralists were mix livestock owners. They concluded that parasitic

diseases cause heavy annual economic losses and exceed those due to bacterial diseases. Saleem (1998) classified the pastoralists as local and non-local pastoralists and mentioned quite a few challenges to reconcile development in Pakistan. Saleem (1998) reported that pure pastoralists had become agro-pastoralists and likewise agro-pastoralists had shifted towards more sedentary and agriculturally based lifestyle in Balochistan province. He concluded that the drifts in traditional pastoralists' production systems were conclusively occurring because of changes in overall household as well as community economic structures and part of survival strategy under given socio-political and biological constraints.

Government of Pakistan (1998) reported -6.6% difference in camel population of Pakistan between the years 1986 and 1996. This decline in overall camel population may be attributed to the development constraints as well as transformation process as identified in this paper. However, micro level analysis is required to determine the magnitude and dynamics of this transformation process.

Machinery and tractors have emerged as a biggest threat to camel in Pakistan as an implication of government policies to encourage grain production through subsidies on tractors, implements etc. and better road networks in previously inaccessible camel habitats. This scenario is calling for commercial camel production, however, a rough task due to a little market demand for camel milk and meat.

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