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The 23rd International Grassland Congress (Sustainable use of Grassland Resources for Forage Production, Biodiversity and Environmental Protection) took place in New Delhi, India from November 20 through November 24, 2015.

Proceedings Editors: M. M. Roy, D. R. Malaviya, V. K. Yadav, Tejveer Singh, R. P. Sah, D. Vijay, and A. Radhakrishna

Published by Range Management Society of India

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Analysis of livelihood structure of pastoralists in Banni grassland in Kachchh district of Gujarat in India

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Keywords: Banni buffalo, Banni grassland, Charcoal, Maldhari, *Prosopis juliflora*

Introduction

Banni grassland in Kachchh district of Gujarat in India is situated at 69⁰24' E longitude to 23⁰42' N latitude axis and spread in about 3847 sq km area. Banni region is a vast salt affected plain and experiences arid climate with average rainfall of 317mm received by southwest monsoon spread between June to September with high coefficient of Variation of 65%. Banni grassland is home to migratory pastoralists, generally called maldharies, for more than 500 years. Banni area comprises of 48 hamlets/villages organized into 19 Panchayats with a population of approximately 40,000 people. Maldharies are landless and depend upon village commons (Gauchars) for their livestock rearing. *Banni* buffaloes, *kankrej* cows, sheep, goat and camel are the domesticated animals. Breeding of *kankrej* bullocks and *banni* buffaloes for draught and milch purpose respectively was the traditional occupation and main source of income for maldharies. They breed and sell these animals to farmers in Gujarat and other parts of the country. Since late 1970s there has been a gradual shift in livestock population formerly dominated by *kankrej* cows to one now dominated by *banni* buffaloes. Change in vegetation pattern, especially invasion of *Prosopis juliflora* is attributed as one of the main reasons by farmers for this occupational shift. Feeding on *P. juliflora* pods over a period of time leads to dislocation and weakening of jaws in cows leading to their death. Mechanization of agriculture in Kachchh and other parts of Gujarat has led to reduction in use of bullocks for draught purpose. Consequently the demand for *kankrej* bullocks has also reduced drastically. On the other hand, *banni* buffaloes are tolerant to ill effects of feeding on *P. juliflora*. Hence, number of *banni* buffaloes has increased drastically since 1980s when compared to *kankrej* cows. Improved road connectivity of villages in *banni* area to Bhuj city and other towns and establishment of milk collection centers in the region has also played a vital role in growth and development of *banni* buffalo based dairy enterprise. These internal and external factors have led to change in occupational structure in *banni* region. Hence, documentation of changes in occupational structure and the driving factors behind such change is important. This research paper has the objective of analyzing the combination of various livelihood options available for pastoralist households of *banni* region.

Materials and Methods

Eight villages in *banni* region were selected based on multi-stage random sampling technique. Pre-tested semi-structured interview schedule was specifically designed for the study. One hundred and sixty households were personally interviewed to collect data on various livelihood options in the region. Focused group discussions were also held with key informants in the villages to understand the changes in dynamics of the livelihood options. Households were categorized based on the combination of different enterprises contributing to the annual income of households. The percent share of households belonging to each category was calculated.

Results and Discussion

Various livelihood options for the households in *banni* region were enlisted based on the extensive review of literature, discussion with experts, key informants in the village and pastoralist households. The analysis of primary household data indicated that each family has one primary occupation. Each family also had several secondary occupations to augment annual income depending on the social group the family belonged to and other factors. Gender was also associated with various occupations in *banni* region. Embroidery work was being done by women in each household whereas leather work was practiced by men belonging to certain social groups.

The households were grouped into various categories based on the combination of different primary and secondary occupations of each household. The combination of livelihood options for households in *banni* region and the percent of households' dependant on each category have been provided in table 1.

Table 1: Occupational structure of pastoralist households in Banni grassland

Category	Primary occupation	Secondary occupation 1	Secondary occupation 2	% households
I	Buffalo rearing*			
IA	> 40 animals	Embroidery	Tourism	3
IB	20-40 animals	Embroidery	Charcoal preparation/ Tourism	7
IC	10-20 animals	Embroidery/leather work	Charcoal preparation	20
ID	5-10 animals	Embroidery/leather work	Charcoal preparation	25
IE	<5 animals	Embroidery/leather work	Charcoal preparation	15
II	Charcoal preparation	Labour work	Goat rearing/ embroidery	20
III	Sheep and goat rearing	Charcoal preparation	Labour work	3
IV	Handicrafts (metal work)	Embroidery	Trade	3
V	Services	Charcoal preparation	Embroidery	2
VI	Other (shops, trade, etc.)	Labour work	Charcoal preparation	2

* Number of buffaloes includes buffaloes of all age groups.

It is evident from the table that at least three enterprises contributed to the annual income of the households in banni region. Banni buffalo rearing is the primary occupation for approximately 70 percent of households in banni region, whereas sheep and goat rearing accounts for only 3 percent of households. Sixty percent households owned less than 20 buffaloes and 40 percent households owned less than 10 buffaloes. There has been reduction in number of animals owned by each household over generations. The number of households who owned cows exclusively in large numbers was found to be rare. Few households in each village owned 2 to 3 cows. Pastoralists shared that number of kankrej cows in each household were higher than banni buffaloes till 1970s. Occupational shift has led to gradual shifting towards buffalo based pastoralism.

It is interesting to note that *Prosopis juliflora* based charcoal preparation is the primary occupation for nearly 20 percent of households which are poor and do not own any buffaloes or cows. It is also a secondary occupation for majority of the households during drought/low rainfall years and non-rainy season. Embroidery work is a traditional occupation in all households of banni region and women in each family spend 3 to 4 hours a day in this activity. However, it is an economic activity only in certain villages such as Dhordo, Hodko, Patgar and Uddo. These villages are well connected by road to Bhuj city and some NGOs are working in these villages that supply raw materials and collect finished products at pre-agreed prices. Village Jura has 25 families which are completely involved in making and selling of copper bells.

Other occupations in banni region include services and tourism. A marine chemicals manufacturing company was established in salt desert adjacent to banni region in 1994 and nearly 250 families from nearby villages in Banni region have been employed. Gujarat government organizes Rann Utsav from October to March every year in white desert for last several years. Consequently, villages adjacent to this desert have been benefitted by the tourism. Certain pastoralists have established resorts/ villas for tourists and many others have found employment in tourism related activities during these months.

Conclusion

The livelihood of pastoralists in banni grasslands is contributed by at least three sources of income. Buffalo rearing is the primary occupation for nearly 70 percent households in banni grasslands, whereas sheep and goat rearing accounted for less than 5 percent households. Sixty percent households owned less than 20 buffaloes and 40 percent households owned less than 10 buffaloes. *Prosopis juliflora* based charcoal preparation was the primary occupation for 20 percent poor households, who did not own any buffaloes or cows, besides being secondary occupation for majority of households especially during drought/low rainfall years and non-rainy season. Handicrafts work including embroidery, leather work and metal work were found to be other major secondary occupations contributing to annual income of the pastoralist families. Certain occupations were found to be gender specific such as embroidery by women and leather work for men.