

## Status of Livestock Production in Gurez Valley of Jammu and Kashmir in India

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Received November 6, 2013; Revised November 19, 2013; Accepted November 20, 2013

### ABSTRACT

Livestock production situation in agro-pastoral production system of Gurez sub-valley of Kashmir was assessed based on field visits and interview of selected households as well as group discussion with community leaders. The survey showed that livestock was the main source of income; followed by agriculture and off-farm activities. Among the livestock, cattle were the most important livestock species followed by sheep, horse and chicken. The main feed resources of the area were highland pastures, forest lands, common property resources and cultivated fodders; the production of these are also decreasing due to lack of required scientific interventions. Productivity of animals in terms of milk production, growth rate and reproductive performance was generally low owing to primitive livestock breeding and rearing practices, scarcity of feed and fodder, migration of labour and lack of extension support services.

**Key words:** Livestock husbandry, agro-pastoral system, production performance

### INTRODUCTION

Livestock sector plays an important role in socio-economic upliftment and provides economic security at times of stress. It contributes about 6 percent to the Gross Domestic Product (GDP) and 25 percent to the Agricultural GDP of India. Over the last two decades, livestock sector has grown at an annual rate of 5.6 %, which is higher than 3.3 % growth in agricultural sector (Jabir 2007). Animal husbandry activities constitute even more important part of the agro-ecological and socio-economic system in hill and mountain agro-ecological system where crop production is constrained due to small land holdings, poor soil fertility, inclement weather and shorter growing seasons. The importance of livestock in fragile ecosystems goes beyond its food production function (Birthal et al. 2002). Besides providing quality protein in form of meat, milk and egg they provide much needed draft power, pack animal services and nutrient rich organic manure

for sustainable agriculture. Livestock wealth also acts as a dependable cushion against adversities like crop failures due to natural calamities to which such areas are more prone to. Literature is replete with several region specific studies documenting status of livestock husbandry in Kumaon region of Uttarakhand (Meena et al. 2007), Kangra District of Himachal Pradesh (Chauhan et al. 1994), draught prone villages of Ahmednagar Maharashtra (Phand et al. 2007), Sunderbans in West Bengal (Anand et al. 2012) etc. India's North Western Himalayan region is largely mountainous with rugged terrain and inhospitable climate characterized by fragility, marginality, inaccessibility and poor market support and Gurez is a typical example of such situation. The area is a sub valley of picturesque Kashmir valley which like other mountain and hill agro-ecological zones has its own unique opportunities and challenges. A study was therefore undertaken to assess the livestock production situation in agro-pastoral production system of Gurez.

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## MATERIALS AND METHODS

A study was carried out in Gurez which is located at a distance of around 130 Km from Srinagar city, the summer capital of the state of Jammu and Kashmir in district Bandipore across Razdan pass at an altitude 11672 ft above msl. The altitude of Gurez valley ranges between 2460 to 3900 m above msl and extends over an area of 362.88 sq. km. Other important features of Gurez valley are summarised in Table 1. The Valley remains totally isolated from the rest of the world for 4-5 months during winter season where in entire population has to survive on the local produce or the stocks raised before onset of winter. Livestock production scenario of Gurez valley was assessed based on field visits and interview of selected households as well as group discussions with the community leaders. A semi-structured questionnaire was used for interviewing. Informal discussions were also held with the development agents working in the localities. The collected data were analyzed using descriptive statistics.

**Table 1:** Major Characteristics of Gurez Valley

S. No	Particulars	Status
1	Area (sq km)	362.88
2	Population (2001 census)	28.786
3	Population density (persons/sq Km)	79
4	Literacy (%)	43
5	Rural population (%)	100
6	Schedule Tribe Population (%)	100
7	Administrative status	
	Assembly constituency	One: Gurez
	Tehsils	One: Gurez
	Blocks	Two: Dawer, Tulial
	Panchayats	10
	Villages	27
8	Altitude (meters above msl)	2460 to 3900
9	Average temperature	Max: 25°C, Min: -20°C
10	Soil type	Sandy loam
11	Livestock	Cattle, Yak and their hybrids Sheep, Goat, Horses, Ponies and Chicken.

Source: Wani et al. (2012)

## RESULTS AND DISCUSSION

Some of the indicators of livestock production of Gurez valley are indicated in Table 2. Overall agriculture and animal husbandry scenario is of subsistence level with little or no technological intervention. Almost all the farm produce is consumed locally.

**Table 2:** Indicators of livestock production in Gurez valley

Sl. No	Indicator	Status
1	Population (1000 No's)	
	Total Cattle	8.50
	Breedable cows	5.00
	Yaks	4.69
	Horse /mules	3.70
	Total Sheep	50.69
	Cross bred Sheep	28.24
	Local Sheep	22.45
	Goat	9.05
2	Produce (1000 Kg)	
	Wool	79.08
	Mutton	293.34
3	Per capita milk availability (g/day)	136.00
4	Average daily milk yield per cow (L)	2.30

Source: Wani et al. (2012)

### Large ruminants

Cattle were found to be most important livestock species. Mostly dwarf local cattle (desi/zebu) and jersey cross breeds were reared for milk and draft purpose. Cattle x Yak hybrids locally called *Zho* or *Zombo* were also reared. *Zho/Zhomo* were reported to have better milk and draft potential and famous for their hardiness and endurance for ploughing and pack animal services. Proximity to Kargil District of Ladakh area and high altitude justifies the presence of yak and its hybrids in the area. Natural service was reported to be the most prevalent breeding method due to inaccessibility and poor Artificial Insemination (AI) infrastructure facilities. Jersey bulls were kept available by Animal Husbandry Department to provide breeding cover. Breeding of animals mainly through natural service with available bulls due to poor facility of artificial insemination in Kumaon region of Uttrakhand was also reported by Meena et al. (2007). It took 2-3 services per conception and next heat was observed 4-5 months after parturition. Milk production in

crossbreds was reported to be higher than that of local cattle. While cross breeds were reported to produce 8-10 Kg of milk daily throughout the year, local cattle produced 3-4 Kg daily for 8 months a year. Calf mortality, as high as 20-40% was reported in crossbreds. Milk produced was used mostly for domestic consumption and very less quantity was sold as surplus @ Rs 25-30/Kg. Very few respondents reported conversion of milk to milk-products like Paneer and Ghee. Poor performance and increased mortalities may be attributed to low genetic potential of the local animals, negligible breed improvement programmes, poor winter feeding, lack of extension services, unhygienic housing and poor health cover facilities.

### Small ruminants

The average number of small ruminants per household ranged from 10-15 sheep and 2-3 goats. The sheep were of Gurezi breed or the crosses of Gurezi with Kashmir Merino while as goats were of bakerwal breed. Sheep were reared for wool, meat and milk while goats were being reared for meat, milk and hairs, though like other parts of Kashmir, Gurezis also preferred mutton to chevon. This preference of mutton over chevon is a stark contrast to rest of Indian sub-continent where reverse is true. While no seasonality was reported with respect to lambing in sheep, the kidding in goats was reported to take place twice a year in May and September. Average birth weight of lambs and kids was reported to be 3 kg and age at six months of age was reported to be 15 kg in both sheep and goat. Crossbred Merino sheep was reported to attain higher adult body weight of 35-40 Kg as compared to only 20 Kg of local Gurezi sheep. Sheep and goat produced were reported to be sold for consumption within Gurez and adjoining Bandipora district. The prevalent market prices of meat at the time of study were Rs 300/Kg. Twice a year (March and September) shearing of sheep was reported. Locally made hand shears were used for shearing and no grading of wool was practiced but it was sold as a mixed lot and used locally for making *Pattoo*, *Loyee* etc. Similarly, goat hairs were used in making floor mats. Poor performance of small ruminants may be attributed to nutritional stress during winter months, inbreeding, poor health cover facilities and over-exploitation of the already neglected natural pasture and common property resources.

### Equines

Local non-descript horses were kept by few households and used as pack animals. Over the years number of horses has declined because of construction of motorable roads and increased use of auto-mobiles by defence forces that used to hire potter services turning horses into a liability. Decline in non-food uses of livestock such as draught power has also been reported by Birthal and Taneja (2012).

### Poultry

Chicken was the only poultry bird being reared for meat and egg production. Unlike rest of Bandipora district, which has a good population of duck and geese no non-chicken poultry species was reported from the area. Besides local birds, people kept Vanraja and other improved varieties of chicken that have been introduced in the area by the Krishi Vigyan Kendra Bandipore and Department of Animal Husbandry. The average number of chicken per household varied from 5-10. During summer months hens laid as many as 20 eggs/month whereas no egg production was reported during winter months; which may be attributed to the short day length coupled with very little scavenging feed resources. As reported by the respondent's poultry meat and eggs fetched premium prices owing to higher demand and non-vegetarian food habits. Poultry meat was reportedly sold at Rs 200/kg live weight in summer and Rs 300/Kg live weight in winter months depending upon availability and demand of the meat during this period. Eggs were sold at premium price of Rs 6/egg.

### Feed and fodder

The main fodder resources of the Gurez comprised of cultivated oats and maize, natural pastures, forest lands, community lands, common property resources, tree leaves and maize straw. Surplus fodders and grasses available in forest lands and common property resources was harvested for hay making during summers for feeding during lean months. This was one of the priority activities of the livestock owners. Concentrate feeding was limited and only very few well-of livestock owners purchased wheat straw, bran and cakes from outside the Gurez for supplementation during lean months only. Fortification of fodders, silage making or feeding of mineral mixtures was not prevalent in the area. Feed and fodder availability can be

increased from the area by utilizing improved varieties, development of Common Property Resources (CPRs) and barren lands and better knowhow regarding fodder production and their preservation. The scarcity of fodders can also be taken care of by providing effective fodder banks, utilization of non-conventional feed resources and feed and mineral block technologies.

### **Animal Housing**

Log houses were mostly used for housing cattle, sheep and goat. Traditional practice of keeping the livestock in the ground floor with human dwellings on other floors is preferred over other conventional type of houses. This practice keeps the human dwellings warm during severe cold winters due to available heat increment from the livestock. All the animals were kept in the same house. A separate enclosure within same shed was used for housing sheep and goat along with the cattle. Drainage, sanitation and ventilation were not proper which resulted in unhygienic housing and as such can be attributed for low performance and increased morbidity and mortalities. During winters animals were rarely let out and remained confined to their houses. Houses were cleaned only once or twice a week. Use of bedding materials was rarely practiced. Some old houses had wooden flooring that was relatively comfortable to animals and ensured better sanitation.

### **Animal diseases**

Study revealed that easily preventable diseases like diarrhea, bloat and Foot and Mouth Disease (FMD) among cattle, pneumonia, foot rot, FMD and ecto-parasites among sheep and Ranikhet among poultry were prevalent resulting in loss of performances, increased morbidities and mortalities. Vaccination and dosing was seldom carried out by the Animal and Sheep Husbandry Departments. Sheep rearers were unaware of dipping and provision of salt licks. Provision of timely health cover *viz.* dosing, vaccination, dipping and supplementation can mitigate most of the health problems observed in the area.

### **Division of labour**

Our study revealed that out of the several activities related to livestock rearing, men folk looked after grazing of the animals in pastures and local community lands while women folk looked

after the feeding and watering of animals and cleaning of animal houses during winter. Collection, preservation and storage of fodder were shared by men and women while as marketing of surplus animal produce or the animal as whole was taken care of by men folk. Backyard poultry farming was found to be exclusively the domain of farm women. Likewise women were reported to be mainly responsible for livestock and poultry rearing in Sunderbans of West Bengal (Anand et al. 2012).

### **Major constraints**

Non-availability of feed and fodder particularly during winter months was perceived to be the most important constraint in livestock husbandry and main reason for decreasing livestock numbers per house hold over the years. While smaller land holding and shorter growing season limited the cultivation of fodders, proximity to the line of control and loss of accessibility to pastures because of security concerns has deprived the livestock and livestock owners of the area from nutritive natural pastures that are now out of bound for the civilian population. This is consistent with the findings of studies in Ethiopia (Oba 1998, Oba et al. 2000, Oba and Kotle 2001, Desta and Coppock 2004), which showed that Borana pastoralism is under increasing pressure due to shrinkage of grazing lands as a result of ethnic conflicts, demarcation of regional boundaries and displacement of Borana pastoralists from large parts of the grazing lands. This has increased the pressure on available pastures and resulted in their deterioration. Similarly, using Common property resources to non-agriculture purposes has also depleted the natural grazing areas. The pressure on pastures whatever available, from migratory sheep populations from other parts of the state was perceived as yet another constraint.

Besides non-availability of feed and fodder, migration to urban centers and shifting to other seemingly lucrative means of livelihood like government services, Mahatama Gandhi National Rural Employment Guarantee Act (MGNREGA) programme and defence related services resulted in non-availability of work force to take care of livestock.

### **Interventions suggested**

Based on the study following interventions are suggested for overall development of livestock husbandry.

1. Genetic improvement of livestock through crossbreeding among dairy cattle, selection in small ruminants and introduction of improved poultry strains/ varieties for backyard poultry farming.
  2. Feed and fodder improvement through introduction of new short duration fodder varieties with higher biomass yield. Pasture development through regulated grazing and making available hitherto in-accessible pastures to decrease pressure on available pastures.
  3. Establishment of fodder banks in remote villages.
  4. Popularisation of fodder fortification techniques, provision of salt and mineral licks.
  5. Improvement in housing by way of providing proper drainage, ventilation and bedding material particularly during winter.
  6. Animal health improvement by way of providing timely vaccination cover, area specific mineral supplementation, dosing and dipping services.
- A strong need based research and development support taking into consideration the unique local agro-climatic conditions, natural resource base and socio-economic conditions coupled with well orchestrated delivery system for transfer of technology and services is required for fruitful intervention.

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