

SYSTEM STUDY ON SEDENTARY GADDIS OF KANGRA VALLEY

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INTRODUCTION

Gaddis, the nomadic sheep and goat herders are one of the most important migratory tribes of the Himalaya. It has been recorded that they migrate because they have always been shepherds (perhaps, traders too) and for generations they have been in the habit of moving to find pastures for their flocks. For them cultivation of crops is less important than the welfare of their flocks (Anonymous, 1994). Newal (1967), on the contrary, concludes that the Gaddis are agricultural people who take up other occupations from occupational necessity rather than desire and it is clear that they are not principally sheep rearing nomadic people but have been so far hundreds of years to raise additional means of sustenance. Notwithstanding these conflicting views, the Gaddis have always been considered as migratory graziers whose native place of habitation is Bharmour region of Chamba district in Himachal Pradesh State of India. Some authors consider them to be of Aryan origin and the original inhabitants of Bharmour region while others ascribe their origin to immigration from the plains and subsequent settlement in the hills (Anonymous, 1994). Rawat (1980) believes that due to land fragmentation and harsh climatic conditions, the Gaddis could not produce enough for their survival while living in Chamba district. Hence many of them have established permanent homes in lower regions of Kangra valley. Even here the tiny homesteads have forced them to maintain the flocks of goat and sheep to generate extra cash. These Gaddis can be considered as sedentary since they do not practice transhumance any more and have adopted many diverse professions (Rawat, 1980). The total sedentization of Gaddis can be ascribed to various political and administrative pressures and availability of diverse professions, besides the enormous difficulties faced by them during transhumance (Misri 1998) During the British time, it was believed that the large flocks of Gaddis had done enormous damage to the vegetation and forest cover. During 1915 the grazing tax levied on Gaddis was enhanced to discourage them from grazing in the forests and grasslands. Goat was considered as the greatest enemy of the vegetation (Rawat 1980). These restrictions and pressures continued unabated and during 1970 the state government froze the size of the flock and for every given up goat two sheep were allowed to be added to the flock (Verma, 1996). During post-independence period the government policies lead to the decline in grazing areas. Planting of forests and allotment of *Shamlat* lands to landless squeezed the grazing lands thus forcing the Gaddis to abandon migratory system. Restrictions in issuing the grazing permits to the Gaddis further added to their sedentization.

A survey was undertaken to understand the present socio – economic status, livestock rearing practices and feeding strategies adopted by the sedentary Gaddis. The survey was spread over 8 villages situated around Palampur in Kangra District. This paper aims at presenting the findings of the survey.

MATERIAL AND METHODS

Eight villages, Dhoong, Kulani, Lehnga, Bharmat, Nain, Gohar, Spadoo and Lohna were selected for the study. These villages have considerable population of sedentary Gaddis. The respondents were selected at random and sample size varied from 20 –40 families each village, depending upon the population of Gaddis. A questionnaire listing 23 aspects to be surveyed was prepared and information was noted down in field books. The quantitative data were analyzed and are presented in averages or percentages.

RESULTS

Out of 23 aspects enumerated under present investigation, six pertained to evince information about the reasons leading to sedentization. The questions, thus, asked were :1) how long you have been living here 2) when your family left migration 3) why did you stop migration 4) Does anybody from your family still migrate 5) would you again adopt migration, if given a chance 6) which system is better, migratory or sedentary. For the first four questions hundred percent respondents in all the eight villages had a standard answer, “we don't know”. This amply indicated that they have been sedentary for quite sometime. Only thirty five percent respondents in all the eight villages showed their inclination to migrate to Bharmour region but they did not wish to adopt migratory system of animal rearing. The main attractions of Bharmour region, as enumerated by the respondents are: remunerative horticulture and the scheduled tribe status of Gaddis living in that area which in turn bestows reservation and other benefits from the Government. Hundred percent respondents in the entire eight villages preferred sedentary system to the migratory system. Information gathered on- other aspects are presented below under separate headings.

SOCIO-ECONOMIC PROFILE

Literacy

The literacy percentage of the area is significantly high. Maximum literacy percentage of 94.74 % was found in village Lohna while Bharmat and Gohar followed by 77.31 and 72.9% respectively. Lehnga had the

minimum literacy percentage of 50.72%. The major reason for high literacy rate can be the proximity of all these villages to Palampur, which has very good educational facilities. However, each village had its own school/schools as well. The details of socio-economic profile are presented in Table 1.

Family Structure

The sedentary Gaddis have, comparatively, small families and the people are well aware of the need to have lesser children. This could be correlated to the high literacy rate of the area. The highest number of members (6.27) per family was found in village Lehnga. It was followed by Spadoo (5.90) and Gohar 95.70). The least number of children per family (1.44/family) were found in Kulani.

Land Holding

The land holding is very small in the area. Eighty nine percent families in the area can not produce enough from their lands to sustain them. They have to purchase additional food grains from open market or the fair price shops established in the area by the government. Biggest average land holding of 0.52 ha was found in village Bharmat. The entire land holding is not cultivated. Either some portion which is not crop worthy is left for grazing or a portion of arable land is deliberately left uncultivated to produce herbage for the livestock. This fact amply illustrates the Gaddis's concern for his animals. In Bharmat 76 % of the land holding (0.40 ha/family) was put under cultivation. The highest proportion of land holding 51.85% left for grassland was found in village Dhoong.

Milk Production

The milch animals are essentially reared for the consumption of milk by the family. The average milk production/family ranges between 3.3 – 5.90 lt. Only 23 percent families in the area sell a part of the milk produced.

Lehnga village leads in wool production where a family produces an average of 115kg wool /year. It is followed by Dhoong (40.87 kg/family) and Kulani (13.8 kg/ family). In other villages wool is not produced.

Sale of Sheep and Goat

Sale of sheep and goats contributes significantly to the family income of medium and large herd owners. Gaddis belonging to Lehnga village lead in the area in sales of sheep and goat. Each family sells an average of 220 sheep and 240 goats/year @ Rs 1400 and 1750 respectively.

Annual Family Income

It was very difficult to extract the realistic information about the family income. No one keeps the accounts of sundry sales of milk or animals in small numbers. Besides, everybody was reluctant to divulge the family income. On being assured that the information will be kept a secret, round about figures were provided. Gaddis from village Lehnga are the richest with an average annual income of Rs 64,227.27/family. Gaddis of Gohar (average annual income Rs 55,500/family/year) and Dhoong (average annual income Rs 38,625/family/year) follow them.

Table 1: Socio-Economic profile of Sedentary Gaddis

Aspect	Villages							
	Dhoong	Kulani	Lehnga	Bharmat	Nain	Gohar	Spadoo	Lohna
Literacy (%)	65	51.21	50.72	77.31	70.83	72.9	72.0	94.74
Av. Member /family	5.65 (1-16)	4.55 (2-9)	6.27 (4-5)	5.10 (4-9)	4.8 (2-6)	5.7 (5-7)	5.90 (3-14)	4.4 (4-5)
Average no. of children/family	2.70 (1-6)	1.44 (1-3)	2.09 (2-4)	1.52 (Nil-3)	1.7 (0-3)	1.8 (1-3)	2.3 (1-4)	2.6 (2-3)
Av. Land (ha) holding/family	0.42 (.08-4)	0.34 (0.2-0.4)	0.31 (0.12- 0.6)	0.52 (0.2-1.0)	0.4 (0.5-1)	0.25 (0.16-0.04)	0.2 (0.12-0.32)	0.38 (0.24-0.48)
Av. Cultivated land/family (ha)	0.27 (.08-2)	0.26 (0.1-0.4)	0.24 (0.08-0.52)	0.40 (0.16-0.8)	0.13 (0.16-0.8)	0.21 (0.12-0.36)	0.17 (0.12-0.28)	0.32 (0.2-0.4)
Av. Grassland area/family (ha)	0.14 (0.04-2)	0.08 (0.04-0.2)	0.06 (0.04-0.24)	0.11 (0.04-0.2)	0.1 (0.04-0.2)	0.04 (0.04-0.08)	0.04 (0.04-0.08)	0.06 (0.04-0.08)
Av. Milk (Lt.) production/family/day	5.03 (3-12)	4.3 (3-7)	5.90 (3-10)	4 (3-5)	3.5 (3-5)	3.3 (3-4)	3.5 (3-4)	4.6 (4-6)
Av. Wool (Kg) production/family/annum	40.87 (7-500)	13.8 (125-700)	115 (80-700)	-	-	-	-	-

Av. Sale of sheep/year/family (Nos)	3.70	12.50	220	-	-	37.5	-	-
Av. Sale of goat/year/family (Nos.)	5.41	12.50	240	-	5	-	-	-
Av. Sale price of each sheep (RS)	1327.27	1350.00	1400.00	-	-	1350	-	-
Av. Sale price of each goat (RS)	1354.54	1650.00	1750.00	-	1500	-	-	-
Av. Annual income (RS)	38,625 (4000-200000)	36,333 (15,000-60,000)	64,227.27 (11,500-2,50,000)	33,400 (15,000-80,000)	28,450 (15000-70,000)	55,500 (20,000-150,000)	33,900 (12000-150,000)	32,600 (18000-50,000)

Range in Parenthesis

Cropping Pattern

Cultivation consists of seven crop sequences in the area. These are:

1) Maize – Wheat + Barley 2)Wheat – Maize + Rice 3) Wheat – Maize 4) Wheat- Rice 5) Barley 6) Wheat + Barley – Maize + Rice 7) Rice – Maize.

The cropping pattern is not essentially dependent upon resource availability; it is more so on the food preferences of the local people. Even the irrigated areas are sown during Kharif under maize by some Gaddis since they prefer maize to rice. A maximum of 100 percent families in Lohna village practice wheat – Maize + Rice crop sequence. A minimum number of 5 percent families in Bharmat sow wheat – Maize rotation. The details about the cropping pattern of the area are presented in Table 2.

Table 2: Cropping Pattern (Adoption by % families)

	W+B-M	W-R+M	W-M	W-R	BER	W+B-MR	R-M
Dhoong	78.12	9.37	9.37	31.2	-	-	-
Kulani	33.33	-	-	-	-	66.67	-
Lehnga	63.64	-	-	-	-	36.36	-
Bharmat	-	65	5	30	45	-	-
Nain	-	90	10	-	-	-	-
Gohar	-	50	-	50	-	-	-
Spadoo	19	45	-	18	-	9	9
Lohna	-	100	-	-	-	-	-

W: Wheat, B: Barley, M: Maize, R: Rice, Ber: Berseem,

Professions

The Gaddis in the study area have adopted many diverse professions. 18 types of professions have been recorded in the area. Out of these sheep rearing, daily wage earning by labour, autorickshaw driving, government job and farming have been adopted as solo professions, rest of the 14 professions are in various combinations (Table 3). The maximum percent families of 54 have adopted farming and daily wage earning as their profession in Spadoo village. 40.62 percent families in Dhoong survive only on daily wage earning. The profession of sheep rearing and establishment of a small-scale industry were only found in village Spadoo. Similarly auto – rickshaw driving adopted by 3.12 percent families was found only in village Dhoong. Families surviving only on pension provided to ex-servicemen of the Indian Army were found only in Gohar and Spadoo.

Table 3: Professions adopted by sedentary Gaddis (% of families)

Profession	Villages							
	Dhoong	Kulani	Lehnga	Bharmat	Nain	Gohar	Spadoo	Lohna
Sheep rearing	15.62	11.11	27.27	-	-	20	-	-
Daily wage earning	40.62	33.33	18.18	5.26	-	-	-	-
Sheep rearing + Daily wage	3.12	-	-	-	-	-	-	-
Auto Driver	3.12	-	-	-	-	-	-	-
Sheep rearing + Govt. Job	9.37	-	-	-	-	30	-	-
Govt. Job	12.5	55.55	36.36	-	10	10	10	-

Govt. Job + SSI	3.12	-	-	10.52	-	10	54	20
Farming + Daily wage	3.12	-	18.18	-	30	10	-	-
Sheep rearing + farming	6.28	-	-	21.05	-	20	18	-
Pension as Ex-ser	-	-	-	10.52	-	-	-	-
Farming + Business	-	-	-	36.84	-	-	9	40
Farming + pension as Ex-ser	-	-	-	10.55	-	-	-	-
Farming	-	-	-	-	20	-	-	20
Farming + Govt Job	-	-	-	-	10	-	-	-
Farming + private job-	-	-	-	-	10	-	-	-
Farming + Army service	-	-	-	-	20	-	9	-
Sheep rearing + SSI	-	-	-	-	-	-	-	2
Farming + SSI	-	-	-	-	-	-	-	20

SSI: Small Scale Industry; Ex-ser: Ex - Serviceman

Animal Rearing Practices

Animal rearing is an important sole or supplementary profession for the Gaddis of the study area. In four villages i.e.; Dhoong, Kulani, Lehnga and Bharmat 6.26, 22.23, 9.1 and 5.0 % families did not rear any animal. Cows, bulls, goats, Sheep and Buffalo are the only animals reared in the area. Buffalo was found only in four villages listed above. All the families rearing animals had atleast one cow each. The average numbers of livestock owned by a family in the study area are given in Table 4. The highest number of 87.20-animals/ family was found in village Gohar and the number of 1.90 animals/family were found in village Spadoo. Others details about the livestock are given below.

Table 4: Average No. of Livestock/family

Village	Cows	Bulls	Goats	Sheep	Buffalo	Total
Dhoong	1.32	0.51	21.0	19.0	0.19	42.02
Kulani	1.37	1.0	12.75	1.12	0.25	16.49
Lehnga	1.72	0.18	44.09	30.54	0.18	76.71
Bharmat	1.70	1.0	-	-	0.1	2.8
Nain	1.20	1.10	2.7	-	-	5.0
Gohar	1.0	1.20	-	85.0	-	87.20
Spadoo	1.0	0.90	-	-	-	1.90
Lohna	1.25	1.0	-	-	-	2.25

Herd Structure

The herd structure found in the area is very diverse. As many as ten types of herds were enumerated in the area, these are: 1) only cow 2) Cow + Bull + Goat 3) Cow + Bull +Sheep 4) Cow + Sheep +Goat 5) Cow +Goat 6) Cow + Bull + Sheep +Goat 7) Cow + Sheep 8) Cow + Bull 9) Cow + Bull + Buffalo 10) Cow + Bull + Buffalo +Sheep +Goat. The percentage presence of various animals in different herds varies from village to village. The significant feature is that all the herds have cow as a common component. The maximum percentage of cows (56.25 %) was found in herds of Bharmat. The percentage composition of various types of herds is presented in Table 5. The details about percent families owning different types of herds are presented in Table 6. Maximum number of diverse herds was found in Dhoong where Gaddis had 9 types of herds. In Lohna 100% families reared only cows and Bulls.

Feeding Pattern

The feeding of animals is clearly demarcated in three stages in the study area. These stages coincide with the availability of green /dry forage and tree leaves. These three stages are:

Dec – April: Tree leaf fodder (green) + hay/crop residues @ 10-12 kg/animal/day

May – June: Wheat straw + green grass/ only wheat straw/wheat straw + Tree leaf Fodder @ 10 kg/animal/day.

July- Nov: Green grass/Freshly conserved hay @ 20-25 kg/animal/day.

The feeding regime described above is in supplementation to the grazing which is most common in the area. At the onset of monsoon (late June) the grasslands, both private and community, are closed to grazing. During monsoon green grass is stall fed to the livestock. This continues till October when the grasslands are harvested and the herbage is conserved as hay. After the harvest, grasslands are opened for indiscriminate grazing which continues till the coming monsoon (late June).

Hundred percent families' face fodder shortage in the area. Hay and crop residues are insufficient and the shortages are made up by purchasing wheat straw which is transported from Panjab to these villages.

The tree leaf use is very common and the farmers in the area have devised fodder tree use calendars. This, perhaps is a traditional management tool or a system to avoid the tree leaf use when the anti-quality factors are active in these. A typical fodder tree use calendar of the area is

April – June: *Albizia lebbeck*, *Artocarpus chaplasha*, *Ficus auriculata*, *F. racemosa*,
Leucaena leucocephala, *Morus alba*.

July – October: Grazing

Nov – March: *Bauhinia variegata*, *Dendrocalamus hamiltonii*, *Grewia optiva*, *Terminalia alata*.

Table 5: Herd Structure (%)

Herd	Villages							
	Dhoong	Kulani	Lehnga	Bharmat	Nain	Gohar	Spadoo	Lohna
C+ B + G	-	-	-	9.09- 13.63 - 77.28	-	-	-	-
C+ B + S	0.4 - 0.6 - 98.9	-	-	-	-	0.4 - 0.9 - 98.7	-	-
C+ S + G	1.2 -59.3 - 39.48	0.99 - 54.45 - 44.56	-	-	8.5 - 17.39 - 73.91	-	-	-
C + G	55.55 - 44.45	33.33 - 66.67	-	-	10 - 90	-	-	-
C+B+S+G	2.04 - 2.72 - 51.02 - 44.21	-	1.07 - 47.72 - 51.21	-	-	-	-	-
C+S	40 -60	-	-	-	-	1 - 99	-	-
C + B	33.33 - 66.67	50-50	-	56.25-43.75	46 - 54	36 - 64	37-63	53 - 47
C + B + BF	27.27 - 36.36 - 36.37	33.33 - 33.33 - 33.33	33.33 - 33.33 - 33.33	50 - 25 - 25	-	-	-	-
C+B+BF+S +G	3.57 - 3.57 - 53.58	-	-	-	-	-	-	-

C: Cow, B: Bull, G: Goat, S: Sheep, BF: Buffalo

Table 6: Animal rearing profile of sedentary Gaddis

Village	Percent families owning different herds										
	Nil	C+B+G	C+B+S	C	C+G	C+S+G	C+B+S+G	C+S	C+B	C+B+BF	C+B+B+BF +S+G
Dhoong	6.26	-	6.25	31.2	12.5	18.7	6.25	3.12	6.25	6.25	3.12
Kulani	22.23	-	-	11.1	11.1	11.1	-	-	44.44	11.11	-
Lehnga	9.1	-	-	45.45	-	36.36	-	-	-	9.09	-
Bharmat	5	10	-	20	5	-	-	-	60	-	-
Nain	-	20	-	20	10	-	-	-	50	-	-
Gohar	-	-	40	10	-	-	-	20	30	-	-
Spadoo	-	-	-	45	-	-	-	-	55	-	-
Lohna	-	-	-	-	-	-	-	-	100	-	-

C:Cow, B: Bull, G: Goat, S:Sheep, BF: Buffalo

CONCLUSIONS

The sedentary Gaddis, inspite of having left transhumance long back, still consider livestock rearing an important aspect of their life. This might be because of economic reasons but the importance of animal rearing remains unchanged in the socio-economic profile of Gaddis. There has been a remarkable progression in various facets like literacy and family planning. All the respondents were very receptive and ready to adopt new technologies for farming and livestock management. However, in order to understand the livestock rearing systems of the area and make them a sustainable biomass availability base following needs to be done.

- Evaluation of pasture use pattern in the entire Himalaya to highlight the shortcomings and benefits/disadvantages of transhumance and sedenterisation.
- Demonstration of pertinent technologies for pasture and forage resource base improvement, management and utilization.
- Increase in area under fodder tree plantations.
- Development of appropriate post-harvest technologies.
- Formulation of resource based feed budgeting for feeding the animals.
- Creation of marketing facilities for animal products.

- Creation of appropriate technologies for processing and value addition of livestock products.

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