



RESEARCH ARTICLE

ANALYSING SUSTAINABILITY OF ALTERNATE LIVELIHOOD STRATEGIES IN GUJJAR PASTORALISTS OF SHIVALIK FOOTHILLS OF HIMALAYAS

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ABSTRACT

This paper examines the household livelihood strategies under resettlement stress of Van Gujjar community in the Shivalik foothills of Northern India. It also looks at the relationship between household assets and livelihood strategies. The accessibility to capital assets was assessed by the marginalized and depressed sections of the society and analysed in detail. Major causes of increasing exclusion from their natural habitat and increasing sedentarization. Livestock continues to be the most important asset determining livelihood outcomes. The livelihood strategies have been investigated in relation to education, Social Participation, credit facilities, cooking fuel and Source of water. The alternate livelihood strategies adopted by Van Gujjars includes diversification of life stock rearing, wage employment and exchange of labour. Mitigation of sedentarization distress requires provision of education, health and other social safety measures.

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INTRODUCTION

Van Gujjars are fully pastoralists following transhumance between two distinct eco zones without much diversification of subsistence strategy. The passageways between different subsistence strategies often encounter a regular thoroughfare. Sedentarization of forest dwelling Van Gujjars of Rajaji National Park has changed the social life and value of those people. Pastoralists have been turned into "crop cultivator" and laborers in nearby towns. The creation of Govind National Park is forcing the nomadic Van Gujjars to sacrifice their traditional livelihood to make way for environmental conservation. State government has not offered any alternative summer grazing land for them. The most surprising incident is that the Van Gujjars are not in the compensation plan of government for their rights. The process of sedentarization of the nomadic pastoralists must be in a way that the rights of those people over their grazing land would not be overlooked. When allotting land for compensating the rights, the present number of family heads should be counted. The political barrier between neighbouring states should be removed and cross-state grazing could be encouraged.

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There has been big political problem in allowing the pastoral herders into each other's boundary among Uttar Pradesh, Uttarakhand and Himachal Pradesh. This problem is largely faced by the nomadic Van Gujjars after creation of Uttarakhand state in 2000 from united province of Uttar Pradesh (Rubina, 2011). 'Sustainable' then refers to the longer-term and 'livelihood' to the many activities which make up a living. To improve the livelihoods status in these regions the concept of sustainable livelihoods is increasingly gaining ground important in research and development initiatives for poverty alleviation, rural agriculture development and rural resources management (Chambers, 1987; Ashley, 2000).

Broad sustainable livelihood principles underpin application of the sustainable livelihood approach and most of them draw on some form of livelihoods analysis to assess how development activities fit with the livelihoods of the poor (Carney et al., 1999 DFID). The first step in this study of household livelihood analysis is to categorize livelihood strategies and understand how household well-being is related to each strategy. Livelihood strategies can easily be identified and characterized using well-being status. The wealth classification is mainly determined by livestock holding in Gujjar. According to the information obtained from the focus groups discussions in Gujjar community, rich households own more

than 10 Buffaloes. The medium households own up to 5-10 Buffaloes and poor own less than 5 Buffaloes. The rich households are mainly engaged in livestock rearing while the medium households engage in both wage employment and livestock rearing. The poor households do not have livestock and are involved in wage employment.

Well-being status defined according to the Gujjar (n=100)

	Rich	Medium	Poor	Total
Gujjar	26(26)	52(52)	22(22)	100(100)

MATERIALS AND METHODS

For the purpose of taking up livelihood analysis in Gujjar community, five capital assets (physical, human, financial, social and natural) were assessed using primary and secondary data. Primary data collected by adopting rapid and the participatory methods using appropriate analysis tools (DFID 2000). During data collection for present study, every key indicator of different capital assets were evaluated at village level with the participation of the community and weighted on fixed marked methods according to their importance. The rapid methods referring to primary data, rapid case studies, key informants interviews and focused group discussion etc. while participatory methods used in an extractive mode of in-depth studies. Detailed process of data collection followed in this study is depicted in various stages. In the process of *stage I* of rapid methods the secondary data related to different kinds of capital assets were collected from different departments of Government agencies such as Forest office (Van Vibhaag) and Gram Panchayat officials.

In the *Stage II* of participatory approach about 50 to 78 percent of sample households in the village participated in focus group discussions. The key issues discussed were the status of the five capitals and employment activities in the village. These exercises were continued for three to four days in each of the selected villages and different activities like collective mapping of the local area, developing a time line, ranking the importance of problems inside a matrix, wealth ranking, doing observation walks, producing seasonality calendar etc. The process of PRA was very successful for putting together the information within limited time. The simple method of percentage used to access the present status of livelihoods capital assets in both the villages. In each village the source of livelihoods focused mainly on seven core activities i.e., Wages, Livestock, Wage and Livestock, Wage and farming and wage employment, livestock and daily wages.

The data were derived from on-farm and off-farm activities based on the village level study. The concept of rural income generating activities and different kinds of dependencies were elaborated broadly to the farmers before commencing the study of different kinds of livelihood sources of the villagers in each village. The farmers including men and women were asked directly and indirectly their sources of income from different activities in particular months of a year. Impact is measured based on the information collected from the sample households and their mutual observations on different indicators of particular capital assets. Accordingly, the indicators were

categorized under different capital assets such as financial, physical, natural, social and human capital. Following the above process seasonal calendar activities was prepared, which depicts per households person days of working on specific items in particular months.

RESULTS AND DISCUSSION

Livelihood Strategies of Gujjar

Most Gujjar households rely on a combination of activities to meet their needs and to disperse risks. A wide range of resources and livelihood strategies are employed by Gujjar households: migration, wage employment (regular and occasional, livestock rearing and forest activities). The significance of their traditional occupational pattern of livestock rearing is assessed below in the context of this wide array of livelihood strategies. The needs of Gujjars can be divided into physical needs- food, energy, water, shelter –and other livelihood needs-cash, reserves, coping strategies, intangible assets and community strength. The contribution of each economic activity, especially livestock related activities, to some of the needs is reviewed:

Traditional sources of Livelihood

i) Livestock rearing

The livelihood of Gujjar people is mainly influenced by their physical location and topography as well as by the immediate neighbouring communities' socioeconomic lifestyle. As a result, the livelihood of every community in Gujjar is based on pastoral subsistence farming that includes On farm livestock related activities and Off farm labour activities.

Number of livestock owned by Non migratory Gujjar before and after Sedentarization

No of Livestock	(n=100)	
	Before	After
0-5	39	22
5-10	48	52
10-15	16	18
15-18	0	8
Total	100	100

Livestock resources play an indispensable role in the lives of the Gujjar people as they form the main component of food security of the region. Majority of Gujjar household have little choice in terms of choosing their meals. Their meal is totally dependent on livestock products such as milk, milk by-products and meat for their daily subsistence needs. Households in Gujjar depend on their livestock not only as providers for their daily subsistence needs but also use livestock resource to make different products that assist them in their daily livelihoods. Gujjar people regard their livestock as a part of their family extensions and treat throughout their lifecycle as a family extension. It was observed that while taking out the milk every morning, the buffaloes are called out by their respective names and the buffalo immediately responds by coming to the destined place of milking. Gujjars emphasize that at the time of birth, the eldest female of the

households performs the naming ceremony by saying the name of the Buffalo in her ears based on her physical characteristics. Once the Buffalo turns old, Gujjars donot abandon them rather take care of them as any other old member of the family. Upon the death of a buffalo, they bury them with the rituals. Henceforth, this explains the vegetarian inclination of Gujjars and the community nowhere makes use of skin or hide of the Buffaloes. The normal reaction upon asking whether they eat the meat of their Buffaloes is, "How can one kill our mothers? Our Buffaloes give us life by feeding us with milk so how can we take away their lives." However, they use milk as a source to whip cream which is used as a source of nourishing the hair and skin of children. The most they make out of their milk is by converting it into butter for different uses. In general, they represent wealth and prestige within the communities and a sense of security and ability to care and provide for family.

Since the livestock play several important roles in the livelihood of Gujjar communities, the following is a summary table to show some of the socioeconomic roles of livestock

Box 1. Socioeconomic role of Livestock in the livelihood of Gujjar community

Livestock	Socioeconomic roles in Gujjar communities livelihood	
Cattle	<ul style="list-style-type: none"> • Represent wealth and prestige within the communities • Provide milk and milk products for daily subsistence needs. • Can be sold to get instant cash in order to purchase essential items such as sugar and clothes; also when a Gujjar want to restock the livestock of the family, may sell the male animals to buy more females of different breeds. • During drought years, Gujjars use their small ruminants as their last resource for survival and sell some of their animals to substitute for the financial loss. • Play a big role during marriage ceremonies as livestock is used as dowry to the bride's family as a corner stone for the new wed to build their family. • Used as a grievance settling mechanism within communities in case of settlement of elopement of married females. 	
Goats		
Bhotiya dogs		<ul style="list-style-type: none"> • Oxen of Gujjars are the main source of breeding used by the villagers as Gujjar breed of livestock is a high breed.
		In addition to the above socioeconomic roles, Bhotiya dogs have been kept as a watch dog.

Source: Based on field survey

Gujjar community value and appreciate the important contribution of livestock in their socioeconomic activities. Therefore in order to sustain their livelihood and secure their food production process for their subsistence needs, Gujjar prefer the diversification of household livestock as a traditional coping mechanism to minimize risks related to their livelihood. Gujjars believe that having animal composition with different grazing/ browsing makes it possible to maximize on scarce and limited range resources. Goats and sheep graze grass and leafage of bushes and shrubs while Buffaloes subsist on grass. However, Gujjars are not very open to the cross breeding technique for their Buffaloes as they believe that its only buffaloes of their native breed (*Neeli ravi*) who can adjust to their transhumant lifestyle.

Ranking of major problems identified by Gujjars for livelihood changes

Sl.no	Identified problems	Percentage	Ranking
1	Shortage of water and grazing land	54	1
2	Inadequate veterinary services	30	2
3	Lack of markets for livestock products	10	3
4	Poor social services	6	4

Source: Based on field survey

The table above enumerates that 54% of Gujjar respondent cited shortage of water and grazing land as biggest problem, 30% cited Poor social services and 10% cited Lack of markets for livestock products and 6% inadequate veterinary services as the major problem. Shortage of water and good pasture was identified as the most serious problem particularly Gujjar *khols* where there is a higher concentration of livestock. The shortage of land and water has significantly contributed to the recurrent clashes between crop cultivators and pastoralists. The second problem identified was inadequate veterinary services for their livestock. The pastoralists in these villages attributed this problem to the increased concentration of livestock in permanent villages. Lack of reliable market for livestock products was also identified as another problem. Many respondents feel they are in need of some extra cash to purchase consumer items. This has to be obtained by selling part of their stock or its products. However, it was observed that the market for livestock products (e.g. meat, and milk) is not very reliable. Closely related to this problem is the fact that livestock keeping is no longer reliable as means of earning a decent livelihood. These people want to diversify their livelihoods but they lack of capital to establish non-farm activities was reported as the biggest constraint.

Contemporary Livelihood pathways

In recent decades, the Gujjars have been in deep crisis, particularly with regard to the management of their pastures and livestock. In general, their centuries-old occupation is coming under threat of existence. Although the causes for the crisis are several, those related to loss of grazing lands and prolonged drought are most significant. Nearly half (54.0%) of the Gujjar in the study area identified the loss of grazing land as the main cause for their opting for sedentarization. The reduction of their grazing land has had an effect not only in terms of shortage of pastures but also has contributed to the loss of cattle on the migratory routes. It is no wonder that loss of livestock due to cattle diseases was identified as another reason for outmigration by 8.0 per cent of the respondents. Again this is another indication of the growing conflicts over resources, particularly pastures. Prolonged dry spells in pastureland prompted others (14 per cent) to seek for alternate employment strategies. Confronted with the loss of grazing land due to geographical factors and political marginalisation, together with effects of prolonged drought, some Gujjar have taken up labour works in addition to livestock keeping in different parts of Dehradun and Saharanpur district.

On average, about 32 per cent of the respondents argued that their incomes, and hence financial capital, had gone up since shifting their livelihood base. In addition, the sale of milk is on the increase compared to the situation in the former times.

On the other hand, Gujjar villages that are located away from the main road, have fewer and limited economic opportunities. A decline in herd size was noted by some 10 per cent of the respondents.

Respondents in the study area noted that a considerable portion of their livestock died from cattle diseases in the new areas. As shown in the table. 16 per cent of respondents said that their dependence on livestock has come down.

Reasons from moving from Traditional Livelihood (%)

(n=100)		
Sl.no	Responses	Non migratory Gujjar
1	Loss of grazing land	54(54)
2	Loss of livestock due to development on migratory routes	8(8)
3	Low migratory movements	14(14)
4	Dry season at home	24(24)
	Total	100(100)

Source: Based on field survey

Figures in parenthesis show percentages to their respective totals

Type of change in Livelihood

Sl.no	Type of change	Participant Gujjar
1	More income/money	32(32)
2	Less dependent on livestock	16(16)
3	Herd size has gone down	10(10)
4	More economic activities in local market	36(36)
5	Less income in onfarm activities	6(6)
	Total	100(100)

Source: Based on field survey

Figures in parenthesis show percentages to their respective totals.

Box 2. Livelihood Portfolios of Gujjar

Livelihood activities	In the past	At present
Labour work	Rare	Common
•In construction sites	Rare	Common
•In forests	Less common	Common
•In apple orchards	Rare	Less Common
•In field of farmers	Absent	
Cutting Bhabar grass	Common	Less Common but increasing
Afforestation activities	Rare	Common
Livestock activities	Common	Common but decreasing
•Milk sale	Common	Common but decreasing
•Milk product sale	Common	Common
•Livestock sale	Rare	Less Common
•Diversification in livestock composition for sale	Rare	Common
Participation in wage scheme	Rare	Common
Sewing quilts	Common	Common
Embroidery and stitching garments	Rare	Less Common
Craft manufacturing (rope, containers, handfans, mats etc)	Common	Common
Running a grocery shop	Rare	Less Common
Sowing seeds	Less common	Common
Weeding	Common	Common
Working in NGO	Rare	Less Common
Traditional poultry , goat rearing	Absent	Less Common
Traditional cattle rearing	Common	Common but decreasing
Vending foods at markets	Rare	Less Common
Cutting trees for timber and fuelwood	Common	Common but decreasing
Nurseries	Rare	Rare

Source: Based on field survey

The decline in herd size was contributed by two factors. Initially, as the Gujjars moved into the new livelihood they tended to sell some of their stock as they were not able to carry on with their traditional migration. Some sold part of their stock to get financial capital for their repayment of mounted debts which they normally otherwise paid back due to savings made from their migratory stay at alpiners. Another factor that may have contributed to the fall in herd size was diseases.

Therefore, labour works was observed to be on the increase as noted by some 36 per cent of the respondents. Limited areas for grazing have also forced some Gujjar migrants to adopt labour works as a means of earning a living and livelihood diversification. Livelihood diversification is defined as the process by which households constructs a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living.

Wage employment (Casual Labour)

Gujjar households in the foothills have an increased needs for cash. Gujjar families now use money to purchase necessities, including fodder because not much is grown, reared or collected at home; for paying for medicines, for buying clothes and buying items of daily use. With the increasing emphasis on sedentarization, Gujjar have begun to participate in the employment schemes like MGNREGA. As shown in Table, before participating in employment schemes, about 14 per cent of Participant Gujjar were in daily wages, 14 per cent were in forest works, 22 percent were in wage and livestock keeping and 50 percent were in livestock keeping and migration as a survival strategy but after wage employment, the same participant Gujjar group opted for 30 per cent of daily wages, 20 per cent as forests works and 50 per cent as Daily wages and Livestock keeping.

Occupation of Non migratory Gujjars Before and After Sedentarization

Category	Participants (n=100)	
	Before	After
Daily Wages	14	30
Forest works	14	20
Livestock keeping and migration	50	0
Wage+Livestock	22	50
Total	100	100

Source: Based on field survey

Field observations show that Gujjar *khols* are located near to the Dehradun township so a number of occasional job opportunities are available along this route. Gujjars by culture like freedom and are used to an unconstrained lifestyle. Most of the young to middle aged Gujjar males do not own a long term goal and stay home tending to the livestock until they need cash or the credit loan limits become exorbitant. Gujjar prefer casual construction labour works although these jobs are unstable and often physically demanding yet they serve a lot of needs of the community. First of all, the cash obtained from the income of these employment are paid by the day and secondly, it does not require new or advanced knowledge and skills. The biggest disadvantage is that they have to walk for miles together to the work construction site but at times, there is no availability of work so the work is unreliable and villagers have to search constantly for jobs. Having good networking therefore, is beneficial. Here from the data, we see that Livestock still forms the core of the livelihood of the Gujjars.

Livestock Diversification

Earlier Gujjars strictly followed Buffalo rearing but in the past few years, every household in Gujjars have begun to raise goats and sheeps as a livestock diversification strategy to cope with the fodder and water scarcity. Most of the Gujjars have resorted to lesser number of livestock rearing now as there is reduction in migration and the expenses meted out in the purchase of fodder is extraordinary. It has already been mentioned that the Gujjar raise a few cattle and horses or ponies, since bullocks and horses or ponies are used as pack

animals. Cow's milk is also considered useful for children, pregnant women and the sick. But the Gujjar also raise goats for milk as well as meat. This has a degenerating effect on the forest, as the plants and saplings browsed by the goats wither away. There is a feeling among forest officials and environmentalists that the Gujjar are doing this deliberately.

Access to Assets for Livelihood in Gujjar

The conceptual framework of Department for International Development provides attention to measured changes in the different factors, which contribute to livelihoods especially human, social, financial, physical and natural capital assets (Pasteur, 2001). The status of livelihoods in the community is summarized in terms of pentagon depicts the five capital assets; natural, human, social, physical and financial by calculating percentages of key indicators.

Human Assets

Education is an essential prerequisite for achieving sustainable human resources development. It plays an important role in improving productivity at individual and community levels, equipping people with skills and knowledge to enhance economic development and to promote entrepreneurship.

Findings: As elucidated by the data in the Table below, the education levels and reasons for the dropout of Gujjars from the formal education system, the dropout rate from the respondents family is shown below:

Participation of Gujjar children in education (n=100)

Level of education	Status			Total
	Poor	Medium	Rich	
Illiterate	12(12)	20(20)	10(10)	42(42)
Neoliterates	10(10)	32(32)	16(16)	58(58)
Total	22(22)	52(52)	36(36)	100(100)

Source: Based on field survey

Figures in parenthesis show percentages to their respective totals.

The cross tabulation between participation of Gujjar children in education and well-being status demonstrates that the relationship between two variables is weak ($G = .182$) as well as statistically insignificant ($\text{Sig} = .456$).

Observations: There are no mosques within Gujjar community but in the Alpines, there is a spot that is marked for *namaaz* (prayer congregation). Traditionally, Mosques and their committees called *Jamaats* (Group of learned priests) of the distant townships like Dehradun and Saharanpur are the dominant community based institutions. *Jamaats* used to have a powerful influence over the community. *Maulavi*, the religious leader of *Jamaat* is often approached to resolve minor conflicts within the Islamic principles outlined for decisions regarding social, marital and community life. Although the caste hierarchy seen among Hindus is denied in Islam, and is not apparent in Gujjars yet a subtle variations in gotra system were noticed during field surveys. It is also apparent in the ways *Jamaat* operates within the community. Although *Jamaat* used to be in the forefront regulating the social life of the community, but presently *Jamaats* seems to play a vital linking

role amongst the Gujjars and their outer world. The *Jamaats* have helped in enhancing the neoliterate levels amongst the Gujjar community. The strategy undertaken by *Jamaats* is normally to approach the Gujjars within the forests for teaching the children with the *Quranic* verses. It is a *Baithak* outside the *Dera* which is used by the *Jamaats* for the teaching purpose and also addressing the children with their ideology. This Islamic gathering serves the purpose of indirectly addressing the women in the *Deras*. There are *madrasa* attached to the mosques where children learn religious teachings as well as the Arabic language. In the modern world, however, formal education is imperative. Communities have adapted to this need, which is evident from the literacy data. This was due to a mass literacy campaign run by an NGO RLEK by the communities of which children were the main beneficiaries in Gujjars. Although the mass literacy campaign was not targeted to women, they better accessed this opportunity. During field visits, It was observed that large number of children going to the *madrasa*, for two hours in the morning, even if they have to drop out of regular school. At the focus group discussions, women expressed the view that religious education is a necessity and that they were willing to pay for it. Many of them expressed their personal disappointment for not having taken advantage of education earlier. Better education would have meant better jobs and better income. However, in those days, there was always an income from Buffalo rearing and therefore, they were not persistent in pursuing education. In those days, many said Buffalo rearing was a respected occupation and that they did not think beyond. Only as the resettlement plan for Gujjars set in, did they realize that education could be a strategy to find better opportunities. However, better educational opportunities required money and this they didn't have. Most women felt that women should also be educated and employed, not so much because this was a right or because it would give them added mobility and independence, but because life had become so difficult that one insecure income of the man was not able to keep the family going.

Natural Asset: Natural capital represents the natural resources such as land, water and wider biological resources that are utilized by people.

Water source

The source of water is generally the streams running (*raos*) next to their *Deras*. During the rainy season, most of the Gujjars try to obtain water from hand dug wells and ponds from the river beds. However, for most of the year during the dry season, the main source of clean water for the majority of Gujjar households who do not migrate to alpiners, is deep water holes dug near to their *Deras*. The water from these dug holes are used for cooking, hygiene, sanitation and purpose of drinking for humans and livestock.

Participation of Gujjar children in education (n=100)

Level of education	Status			Total
	Poor	Medium	Rich	
Illiterate	12(12)	20(20)	10(10)	42(42)
Neoliterates	10(10)	32(32)	16(16)	58(58)
Total	22(22)	52(52)	36(36)	100(100)

Gamma=.182, significant = .456

Source: Based on field survey

Figures in parenthesis show percentages to their respective totals.

Findings

The table enumerates that 34 per cent of Gujjar depend on Spring for their drinking water, 20 per cent depend on water from holes dug near by to their *Deras* for drinking purpose and 46 per cent depend on drinking water from the well of Neighbouring Taungya village. The cross tabulation between sources of source of drinking water and well-being status demonstrates that the relationship between two variables is strong ($G = .493$) as well as statistically significant ($Sig = .004$).

Observations

Water scarcity and low underground water table are the main and critical issues in the sustainability of Gujjar people's livelihoods and in their becoming self-reliant in food security. The result of the interviews and questionnaire indicate that most of Gujjar people agree that the issue of water problem in Gujjar region is one of the urgent and key issues in determining the survival and sustainability of their livelihoods as well as in becoming self-reliant and achieving food security. Mohd Zafar, the Pradhan of Pathrauli khol, a settled Gujjar village emphasizes that since Gujjars cannot live without water, shortage of water supply is prioritized as an 'urgent matter'. Some actions regarding this issue has already been taken in the settled villages Eg in the village of Pathrauli which is a settled Gujjar village, a well has been constructed under MGNREGA that has resolved this issue to a greater extent. This issue remains for the Gujjars residing in forest areas since these areas are not covered under any panchayat and are under the jurisdiction of forest department.

In many cases travelling five to fifteen kilometres in order to collect water became one of the main part of Gujjars livelihood. As a result, the water scarcity problem is seen as a community problem and they work in sync together to deal with the difficult tasks in getting water for survival. As part of an adaptation mechanism to the water scarcity and hot temperatures, in the Gujjar villages, it has become a part of the tradition and livelihood of the Gujjar youth to wake up very early around four thirty in the morning and travel long distances together in a group to collect water and return hole playing and singing just in time before the heat of the day begins.

It is a happy and pleasant scenario to watch the cheerful happy faces of the youth approaching the village singing with their cycles carrying special water containers, as well as the cheerful and happy faces of the people of the villages coming out from their straw huts to welcome them and assist them in unloading the water containers. As the water shortage became more and more acute, it has impacted the quality of water.

Most of the Gujjars complained that as water sources became more and more scarce, humans and animals increasingly use the same water sources which leads to more hygiene and health problems. As a result, Gujjars report more of diseases like Diarrhoea, Tuberculosis, recurring fever and digestive diseases.

Observations: As one approaches the Gujjar *Khols*, we notice few Gujjars standing in adjoining village beside the well with their buffaloes waiting for their turn to draw water. Cloudy, dirty water, barely fit for animals, is carefully poured into containers to be carried home. It is a pitiful sight.

Social assets

Social Participation: The concept of social capital is closely related to local institutions and collective effort.

Level of social participation among the Gujjar (n=100)

Level of social participation	Status			Total
	Poor	Medium	Rich	
No participation	20(20)	14(14)	0	34(34)
Informal participation	2(2)	36(36)	20(20)	58(58)
Formal participation	0	2(2)	6(6)	4(4)
Total	22(22)	52(52)	26(26)	100(100)
Gamma= .930, significant = .000				

Source: Based on field survey

Figures in parenthesis show percentages to their respective totals.

Barter exchange between Van Gujjars and villagers in Alpines, the source has to be quoted as Rubina, 2011

Gujjars gives	Value (market value)	Gujjars takes	Value (market value)
1litre milk	Rs.22	4 Kg potatoes	Rs.32 (8per kg)
1 night field grazing	Rs.2000	1 goat	Rs.3000
1kg butter	Rs.200	25kg potatoes	Rs.200 (8per kg)
1 <i>Khais</i> (Woolen sheet)	Rs.450	1 <i>Goondh</i> (horse cover)	Rs.400
Total	Rs.2692		Rs.3632

Source: Based on field survey

Findings: The table enumerates that 34 per cent of Gujjar donot participate in any formal or informal organisation, 58 per cent are involved in informal participation while 4 per cent are members of formal organisations. The cross tabulation between level of social participation and well-being status demonstrates that the relationship between two variables is strong ($G = .930$) as well as statistically significant ($Sig = .000$). Observations: The allocation of resources (territory) is based on a twofold system in which both the State and the Gujjar political organisation are involved. It has already been stated that the Gujjar do not own any land anywhere and their habitation in the forests of the Siwaliks is on the basis of permits. The Forest Department of the government which has the responsibility of forest management, first allots a particular range or coup to a *tol* of Gujjar *deras*. After that the *tol panchayat* consisting of the leader (*bada numberdar*) and the *numberdars* (heads of individual *deras*) appoint the territory among the individual *deras*. The rights of a *dera* to its space are strictly protected and any encroachment by other *deras* is punishable by the *tol panchayat*. The participants state that during hard times, the entire communities do not consider their clan powerful or influential; they try to work with them to help those who are really suffering. clan influence is seen as being of lower importance in this study. They do however, mention that they have clan conflicts because of political affiliations and the use of common property resources.

Financial Asset

Credit

Financial capital seems to be the the least available of assets for the Gujjars owing to their physical inaccessibility to market

in the foothills and the limited access to the wage opportunities. In the Alpines, alternative wage opportunities do serve as a income substitute to the Dairy products, however, the evergrowing demand of Gujjar Ghee and Butter in the neighbouring local villages and markets leads to an enhanced saving account which hitherto is used in the foothills during the dry spells.

Credit availability: Since these Forest Dwellers sustain on minimum level of subsistence, there are no formal financial institutions accessible for Gujjars use and mostly they depend on the local *Baniyas* for meeting their loan necessities. These private moneylenders charge a huge interest rate along with the payments in kind (in the form of milk and milk products). The cross tabulation between sources of credit and well-being status demonstrates that the relationship between two variables is strong ($G = 1.000$) as well as statistically significant ($Sig = .000$).

Observations

Barter system

Upto 1990s, Gujjar community still could meet their physical needs by rearing livestock and migrating to the alpine regions is a survival strategies against the fodder and water scarcity issue in the foothills. Barter and reciprocal exchange with neighbour was an alternative means of acquiring needed goods. However, the exchange was not always as explicit as trading "a litre of milk for a bag of potatoes". (Interviews 2014). Often goods were 'given' as part of a network of reciprocal obligations in which those with a current surplus shared with those in need, in recognition that the recognition would work the other way around at other times. In order to sustain the aversive behavior of the forest villagers, Gujjars adapt to economic exchanges through barter exchange enriching them of the organic milk products. The *Van Gujjars* are no longer welcomed in the vicinity of villages although economic transactions are still carried through. The economic transactions are still based on the Barter system of villagers

and *Van Gujjars* entering into economic transaction. The Table below shows the barter system prevalent in the alpiners between *Van Gujjars* and the villagers in approximate values based on observations: The findings clearly show that the *Van Gujjars* loose out in economic terms from the barter system but since they live in such inaccessible areas that easy access to availability of things of utility plays an important role in their pursuance of barter system.

Physical Asset

The provision of cooking fuel is considered to be an important element in sustaining livelihood. In this study area, four types of cooking fuel are used: 1) wood including tree branches and dry leaves, 2) dried grass, 3) dried twigs, and 4) kerosene oil. Majority of the household (66%) go for fuelwood and 34 % go for kerosene oil as source of cooking fuel.

Percentage distribution of households according to source of cooking fuel and well-being status (n=100)

Sources of Cooking Fuel	Status			Total
	Poor	Medium	Rich	
Fuelwood	10(10)	34 (34)	22(22)	66 (66)
Kerosene	12 (12)	18 (18)	4(4)	34(34)
Total	22 (22)	52 (52)	26	100

Gamma= .500, significant = .031

The cross tabulation between sources of cooking fuel and well-being status demonstrates that the relationship between two variables is strong (G = .500) as well as statistically significant (Sig= .031).

Livelihood Pentagons depicting Accessibility to Asset base in Gujjar community

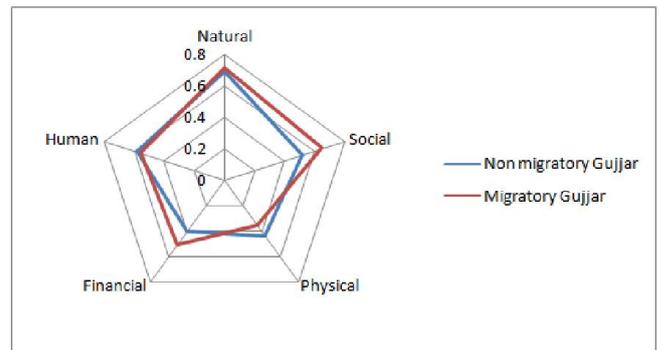
The status of livelihoods in each village summarized in terms of pentagon depicts the five assets; Natural, Human, Social, Physical and Financial by calculating percentages of key indicators:

Index indicating Accessibility of Gujjar Livelihood Asset Base

Asset Indices	Non migratory Gujjar	Migratory Gujjar
Natural	.69	.71
Social	.52	.65
Physical	.44	.36
Financial	.40	.51
Human	.58	.56
Overall	.53	.56
Gain in Index value	.03	

The Index shows that non migratory Gujjar have maximum access to natural asset but a medium access to Human, Social and Physical assets while the lowest access of non migratory Gujjar is to Financial asset. Migratory Gujjar have highest access to Natural asset with medium access to Social, Human and financial asset while the lowest access of Migratory is to Physical asset. Livelihood Pentagons depicting Accessibility to Asset base in Gujjar community. From the Pentagon plot analysis, it is found that there are non migratory Gujjar households inside the pentagon plot. They lie in the innermost

pentagon. They are the poorest of the poor and are considered 'marginalized households'. Non migratory Gujjar are the most vulnerable as they live in the forest with least accessibility to any asset base except for natural asset (forest).



Lessons to take forward

Livestock rearing is the sole livelihood sustaining activity for Gujjars therefore, mobile veterinary care facilities to the *Deras* of Gujjars by the veterinary doctors need to be provided every month. The formal education among the Gujjar was almost nil therefore, Government and Nongovernmental organisations and even the *Panchayats* need to take proactive step to impart pre-primary and primary education through non formal education. Mobile school and distance education in Primary Education Model may be experimented in case of these migrating groups particularly among the Gujjar women. State Governments Adult literacy Scheme i.e. Community Learning and Vocational Training can be enforced under which additional literacy centres can be started at MGNREGA worksite. Eg in the 3 backward taluks of Dharwad, the State Government's Adult Literacy Scheme i.e. Community Learning and Vocational Training was in force under which 121 additional literacy centres were started at Mahatma Gandhi NREGA worksite.

Provision of infrastructure and support for improved agricultural practices as well as other natural resource based activities like apiculture would ensure better income to these poor households. Technical training should be provided to improve knowledge and skills in cultivating crops, livestock rearing and fish culture so that greater benefits accrue from proper utilization of land. As not a single women from Gujjar community was found participating in formal workforce, particularly in MGNREGA activities, due to cultural and religious constraints therefore, alternative worksites and if possible self employment in special cases may be leveraged for this kind of women belonging to ethnic communities. The need analysis is required to be done and employment provision be accordingly made for these women. The accesses to institutional credit need to be enhanced as most of the Gujjar are managing the income and expenditure of household through informal system of credit and barter exchange. Therefore, working a mobile post office or rural bank extension counter may be constructed for provision of savings account and loan facility to Gujjar community.

The State Government should make Gujjars settle in colonies without linking the settlement scheme in any way with their

summer migration. The State Government should not emphasize on sedentarization but make the settlement plan so lucrative that Gujjars willingly stop migrating to the hills in the due course of time. The Gujjars should have a recognition of their cattle grazing rights in the forest along with strong implementation of a fodder development scheme. The squalid conditions prevalent in the two settled colonies of Gujjars namely Pathri and Gaidikhatta should pose as a model and an improved versions of these colonies should be planned by the Government (Rubina N, 2015). Inclusion of such communities as Gujjars in the list of Scheduled tribes at par with other forest dwelling communities so that they are able to avail the associated benefits and are able to draw benefits from the concept of inclusive development.

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