



Understanding perception of relocated community towards protected area: A case study of Van Gujjars of Rajaji National Park, Uttarakhand, India

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Abstract

Van Gujjars of Rajaji National Park, a transhumant community, was relocated from the National Park. This study was undertaken with the purpose of understanding the changes in their lifestyle, their perception towards the significance and achievements of National Park. This was also an attempt to find out their views on rehabilitation and effectiveness of conservation efforts of forest department. This study showed that the availability of basic amenities like water and income is a cause factor shaping up their perception. This study also reinforced the view that conflicts around the formation of protected areas need an inclusive approach during decision making process, involving all the stakeholders. This will help in minimizing the negative impact on the relocated community and fostering stronger ties with the management.

Keywords: Relocation, Protected Area, Transhumant Pastoralism, Perception, Conservation, Rajaji National Park.

1. Introduction

In tropical countries protected areas have been found to be an effective measure against increasing human demand and resultant negative impacts (Child, 2004) and play a crucial role in preventing substantial anthropogenic threats through mitigating logging, hunting, fire and grazing and have been effective at protecting the ecosystems and species within their borders making a significant contribution to long term biodiversity conservation (Burner et al., 2001). At the same time, cessation of rights to extract forest produce and livelihood activities of the people living in and adjacent to these areas that is prerequisite of any national park formation, leads to conflict and ensues negative feeling towards the park among the local populace. National Park formation has a significant effect on the lifestyle of indigenous people living near the forest as it leads to their relocation, obsolescence of cultural values, social disintegration, unsustainable harvesting and severe conflict over resource use (Liu et al, 2010; Nepal and Weber, 1995). Protected area formation also affects the people as it impacts their customary rights, belief and value system and livelihood support system (Meena et al, 2014; Nepal, 2002). Unfortunately before designing these protected areas no detailed study is conducted to understand how these communities are interacting with the natural resources and what could be the impact and risk factor involved, in future, after shifting these stakeholders. Earlier studies showed that

this type of approach have impacted communities that value and rely on wild resources within protected areas for their contribution to livelihoods in terms of fuelwood, fodder, dietary supplements and income (Xu et al, 2006; Singh and Rawat, 1999; Baviskar, 1999; Badola, 1998; Sharma, 1998). These adverse livelihood impacts have in turn raised major and unforeseen threats to conservation, in the form of park-people conflicts (De Leon and Kim 2017; De Pourcq et al, 2017; Lamichhane et al, 2017; Holmes 2014; Vedeld et al, 2012; Maikhuri et al, 2000; Sekhar, 1998), the loss of local incentive to conserve resources and support conservation initiatives, and the loss of traditional ecological knowledge (TEK) practices and institutions aimed at conservation. In India, like many other developing countries, forests are not pristine areas but a large human population lives in and around and have been dependent heavily on them since time immemorial.

Peripheral areas of Rajaji National Park (RNP), where this study was conducted represents the entire range of conflicts, which occur in a protected area in a developing country. Creation of the park has denied or restricted access to the area's resources and has created legal and administrative problems for people who have been using forest resources of the park for their sustenance including the migratory grazers *Van Gujjars* who live in the area. *Van Gujjars* of RNP is a transhumant pastoralist community, who were living inside the park for more than a century and were totally dependent on the Park for their survival. The *Van Gujjars* used to follow a seasonal migration in the Himalayan region. During winters, they would stay in the lower areas, including the RNP, while during the summers, they would move to the alpine pastures. This was a sustainable lifestyle and gave the forest an opportunity to recuperate and regenerate (Negi, 1998). This traditional practice of the *Van Gujjars* has now stopped due to anthropogenic pressures and various problems associated with pastoralism. Pastoralists have been affected world over by the land use changes and cash based economy leading to their rapid assimilation in sedentary population and upsetting the earlier followed lifestyle that was based on effective use of seasonally abundant resources without degradation (Negi, 1998)

A study conducted in 1984, found that out of 16 national parks and 88 sanctuaries which had human population inside them, 5 (31%) of the parks and 4 (5%) of the sanctuaries had proposed to relocate a part or whole of their population prior to 1984 and actual relocation till 1984 had been done in 4 (25%), of the national parks and 3 (3%) of the sanctuaries (Singh, 1999). In most cases, people living within protected areas are in violation of the law and pose a threat to the integrity of the protected area. However, relocating them is not an easy task, especially as most of them have strong socio-cultural roots in the area and are usually unwilling to move voluntarily. However, in the process of ensuring that the relocated community gets a fair economic deal, occasionally their economic status becomes better than that of the host community (Singh, 1999).

Used to a nomadic way of life, shifting and settling at the new rehabilitation site for the *Van Gujjars* also has not been a smooth process and was ensued due to continuous efforts of various agencies. In the given scenario, it was considered imperative to undertake a study to look in the socioeconomic and psychological after-effects of relocation on the *Van Gujjars*. This study examined the impact of conservation policies on the indigenous community like *Van Gujjars* and their perception towards national park formation that led to their relocation. Many studies show that attachment to place is a characteristic feature of any community and the development of a sense of spatial identity is a critical component of attachment experiences in local areas where they have been living (Schmidt-Soltau and Brockington 2007; Bonaiuto et al. 2002; Sangkapitux et al. 1999; Fried, 2000). As a consequence of such spatial identity, built on the convergence of physical places and social relationships, displacement from the community entails at times widespread negative attitudes toward natural protected areas (Bonaiuto et al. 2002). For the effective conservation of protected area, it is necessary to understand the socioeconomic condition of the resource users and to investigate user's attitude towards vulnerable resources and the policy and management decisions involved in the design and implementation evaluation of conservation of PA (Pratt et al., 2004; Soto, 2000; Infield, 1998 and Badola, 1998).

2. Methods

2.1. Study Area

The study area, RNP is situated along the hills and foothills of Shiwalik ranges of Himalayas between 29°52'41'' and 30° 15'56'' north latitudes, 77°57'7'' and 78°23'3'' east longitudes in North-western India. The National Park encompasses a geographical area of 820.42 km² at the foothills of the Himalayas and was formed by amalgamation of three sanctuaries – Rajaji, Motichur and Chilla in the year 1983. RNP is nestled in the Shiwalik ranges and the beginning of the vast Indo-Gangetic plains, thus representing vegetation of several distinct zones and forest types like sal forests, riverine forests, broad-leaved mixed forests, scrubland and grassland. The RNP represents high biodiversity values, particularly the wildlife. The Park has two main conservation values, it includes a large area of the fragile Shiwalik system, the fauna and flora of this region have affinities to the Himalayan and Gangetic plain biogeographic zones (2 and 7 respectively) (Rodgers et al., 2000). And also, it is home to the northwestern population of Asian elephant (*Elephas maximus*) and the Tiger (*Panthera tigris*) both highly endangered species (Johnsingh and Negi, 2003). This population is connected to the population at Corbett National Park by a narrow corridor, which is under considerable developmental pressure.

After notification of RNP, search for rehabilitation sites to relocate the *Van Gujjar* families settled inside the park boundary resulted in a plan for rehabilitation of *Van Gujjar* families. In the late 80s the state government prepared a rehabilitation package for the *Van Gujjars* and in 1987, 512 houses each with cattle shed and fodder store were prepared in nearby area by clearing an 80 ha of degraded forest tract. Families were given houses with cattle sheds at Pathri and basic amenities like roads and a school were constructed. But as there was not adequate space to relocate all the *Van Gujjar* families a new site was created at Gaidikhata near Haridwar (Uttarakhand) to deal with the space crunch. With the establishment of this new site, 336 *Van Gujjar* families shifted out voluntarily to Gaidikhata. At Gaidikhata rehabilitation site each family has been given 2 acres of land for agriculture and cattle rearing and 200 m² of land for the construction of their huts. Important amenities like drinking water, irrigation facilities, human and veterinary hospitals, community building and schools were provided by the Forest Department. By 2017, 637 families have been relocated successfully till date, 512 in Pathari area and 1998 in Gaidikhata, however many families have settled in peripheral areas of RNP.

2.2. Data collection and field techniques

It was found that the *Van Gujjar* households were spread over a large area and the author had to depend on the ground situation in the field, in terms of availability of the respondents and their willingness to respond. For survey of *Van Gujjar* households, 169 families were chosen as sample.

Both qualitative and quantitative methods were used for data collection. Different techniques used for data collection included focus group discussion (FGD) and natural resource mapping. Household survey through structured and unstructured questionnaire survey was conducted in selected households. Questionnaire and FGD methods were used to obtain information on the demographic structure of the households and the perception of the inhabitants of the proposed RNP. The questionnaire survey solicited information from respondents on their socio-economic status, their cultural and religious beliefs concerning the environment, and their awareness and perception of the proposed National Park. Open- and closed-ended questionnaires were designed to elicit response. Moreover, to allow easy interpretation and analysis, fixed response questions pertaining especially to 'problems' and 'protected area-people conflicts' were also included. The questionnaire was designed and pre-tested in the field during reconnaissance. To assess people's dependence on the forest,

information was collected from each household on the resources extracted from the forest every year. Data were collected on quantity of fuel wood, timber and types of NTFP collected, consumed, and sold each year and its contribution to the family's annual income.

Two types of mapping exercises were carried out for exploring people's perception about spatial dimension of the physical aspects and natural resources (Kumar, 2002). Social mapping was done to depict the habitation pattern of the region, while the resource map focused on natural resources. Mapping exercise was done with the help of family members of the household surveyed. Resource map helped in generating information about topography, forest, vegetation type, land-use, tenure and ownership, water bodies, *etc.* Resource maps were used to generate discussions among the participants about natural resources, their entitlements and utilization and problems related to formation of RNP. It helped in identification and prioritization of problems related to natural resource use and issues of conflict.

2.3. Data Analysis

Data analysis was performed with statistical packages like SPSS. Frequency data were obtained for each response. Both socio-economic and protected area-people conflict data were analyzed using descriptive statistics and cross tabulation and Chi-square test. Chi-square test was done to find out how various variables *viz.* age group, sex etc influence the decision and opinion of *Van Gujjars* and to know whether annual family income influences the decision making system of a community. A *P*-value of 0.05 was defined as significance level for all the tests. It also helped in estimating dependency on various forest sources as well as seasonal variations in resource use pattern. This enabled in understanding overall scenario and level of biotic pressure and issues of conflict.

3. Result

As first step, from the data collected an overview of the lifestyle, family structure, income sources and dependence on park area was obtained.

3.1. Demographic profile of the sampled household

The demographic feature of the families sampled showed that the average family size was over eight individuals (8.63) per household (Table 1). Duration of the settlement of the families in the park was found to be 123.45 ± 39.52 years. The *Van Gujjars* live and move in joint family groups and main consideration for settling down in any area has always been availability of fuel and fodder.

Out of 169 respondents interviewed about 50% (Table 2) of the respondents belonged to the age group of 20 to 40 years. Only 10.06 % of the population was 60 years and older and only 4.73 % of the respondents were less than 20 years. The second and third age classes which are important constituent of the working population formed the major portion of the people interviewed, the respondents belonging to the age group of 40 to 60 years formed 34.32 % of the sample population.

Van Gujjars depend largely on the forest produce and the milk or milk products of the hybrid buffalo breeds and livestock was kept both for sustenance and economic purposes. The mean cattle holding (sum of cow, bull and buffalo population) per household was quite high at 13.41 ± 7.26 (Table 1). The *Van Gujjars* herd a small, tough and hybrid variety of the buffalo – a mix of the *nili* and the *ravi* that comprised 81 % of the total livestock population (Fig 2).

The major source of sustenance and income was the sale of milk and milk products, sold in the nearby towns directly or through middlemen. The average household income per annum was estimated to be Rs $12\,068.34 \pm 16\,682.97$ (Table 1) and sale of milk contributed 90.5 % (Fig 1) of the household income. Workload is distributed among both sexes. Men are engaged in grazing animals and marketing of milk and milk products, whereas, women milk cattle and make milk products.

3.2. Assessment of the changes in the lifestyle and attitude after formation of RNP

During survey, questions were asked to find out the changes in the lifestyle of the *Van Gujjars* and the reasons that led to those changes. These questions also provided an insight in the attitude of the *Van Gujjars* towards the RNP, Park management and the problems faced by them after the formation of National Park. Majority of respondents (64.1%) felt that they have received no benefit with the formation of RNP and surprisingly no respondents felt that formation of RNP had been beneficial for them, while quite a large number (34.2%) of people refused to answer this question (Table 3, iii). Out of 169 respondents 84% of people showed willingness to cooperate with forest department in management of RNP, whereas few people were not ready to cooperate (36.6%), as they thought, they would not gain anything from it (Table 3, ii).

To find out their view on the effectiveness of RNP in the conservation of natural resources, respondents were asked to express their assessment about the status of RNP in term of flora and fauna after formation of RNP. Majority of *Van Gujjars* (46.2%) felt that there has been no improvement in the status of forest after the notification of Park, while 19.6% feel that there has been improvement and a large number of people refused (34.2%) to talk about this issue (Table 3, i). They gave different reasons for believing change in management status has been ineffective, few (31.5%) felt that forest cover has reduced, few (21.6%) felt that the poaching cases have increased, while almost equal number of respondents (29.6%) felt that the higher protection status has had no effect at all and they believed there was no change (Table 3, v).

Van Gujjars were in favour of joint management of RNP. This is clear from the willingness of high number (84%) of people to cooperate with forest department towards the conservation of flora and fauna (Table 3, ii). They gave different reasons for their interest in joint management of RNP. About 46.7% people felt that they were better equipped to co-manage the forest, as they knew the forest best and 36.1% people felt that they should cooperate in management of forest as the forest belongs to them. Only 11.8% people expected some economic incentive in return (Table 3, vi).

A very high number (76.3%) of people said that they were forced to leave RNP, as the forest department will not let them stay in the forest and they had no other option. While 18.9% people willingly moved out because they felt that they hoped for better economic opportunity, only very small number (0.6%) cited the fuel wood and fodder shortage or fear of wildlife as the reason (1.8%) (Table 3, vii). When respondents were asked about their opinion about the relocation site, 46.2% were not satisfied as they felt their livestock will not be able to survive there as their cattle are used to live in open areas. Some respondents felt that the material used in construction at relocation site was not good. Equal number (15.4%) people felt that there was not enough space and said sanitation was a problem. They said that the water gets logged during the rains and causes number of diseases (Table 3, viii).

We wanted to know if any outside influence is responsible in shaping up their opinions, therefore they were asked about any NGOs active in their area and it was found that only half of the *Van Gujjar* population (52.1%) surveyed was aware of any NGOs working in their area (Table 3, iv) and staggeringly high number (84%) of people aware of the NGOs thought they were ineffective whereas only 10.1% people felt they were effective (Table 3, ix).

3.3. Factors affecting perception of *Van Gujjars*

Annual family income was classified into five categories, viz. very low, low, medium, moderately high and high. Majority of the families surveyed belonged to the very low and low-income group (Table 4). Almost equal in proportion they represent 67% of the total population. Hence, their view is very important while discussing any management strategy from economic point of view.

3.4. Willingness to get relocated

Van Gujjars were very vocal on the issue of relocation, although they were hesitant to talk about other issues and to impart any other information. This was because it was the major issue faced by them and everyone was very forthcoming with their opinions. Cent percent of the respondent below 20 years of age were happy to be out of the Park. Younger generation was found to be lured by the modern facilities and wanted to join the main stream of lifestyle, for this they were glad to give up their nomadic way of living. The youths were more enthusiastic about their relocation out of RNP because of the prospects of additional year-round job opportunities in towns adjoining the relocation site. A very little number of people hesitated to reply in this matter. No difference is seen in opinion among the respondents belonging to the different gender so it can be safely assumed that there is a general consensus among them on this issue. Medium and the high-income group showed highest interest scoring 84% and 92% individuals are satisfied by relocation. Anyway, the over all view as expressed earlier, did not vary significantly.

3.5. Cooperation with forest department

It was found that the people from different age category did not differ significantly in their attitude towards FD. People belonging to all the age groups had unanimous opinion on this matter and were willing to cooperate with forest department to jointly manage RNP. Overall 83% of the total respondents were in the favour of joint management of the forest with FD. Though there was no difference in the opinion of the respondents belonging to the different age group but between both the genders it differed significantly. Where as, 85% of the male population was ready to cooperate with the forest department, only 65% female population were willing to cooperate. It was seen that different income level does not affect the attitude of people towards FD in the matter of Joint management of RNP significantly. But, it is very interesting to see the variation in responses, which changes with the income level. Low-income group people showed the highest willingness to cooperate with the forest department and as the income increased the willingness to cooperate decreased (Fig 3).

3.6. Status of forest

As *Van Gujjars* were living in the forest for quite a long period before relocation, it was interesting to find out their perceptions about the change in the status of the forest after the formation of RNP. A large proportion of people refused to reply in this matter. Interestingly different age category of people showed significant difference in terms of their view. Overall, 46% of people had an opinion that there was no improvement in the Park's forest resources. This significant change can be justified as they were probably comparing the status in different time scale. Reply did not vary among different gender also when asked about the change in the status of forest. All the people expressed unanimous view across all the age groups and gender class stating that there has been no improvement in the forest cover in RNP. There was no significant variation among respondents belonging to different income groups also and majority responded negatively when asked about any improvement in status of forest after the formation of RNP. Total 58% of the respondents belonging to the first category, *i.e.*, those living next to stream felt that there were positive changes in the status of forest in the park; majority of people belonging to the other category feels that status of the park did not improve after declaration of National Park.

3.7. Awareness of NGOs

Almost 72% people above 60 years of age group were aware about the NGOs working in the area. While only half of the respondents belonging to the age group of 20-40 years who form the working group, knew about the NGO's activity. NGOs activity is biased towards higher income group people. Though at $p=0.05$ level, the difference is not significant but the graph (Fig 4) shows increase in

awareness about NGOs with the increase in income, except among the people belonging to the high income group, which form only 8% of the total population.

4. Discussion

To understand the resource dynamics it is important to study the interactions between social and economic processes and the environment. As forest resource use by people is the function of their socio-economic status (Anderies et al., 2004, Becker, 2003; Maikhuri et al., 2000), the number of cattle determines, the fodder needs and agricultural system and the amount of fodder produced on agricultural land determine the non-forest component of fodder supply. The occupational pattern influences the number of people actually dependent on the natural resources and access to external sources of income. These in turn influence agricultural and animal husbandry patterns and thereby forest use. Population variables are taken into consideration as they influence attainment of specific developmental objectives. The population variables considered in planning relate not only to size but also its distribution by residence, age, socio-economic groups, income/expenditure and poverty levels.

4.1. Demographic profile of the sampled household

The study of socio-demographic characteristics revealed a degree of resource use by *Van Gujjars* despite the protected status of RNP, as they are living in peripheral areas of RNP; important steps need to be taken immediately to reduce the biotic pressure on these forests. Appropriate legal models for benefit sharing and usufruct rights should be worked out with the communities. For striking a balance between the requisition for the resource management and stakeholder demand it is important to take into account the socio-cultural acceptability and viability for successful designing and effective implementation of alternatives to forest resources as the resource users may have better knowledge concerning resource dynamics, even, if the public infrastructure providers may have better knowledge of larger-scale processes (Anderies et al., 2004).

The average cattle holding for the *Van Gujjars* were found to be quite high, and despite majority of the cattle being local breeds, they are quite well nourished. This is because of the availability of good grazing pastures and surplus fodder in the Park. *Van Gujjars* are heavily dependent on the forests of RNP for their livelihood and livestock rearing is the major income source. Most of the families use fuel wood extracted from the Park forest for cooking purposes and this dependence is very high in comparison to other villages of the area and this dependence is influenced by several reasons including traditional use, free availability and absence of any alternative (Badola, 1998).

4.2. Assessment of the changes in the lifestyle and attitude after formation of RNP

Van Gujjars living inside the park have important and long-standing relationships with the area and have been traditionally dependent on the resources for their livelihood and cultural survival. These relationships embrace cultural identity, spirituality and subsistence practices, which frequently contribute to the maintenance of biological diversity and have been affected by the park formation. Their opinion is driven by the various factors including lack of economic benefits (Sekhar, 2003), or, they feel their relationships have been ignored and even destroyed by resource conservation and management initiatives (Trakolis, 2001). *Van Gujjars* did not perceive much benefit from the park which is a cause of concern as protected areas cannot achieve significant social and economic objectives, until placed in a proper context (Trakolis, 2001). Most of the respondents were in favour of joint management of the park and ready to play an active role in the management.

Almost all the sampled population was dependent on forest resources; this could be due to relatively high number of livestock holding per family and also due to their traditional rights. Traditionally, they migrated to the higher Himalayan pastures during the monsoons, which in turn allowed the vegetation in the park to regenerate and on their return in October, there was more than adequate fodder reserve

to last until their migration in May again. The *Van Gujjars* and their buffalo population have grown many-fold in the last few decades causing additional pressure on the forest resources. The majority of population remains in the forest round the year. Their annual migration cycle has come in for disruption from the villages' enroute to the higher mountain pastures, since the *Van Gujjar* cattle compete with the domestic sheep for food. As a result only a small proportion of the *Van Gujjars* and their cattle migrate. This cessation of migration is highly influenced by the income level and the distribution of opinion on migration is skewed, hence it needs in-depth understanding of difficulties and their status of settlement in the park along with their traditional practices.

Van Gujjars expressed positive attitude towards relocation, which were governed by their changing lifestyle and assimilation into sedentary population. Also, the *Van Gujjars* are today, more aware of the profits they can make from selling milk in towns and other employment opportunities, thus, they are also influenced by the cash based economy. Relocation of human population is a prerequisite for final notification of National Park, for carrying out relocation successfully, it is important not only to take care of economic side of the package but also take care of social and psychological impact that plays a significant role in shaping up the attitude and decision of people (Bonaiuto et al., 2002 Fried, 2000 and Bonaiuto et al., 1999).

4.3. Factors affecting Perception of Van Gujjars on relocation related attributes

Findings from the present study show that *Van Gujjars* are neither entirely antagonistic to conservation nor ignorant of conservation issues. This is very important finding, as successful management of protected areas, nature conservation needs to be seen as constructive and supportive for local interests, yet clear in its mandate and intent (Stoll-Kleemann, 2001, Trakolis, 2001). *Van Gujjars* differed greatly in their views on important issues of acceptance of relocation and cooperation with FD. It was found that the attitude and awareness were influenced by respondent's income level and other demographic variables as proved by the other studies (Infield, 1998; Badola, 1998; Soto, 2000; Bonaiuto et al., 2002 and Pratt et al., 2004). There was difference in the opinions among the sexes as women were not forthcoming with their opinion. This difference in opinion can be owing to the fact that *Van Gujjar* women rarely participate in activities outside their household and leave all the decision making to the men folk.

People had more or less unanimous views across on few issues and did not differ among various age, sex or income classes. They felt that there has been no improvement in the condition of forest after national park formation. Change in the lifestyle of *Van Gujjars*, is also observed in all the age and income classes that is apparent from other studies also done elsewhere (Nauntyal et al, 2003; Abule et al., 2005) and they are rapidly assimilating into sedentary population. The approach of NGOs was very much restricted to some areas, which were easily accessible and are not active at all in the some other parts; as a result there was significant difference among awareness of *Van Gujjars* living at the different distance from water source about NGOs.

5. Conclusion

Accomplishing protected area management and natural resource conservation through exclusion of people is a dynamic and dual challenge. Specific result from this study shows the relevance of economic or political dimensions for individual environmental attitudes. Results may also have some practical implications for policymaking in the field of environmental conservation. They point out the importance of considering the specific and differential impact on local communities when instituting protected natural areas, as more on the displacements of indigenous peoples from these areas. Conflicts around the institution of protected areas can probably be partially avoided by the use of participatory and inclusive management approaches or by communication strategies from public decision makers. Specific research is needed to identify and test the most suitable tools for addressing large-scale common dilemmas faced by the people in the course of their displacement and promoting co-operation between the different groups involved in the process. This could contribute to foster more rational and ecologically sounded, or "sustainable", uses of natural resources among communities. Such a goal should encompass negotiations and shared responsibilities for conflict

resolution and environmental management among different groups and interests, at local, national and global levels.

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Table 1
Demographic profile of the *Van Gujjar* population of Rajaji National Park

Demographic parameter	Mean \pm SD (n=169)
Average household size (no.)	8.63 \pm 10.14
Duration of stay in RNP (years)	123.45 \pm 39.52
Respondent's age (years)	41.11 \pm 14.25
Distance from <i>Rau</i> (rivulet)(km)	1.30 \pm 1.27
Mean cattle population (no.)	13.41 \pm 7.26
Income per annum (rs.)	12068.34 \pm 16682.97

Table 2
Distribution of *Van Gujjar* population in different age classes

Age class(years)	% of population (n=169)
< 20	4.73 (n=8)
20-40	50.89 (n=86)
41-60	34.32 (n=58)
>60	10.06 (n=17)

Table 3
Views of *van Van Gujjar* on the major issues after creation of Rajaji National Park

Views	Percent
(i) View on state of forest after formation of Park	
No response	34.3
Better	19.5
Worse	46.2
(ii) Willingness to cooperate with forest department in management of RNP	
No response	3
Ready to cooperate	83.4
Not ready to cooperate	13.6
(iii) If, they have been benefited due to formation of Park	
No response	35.5
No	64.5
(iv) If, they are aware of any NGO working in their area	
Yes	52.1
No	47.9
(v) Changes observed in forest after the formation of RNP	
Forest cover decreased	30.8
Poaching increased	23.1
No change	29.5
No response	16.7
(vi) Reasons for cooperating with forest department to manage RNP	
Forest belongs to them	36.2
They will get economic incentives	12.1
They think that they had better knowledge about forest	46.1

No response	5.7
(vii) Reasons to accept relocation offer	
Better education facility	2.4
Better economic opportunity	18.9
No other option	76.3
Fuel wood and fodder availability decreased	0.6
Fear of wildlife	1.8
(viii) Opinion about the rehabilitation site	
Not good for livestock	46.2
Sanitation condition is bad	15.4
Material used is not good enough	23.1
There is not enough space	15.4
(ix) Opinion about the NGOs role	
Not effective	84
Can't say	2.4
Effective	10.1
Moderately effective	2.4
No response	1.2

Table 4
Distribution of population in different Income classes

Income class (rs.)	% of population (n=169)
< 5000	30.77 (n=52)
5000-10000	36.09 (n=61)
10000-15000	11.24 (n=19)
15000-30000	14.20 (n=13)
>30000	7.69 (n=13)

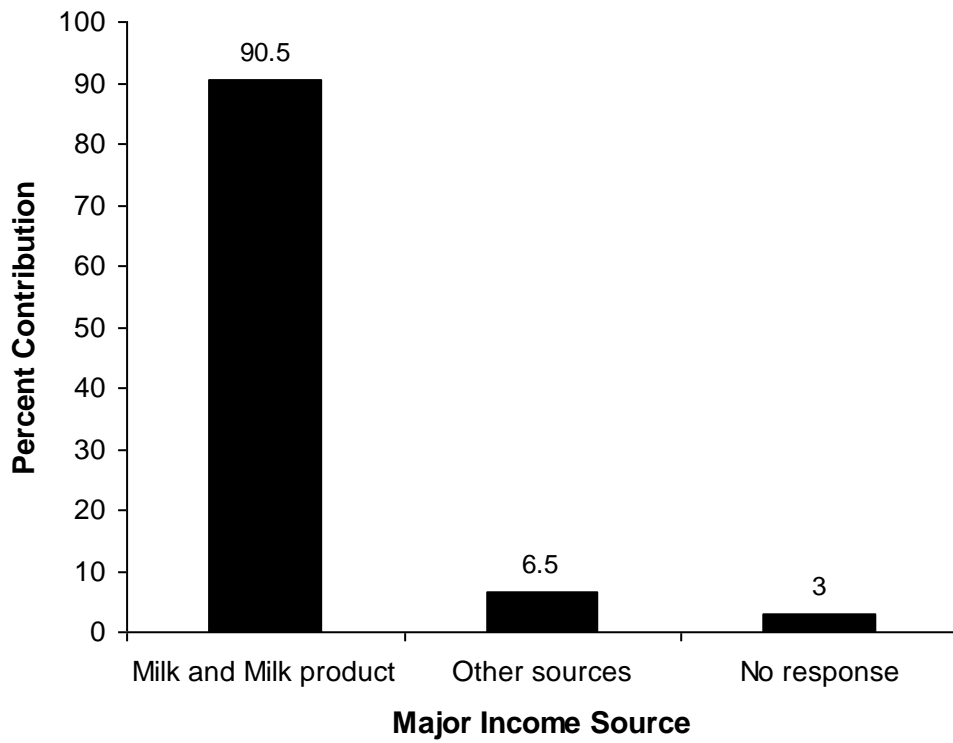


Fig 1 Major Income source of *Van Gujjars*

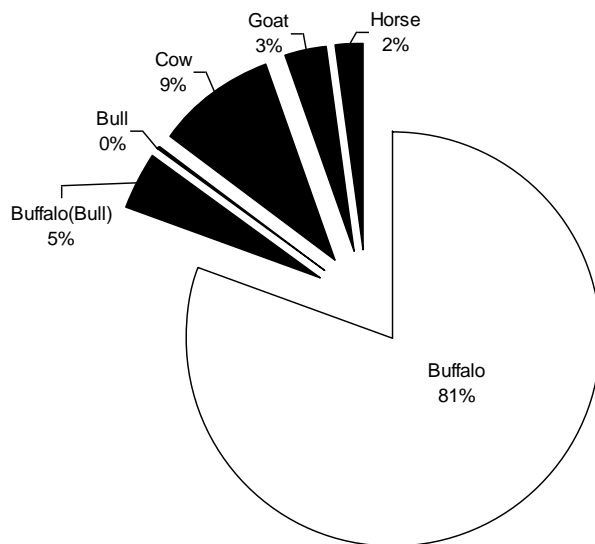


Fig 2 Percentage distribution of various livestock type among *Van Gujjar* families

Willingness to cooperate with FD in management of RNP

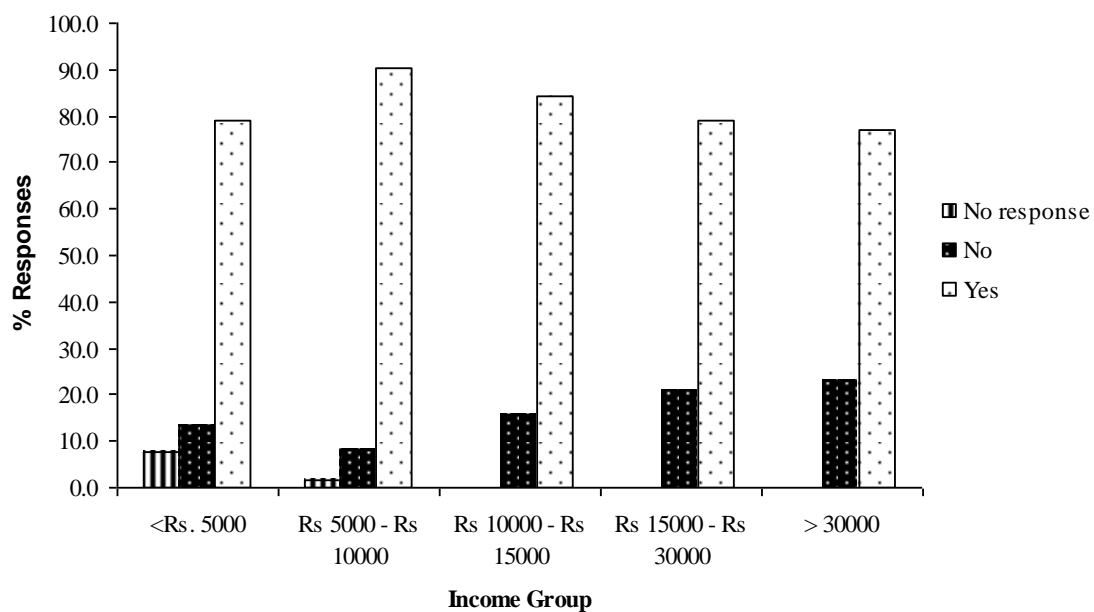


Fig 3 Willingness to cooperate in management of RNP with FD among the respondents from various Income group

Awareness about NGOs

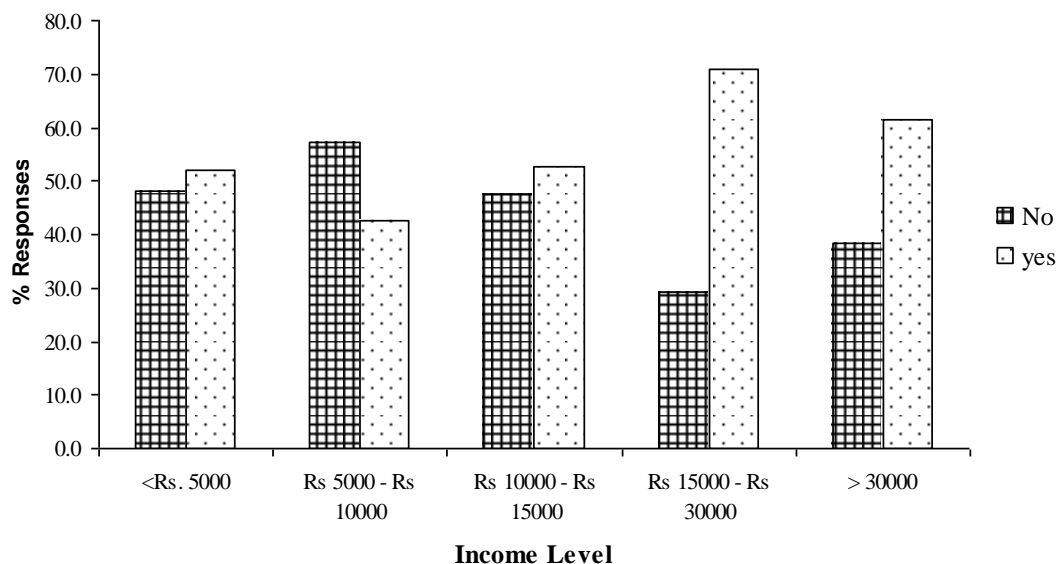


Fig 4 Awareness about the NGOs among the respondents from various Income group