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Research Paper

Problems and Prospects of Living Around Kaziranga: An Exploratory Study

Economics

KEYWORDS : protected area, factor analysis, Kaziranga

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ABSTRACT

People have been living around forest for centuries as it provides life support. But due to increasing extraction forests have been given legal protection for conservation and people are debarred from resource collection from inside the forests. Besides such prohibition people around such protected areas often suffer from wildlife damage. But there are benefits from tourism and related activities around such areas. Many times park authority administers welfare programmes for people around. Therefore, the present study has been proposed around Kaziranga National Park to know the underlying dimensions of living so that policy measures can be taken to help out the people living around the park. This will not only minimize conflict but will also enhance conservation.

I. Introduction

Forests have been given legal protection owing to depletion of natural resource caused by heavy extraction. Such protection leads to prohibition on collection of resources of any kind from inside forests and leads to protest and sometimes to political struggle (Mukherjee, 2009). There are some other costs also that people living around protected or forest areas have to bear. People living around protected areas are vulnerable to the attacks by wild animal. Human–wildlife conflict (HWC) is a growing problem for communities located at the borders of protected areas (Ogra, 2008, Perez and Pacheco, 2006).

In spite of restriction on resource extraction, there are many benefits that people may enjoy while living around protected area (Chae et al. 2012, Hussain et al. 2010 and Angulo-Valdés and Hatcher, 2010). People often gain from tourism activities that take place around protected areas and from employment in tourism-related enterprises such as lodges, kiosk or guided tours(Nepal 2000, Job and Paesler, 2013).. In addition to such direct economic gains from tourism protected area authority also administer different programs for the welfare of the people living in the vicinity of the park (Rishi et al. 2008). Eco-development project may create institutional-base for negotiating incentives and reciprocal commitments for conservation by the village communities.

Resolution to reduce conflicts between local people and protected area managers are taken in many cases without any attempt to comprehensively, characterize the underlying problems (Maikhuri et al. 2000). Therefore, the main objectives of the paper are

- to see the effectiveness of development measures implemented by park management authority and
- to find the underlying dimension of living around protected.

II. Study area

Kaziranga National Park (KNP) situated in the state of Assam in the North Eastern part of India refers to a vast forest area with an area of 430 km. The area around Kaziranga was very thinly populated but in the beginning of the 20th century people started settling around the park with expansion of tea garden area. Taking into consideration the need of the hour, the Government of Assam declared Kaziranga as a reserve forest in 1905. This was the beginning of protection. After that KNP was again declared a National Park in 1974. Six additions have been made to the park at different times to function as buffer zone and corridors to the wild animals.

The people around the park are enjoying benefits as well costs of protection. They are enjoying benefits from tourism (Hussain, 2012) and welfare measures including animal vaccination programmes with the help of World Wildlife Fund, providing facility of safe drinking water, provision of community hall, schools and provision of health centers. To reduce the forest dependence eco-development programs in 2008 was introduced. At the same time it has also been suffering from deprivation and cost of wildlife damage (Di Fonzo, 2007). The recent bone of contention is the attempt made by the park authority to evict people living in the addition area which come into conflict with the Forest Rights Act 2006 implemented with a purpose to give land rights to indigenous people. A permanent solution to the problem will take place if proper attention is given to increase welfare of the people. Therefore, the study has been conducted in KNP.

III. Methodology

The study mainly uses primary data collected by sample survey conducted at household level. To select samples two stage sampling have been used. In the first stage, 10 villages have been selected purposively which are situated on the boundary of the park at different distances from the core zone of the park. The study does not involve the addition areas where people are still residing despite prohibition. In the second stage a total of 205 sample sizes have been surveyed with the help of random sampling. The field work was conducted between September 2012 to January 2013. Besides simple statistical measure the study also uses factor analysis to find the underlying dimension of living around protected area. The analysis also involves 't' test and 'Chi square' test and these analysis have been performed with SPSS version 17.0.

IV. Results and discussion

(i) Demographic and socio economic characteristics of respondents

It has been found from the field survey that the majority of the respondents belong to Other Backward Caste (OBC) followed by Scheduled Tribe (ST) people as shown in table 1. This difference in caste has been found to be statistically significant at

$$\chi^2 = 35.80(3) < 0.00.$$

Table 1: Caste category of respondents

Categories	Percentage
General	19.0
SC	11.7
ST	30.2
OBC	39.0
Total	100.0

Source: Field survey

It has been found from the survey as shown by figure 1 that almost 42.5 percent of the respondents are farmers out of which 15 percent earn subsidiary income from tourism also. This is followed by labourers in the tea garden or agriculture (21.5 percent). Almost 20.20 percent are directly related to tourism related business activities followed by servicemen (9.8 percent including jobs in tourism sector) and 6 percent were involved in other activities. This difference in occupation has also been found to be statistically significant at.

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$\chi^2 = 100.31(5) < 0.00$

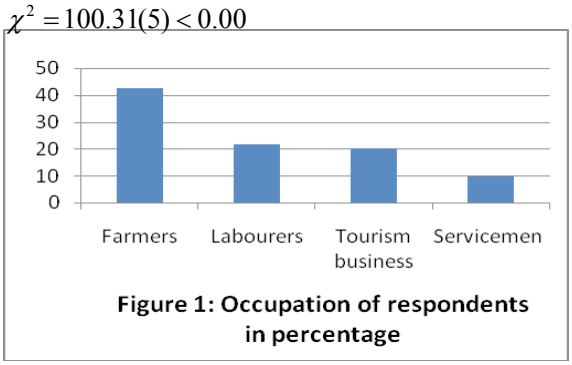


Figure 1: Occupation of respondents in percentage

It has been found from the study that almost 88.6 percent of the respondents used to rear livestock mainly for three purposes: for use in agriculture, for production of milk and to sell as source of meat in the market. Wildlife damage is very rampant around the park and 77.6 percent of the respondents have been found to suffer from some or the other kind of wildlife damage in the last couple of years.

The park authority has been trying to implement different welfare measures for the people living in the fringe areas. But from the survey it has been found that 76.1 percent of the respondents have not received any welfare measures provided by the park authority. The remaining 23.9 percent of the respondents have reported that they had received benefits in the form of community hall, animal vaccination, drinking water filter and establishment of school in the locality. Another important dimension of welfare measures introduced by the park authority was the introduction of the Eco Development Committee. But it has been found from the survey that 96 percent of the respondents have not heard about the eco development programs nor they are associated with any such programmes. Only 2 percent of the respondents reported that under eco development programs fisheries were dug but remained incomplete.

Against the common belief, it has been found that the villagers hardly go for resource collection inside the forest. These people have revealed that they do not allow any suspicious 'anti park' activities in their villages. Rather they are very kind to the animal and they help the park authority to rescue distressed animal during flood and other circumstances. They worship wild animals on different occasion.

It has been already found that people have settled around the park but they have been suffering from different problems. To find the underlying dimension of living around the park a factor analysis has been conducted where extraction method was principal component analysis with Varimax rotation. Four factors have emerged from factor analysis whose eigenvalues were greater than one. The extracted factors altogether explained 63.21 percent variance in the data set as shown in table 2. The factors are explained below.

Table 2: Factors of living around protected area

Variables	First factor	Second factor	Third factor	Fourth factor
There is decline in grassland for livestock (decline_ grassland)	.910			
There is no veterinary doctor (no_vet)	.853			
Profit from livestock (profit_ livestock)		.761		
Number_livestock (num_ livestock)		.729		
Purpose_land_use (land_ use)		-.620		
Presence of crop protection committee in the village (crop_protection)			.784	
Damaged caused by animals (animal_damage)			.550	
Presence_EDC (EDC)			.548	
Welfare measures provided by KNP (KNP_welfare)			.534	
Income from tourism (income-tourism)				.886
Percentage of variance explained	27.703	14.632	10.628	10.251
Eigenvalues	2.770	1.463	1.063	1.025

Source: Calculated by author from field data

Variables in the first factor are decline grassland and No_vet. Respondents have revealed that there is scarcity of fodder and there is lack of veterinary facilities. This represents the problem related to livestock.

Variables in the second factor are profit_livestock, num_livestock and land_use. The first two variables are positively correlated with the second factor. But the variable 'land use' is negatively correlated with the second factor. Profit from livestock increases with the number of livestock. As the number of livestock increases it needs more land whereas the purpose of land use is negatively related to the factor. This clearly shows that land is no longer devoted for pasturing. It might happen due to decline in the size of land holding due to increasing size of population over the last few decades around the park. This factor clearly shows that profit from livestock is an important dimension of living around the park. An increase in profit from livestock may improve their economic condition.

Variables in the third factor are crop_protection_measure, animal_damage, EDC and KNP_welfare measures. It has been found from the study that animal damage is rampant and it can be prevented by crop protection measures. This is one of the welfare measures which may be implemented by park authority. Another two important variables positively associated with the third factor is Eco Development Committee KNP and welfare measures implemented by authority. Therefore, welfare measures play an important dimension in the life of the people in the fringe area.

Variables in the fourth factor is income_tourism. There is only one variable in the fourth factor which represents income from tourism activities. Due to decline in the size of land holding and wild life damage of agriculture tourism can be an alternative source of livelihood for the people.

From the result of factor analysis it is clear that livestock related issues comprise an important dimension of living around the park. But along with that welfare measures and tourism related income are also equally important. But factor analysis does not give quantitative measurement of the extent of welfare measure or tourism affecting human life. Therefore, a separate cost benefit analysis has been conducted to gauge the impact.

V. Conclusion and recommendation

The legal protection of park has remained a bone of contention between the local people and park authority who wants to implement different policies for preserving biodiversity at global interest. The study has revealed that welfare measures implemented by the park authority have not been found to be so effective. While studying the underlying dimension of living, livestock related problem has been found to be one important dimension of life. Another important dimension of living is profit from livestock whereas almost 84.4 percent of the respondents have been found to realize that rearing livestock is no longer a profitable business. Majority of the respondents living in the vicinity of the park own livestock but there is lack of veterinary doctors and decline in grassland. Park authority has provision for vaccination of cattle in the surrounding villages but that is not sufficient. Therefore, there should be provision of more facilities for animal care. In this regard floating veterinary hospital and camps may help a lot. Besides, the park authority

may fix a day per week when the villagers may be allowed to collect grass from the park which will also help maintain the park (Vedeld, 2012). This will allow regulated use of forest resources (Shah, 2007)

It has been found from the survey that most of the respondents around the park have been suffering from the problem of animal raiding but they are hardly compensated. There exists barely any crop protection measure working effectively at present. Therefore, there should be more crop protection measures.

It has also been found from factor analysis that benefits from tourism is an important dimension of living of the people around the park. Therefore, there should be extensive development of tourism activities in these far-flung areas from the core zone along with expansion of other welfare measures. There are leakages in tourism expenditure at different levels. Such leakages could be prevented through planned interventions such as proper marketing of products from cottage industries and strengthening of local level institutions (Hussain et al., 2012).

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