

# Tribal livelihood in Wayanad, Kerala; changing patterns

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## Abstract

**Background/Objectives:** Tribal livelihood is always been a concern for policy makers in our country. Forest was inevitable in the very survival of the tribal population since ancient period. But due to the rapid socio-economic changes that is happening in the outer world and the changing lifestyles had influenced the life of tribal majorities as well. To assess the changing livelihood strategies among the Tribal in India and the factors influencing it.

**Methods/Findings:** Therefore a study has taken up in Wayanad district of Kerala to assess the changing livelihood strategies among the Paniya and Kattunaickka communities and the factors influencing it. It was evident that, non-forest activities became the major source of income for majority of the households and the existing socio-economic parameters had a significant influence on the livelihood strategy engaged by the tribal households.

**Application:** Therefore viewing the livelihood reality of the tribals is essential to bring in new approaches that could better address the livelihood hurdles of tribal communities in the state in particular and country in general.

**Keywords:** Tribal community, Livelihood strategy, Multinomial logistic regression, Non Timber Forest Products, Forest activities.

## 1. Introduction

Tribals are the aboriginal inhabitants of the country who have been living a life congenial to the natural environment. The population of the tribals in the country is 10.45 crores as per 2011 census constituting 8.6% of the total population, with a decadal growth of 24% compared to 2001. Kerala hold a unique position in the tribal map of India. Tribals in Kerala commonly called as 'Adivasis' are the indigenous population found in dense forest and mountains of Western Ghats mainly bordering the states of Karnataka and Tamil Nadu. There are 48 tribal communities throughout the state out of which 38 are scheduled tribe and the rest are denotified tribal communities. Tribal origin, primitive way of life and general backwardness in all aspects are the common characteristics of tribals in Kerala. Every district in Kerala has some tribal population. They are found significantly in the districts of Wayanad (35.82%), Idukki (15.66%) and Palakkad (11.05%). The 2011 census report records the tribal population in the state as 4, 84,839 against 3, 64, and 189 in 2001 putting the decadal growth rate at 0.36%.

Forest plays a major role in the very survival of these communities by means of livelihood provisions enjoyed by them from the forest resources. There are nearly 200 million tribals and other traditional forest dwelling communities in India, who derive their livelihoods mainly from forest resources. But this dependence has undergone a drastic change today. At present various livelihood needs of the tribals such as, water, food, fodder, shelter and so on are fulfilled through multiple livelihood activities such as forest collection, fishing, wage labour, cultivation etc. Thus, different livelihood needs of the tribal households are fulfilled through various activities and using different resources. Therefore viewing the livelihood reality of tribal poor in terms of conventional employment income-nexus is completely incorrect. In [1] this context an urgent need to evolve an alternative development approach for tribal communities with a different conceptual core is essential. This conceptual core also has to become comprehensive and be able to capture the livelihood reality of rural poor. The primary objective of the study is to gain a better understanding on the micro-level situations of the livelihood of tribal communities.

## 2. Objectives

1. To study the socio-economic situations of the tribal communities
2. To analyse the livelihood situations of the tribal communities and factors affecting it.

## 3. Methodology

The data for the study was collected through interactions with various stakeholders like the Government officials responsible for the implementation at the state level including officials of the welfare department, forest department, panchayath offices, Kerala institute for Research Training & Development studies of Scheduled Castes and Scheduled Tribes (KIRTADS), tribal societies and tribals. For addressing the research questions, primary questionnaire survey of tribal households belong to two major tribes of Wayanad viz., Paniya and Kattunaickka was conducted by authors in the year 2018. A total of 80 households were surveyed in forest four ranges selected from the district. The households selected were on the basis of random sampling. The basis for selecting the ranges was maximum number of Scheduled Tribes residing in the area and accessibility to conduct study. Socio-economic profile of the respondents was analysed using simple averages and percentages, and graphs. To study the factors influencing the livelihood strategies multinomial logistic regression was employed.

## 4. Multinomial logistic regression

The multinomial logistic regression model was employed to identify factors influencing the livelihood strategies of tribal communities. Based on the major livelihood sources, tribal households were classified into three groups. The categories were, group 1: if more than 50% income comes from agriculture and livestock: Group 2 if more than 50% income comes from forest activities and Group 3 if than 50% income from non-forest activities. Group 2 was retained as reference category in the analysis.

The basic form of logistic function is;

$$P = P \left( Y = \frac{1}{X_1 X_2 X_3 \dots X_k} \right) = \frac{e^Z}{1+e^Z} = \frac{\exp Z}{1+\exp(Z)} \dots\dots\dots (3)$$

$$\frac{P_i}{1-P_i} = e^Z \dots\dots\dots (4)$$

$$L_i = \ln \left( \frac{P_i}{1-P_i} \right) = Z_i = \beta_0 + \beta_i X_i \dots\dots\dots (5)$$

Where;

Z = set of predictive variables

The quantity  $\frac{P_i}{1-P_i}$  is called as odds hence,  $\ln \left( \frac{P_i}{1-P_i} \right)$ , the log odds is logit. The coefficients,  $\beta_0$  and  $\beta_i$  are logit regression coefficients. These coefficients are used to compute odds ratio which give the ratio of two odds of an even occurring (Y=1). Logistic regression commands in the stata version 14.2 is employed for the analysis.

The explicit form of the functions is specified as follows

$$P_{ij} = \beta_0 + \beta_1 age + \beta_2 EDU + \beta_3 SH + \beta_4 PJFM + \beta_5 SP + \beta_6 ILO + \beta_7 AS + \beta_8 AHI + \beta_9 D_1 \dots\dots\dots (6)$$

Where;

$P_{ij}$  = Livelihood strategy (More than 50% income from; Agriculture & livestock=1; Forest activities = 2; non-forest activities =3)

EDU= education

SH= Size of the house

PJFM = Participation in Joint Forest Management

SP = Social participation

ILO = Individual land ownership

As= asset structure

AHI = Annual household income (₹)

FS = Family size (No.)

$D_1 = 1$ , if belongs to Kattunaickka, 0 otherwise

## 5. Results and discussion

### 1. Socio-economic profile of the tribal households

Tribals are considered as one of the district identity in Wayanad. The history of the district itself is intertwined with the tribal culture and customs. The social profile of the tribal households in the study area is presented in Table 1. It can be seen that the average size of the family is similar among the two tribal groups, indicating most of them were belonged to a nuclear family. Most of the family heads were of the age group of 44 to 45. Highest average age was 45.46 years. Among the Paniya tribes 30% families were female headed followed by Kattunaickkas (20%). Paniya community found to have the least amount of forest land under them, 0.06 hectares. Kattunaickka had on an average of 0.26 hectares of land.

Table 1. Social profile of household

Particulars	Kattunaickka	Paniya
Average family size (no.)	4	3
Age of the Family head (years)	45.46	44.23
Male headed households (no.)	32(80.00)	28(68.29)
Female headed households (no.)	8(20.00)	12(30.00)
Average size of land holding under FRA (Hectares) [2]	0.26	0.06

### 2. Educational status

Tribes in the area are educationally backward as compared to the general population. The educational statuses of the households are shown in the Table 2. The educational attainment was assessed based on the years of schooling. Majority of the tribal heads had an education of less than 7 years. Percentage of illiterates is as high as 57.50% among Paniya tribe. Educational status is limited to primary in all the groups. Among Kattunaickka tribes 12.5% are attained an education level of SSLC and above. Even though government has introduced various programmes to improve their educational status it remains pitiable among them.

Table 2. Educational status of the household head

Years of schooling	Kattunaicka	Paniya
0	17 (42.50)	23 (57.50)
1-7	18 (45.00)	17 (42.5)
8-10	3 (7.50)	0 (0.00)
11-12	1 (2.50)	0 (0.00)
13-15	1 (2.50)	0 (0.00)
Total	40 (100)	40(100)

### 3. Income status of the respondents

The annual household income of the tribal respondents is represented in Table 3. Respondents were classified into five categories based on the annual income. From the table it can be found that more than 40% of the overall group falls under the income range of ₹ 50, 000 to ₹1, 00, 000. Paniya had the poorest income level amid all the tribes. Ten per cent of them were earning an income of less than ₹ 50, 000 a year. Those with more than ₹ 3, 00, 000 accounted to be only 3% of the total sample out of which all belonged to Kattunaicka.

Table 3. Annual income wise classification of tribal respondents

Annual household income ( in₹)	Kattunaickan	Paniya
<50000	3(7.50)	4(10.00)
50000-100000	25(62.50)	34(85.00)
100000-200000	9(22.5)	2(5.00)
200000-300000	1(2.50)	0(0.00)
>300000	2(2.00)	0(0.00)
Total	40(100)	40(100)

#### 4. Livelihood strategies of tribals

Tribal livelihood was always a point of concern for the policy makers and researchers. According to [3] it would be very interesting to highlight the tribal interactions and changing livelihood patterns as at present they cannot take up their traditional occupations due to several factors and are engaged as wage labourers in nearby estates. They have also started migrating to outside states resulting in culture change and occupation pattern. The emergence of industry and market economy has disturbed the age old tribal and nature relation according to [4]. As compared to the past times the dependence of tribes on the forest based livelihood is tapering away. This study has attempted to reveal the present livelihood strategies of the tribals and various socio-economic factors influencing it. Various livelihood activities engaged by the tribal households were grouped into three categories viz., agriculture and livestock rearing, forest activities (forest works, NTFP collection, watchers and forest guards) and non-forest activities (wage labour and Government jobs).

Kattunaickka is one of the primitive tribes of Kerala, found significantly in Wayanad. As their name denote, the Kattunaickka were the kings of the jungle regions engaged in the collection and gathering of forest produces. They are known as 'Ten Kurumar' since they collect honey from the forest. They have all the physical features of a hilltribe. Along with NTFP collection they are also engaged in agriculture as well as agriculture labour. They are the major community engaged in honey collection in Wayanad. More than 50% of this tribe depends on fuel food alone as an energy source reveals their high dependence on forest ecosystem. The income distribution among these PVTG groups revealed that 62% of their income came from non-forest activities which clearly revealed their lower participation in forest related occupations now. Forest activities contributed to only 29% of their annual income. Lack of interest among the new generation in forest related occupation, lack of skill, high risk and lower returns were the major reasons for the tapered interest in forest activities.

A wide majority of tribes in state of Kerala hail from the Paniya tribal. They inhabit in the regions of Wayanad and the adjacent parts of Kannur and Malappuram. The Paniyas were sold along with plantations by the landlords as bonded labours. Higher castes were employing them as professional coffee thieves. Paniyas are the most marginalized and deprived community among the tribes in Wayanad due to their inherent socio-economic backwardness since colonial period. If we look into the income distribution of these communities, 78% of their income came from non-forest activities alone. Since earlier period they were the labourers in plantations. Even now they continue to engage in labour activities. Only 19% of their income comes from forest even though they are skillful in forest collection.

Income distribution of the tribal households in general indicated their decreasing dependence on the traditional livelihood options like agriculture & livestock and forest activities (NTFP collection, forest conservation works, watchers and promoters etc.). For both the communities this scenario was indifferent that non forest activity contributed to more than 50% of annual income. The dependence on non -forest activities was highest among the Paniya tribe, socio-economically weak among all of them. Paniyas are the least land holding community among all. Wage labour was the major income source under non forest sources. Due to their low educational background and poor social status, even after the concerted efforts of the government they are still the backward among all of them. The PVTG Among the four, Kattunaickka also showed a decreasing dependency on forest activities. Even though majority of them were engaged in NTFP collection the income generation was not sufficiently contributing to the total income.

#### 5. Factors affecting the livelihood strategies

They reported that in recent years, land resources alone have not been able to provide food and livelihood security for the tribal households and it resulted in seasonal migration under distress. In [5] order to assess the influence of various socio-economic factors on the livelihood strategies of tribals, multinomial logistic regression was employed. Livelihood strategies were grouped into three, forest activities, non-forest activities and agriculture & livestock rearing. Based on this, households were categorized into three; Group 1 included households whose major income comes from agriculture and livestock: Group 2 consisted of households whose major income comes from forest activities and Group 3 with more than 50% income from non-forest activities. Group 2 was taken as the base category. It was observed that, independent factors such as, age, education, individual land ownership, household asset structure, and annual household's income had a significant impact on the livelihood strategies of tribal households.

In case of the first group, land ownership had a positive coefficient indicating, logs of odds ratio, probability of depending on agriculture income increases as the land holding with the tribals increases. In [6] the overall sample agriculture was practiced by the households who have received forest land under Forest Rights Act, 2006. They continue to practice their traditional cultivation even though such households are few in number. It clearly indicates their affinity to continue with the traditional way of life provided land for continued cultivation. Annual income of the household had a negative coefficient indicating that, household with high income prefer forest activities as compared to agriculture and livestock activities. It indicated their higher probability of shifting from agriculture as a major source of income to forest activities as income increases. Otherwise households engaged in forest activities realised better income than the one engaged in agriculture and livestock.

For the group with non-forest activity as major income source, age, education, individual land ownership, asset structure, annual household income and the community they belong had a significant impact on the livelihood strategy they have adopted. It was found that, as age increases the log of odds ratio, probability of moving from the category that majorly engaged in non-forest activity to forest activities increases, indicating more chance of staying back in the same category. It cleared described the affinity of older generations to stay back in the traditional means of livelihood. As the years of schooling increases probability of engaging in forest activities decreases indicated by the positive coefficient 0.032.

*Table 4. Results of multinomial logistic regression: factors influencing livelihood strategies of tribal communities*

	Coefficient	Sig.	coefficient	Sig.
Intercept	-26.203	0.272	0.737	0.748
Age	0.273	0.543	-0.085	0.057*
Education	0.012	0.120	0.032	0.045**
Size of the house	4.869	0.396	0.168	0.788
Participation in JFM	-1.286	0.489	0.730	0.205
Social participation	1.202	0.586	0.243	0.613
Individual land ownership	7.898	0.081*	7.122	0.070*
Asset structure	-4.09	0.281	-0.181	0.008***
Annual household income	-0.888	0.043**	0.537	0.006***
Family size	0.492	0.416	0.387	0.179
D <sub>1</sub> = 1, if belongs to Kattunaickka, otherwise zero	-5.425	0.259	-1.453	0.088*

As individual land ownership increases, the log of odds ratio probability of moving from third group to second group decreases indicated by the positive coefficient -0.537. Land man ratio has a strong influence on the livelihood stratification [7]. Number of farm assets possessed by the household also showed a significant effect in third category indicating the household with higher farm assets showed increasing tendency to engage in non-farm activities. The significant coefficient of community dummy indicated that the probability of engaging in non-farm activity increases if they belong to Kattunaickka as compared to Paniya as shown in Table 4.

## 6. Conclusion

The study assessed the socio-economic situation and livelihood pattern of the Paniya and Kattunaickka tribe in tribal majority district of Kerala, Wayanad in India. Even after the concerted efforts of government, tribals remained to be the most marginalized in terms of education and socio-economic standards. As compared to the past times, the dependence of tribes on the forest based livelihood is tapering away due to various reasons. Non-forest activities have overtaken the forest based livelihood among both the tribes due to the better income realization out of it. It was evident that forest based traditional occupations were not anymore a major source of income for majority of the households. Multivariate logistic regression revealed that age, education, land ownership, asset structure, annual household income and the community which they belong had a significant influence on deciding the major livelihood strategy.

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