

Recent Trends in Sustainable Development

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Sustainable Interaction of Tribal Women on Non-timber Forest Products for Livelihoods: A Case Study in Western Ghats of Maharashtra

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Abstract

There are 1.04 billion tribal people in India, which makes 8.6 per cent of India's total population that directly depends on forest, of which 49.74 per cent are women. Tribal people largely depend on forest for their daily requirements. The interaction between the environment and tribal women for their socio-economic, cultural and religious practices leads to sustain their livelihood. NTFPs contribute to around 60 per cent of the tribal household earnings. It is imperative to rehabilitate the forest resources to improve the livelihood of the tribal women. The present study intends to study sustainable dependence of tribal women on non-timber forest products of tribal livelihood in Western Ghats of Maharashtra. The study is confined to the Surgana, Navapur, Mokhada, and Shahapur taluka of Nashik, Nandurbar, Palghar and Thane districts respectively, based on the highest tribal population. A sample of 100 respondents was selected by random selection of 25 respondents from each Taluka place by using two stages stratified sampling technique. The regression analysis shows that the wage earning opportunity, land holding and family size are the major factors involving the NTFPs collection and marketing. The results of Logistic analysis shows family size and land holding have increased the probability of NTFPs collection, whereas family type and days employment reduced the probability of NTFPs collection. On the other hand, agricultural income and wage income have significant impact on

Objectives of the Study

1. To study the socio-economic characteristics of the tribal people.
2. To study the composition of income and employment of the tribal people.
3. To study the dependence of tribal people on non-timber forest product for livelihood and the factors influencing non-timber forest product collection.

Research Methodology

Study Area and Sampling

The study is confined to the Surgana, Navapur, Mokhada, and Shahapur taluka of Nashik, Nandurbar, Palghar and Thane district respectively, based on the highest tribal population. A sample of 100 respondents was selected by random selection of 25 respondents from each Taluka place, by using two stages stratified sampling technique. The study is conducted during January 2017 to June 2017.

Collection of Data

Both primary and secondary data has been collected for the study. Primary data is collected by structured interview schedule, focus group discussion and participants' observation. Secondary data is collected from the published government documents.

Statistical Tools Used

The reliance of the tribal women on NTFPs collection and socio-economic affairs is estimated by using Logit model, multiple regression, standard deviation and average, etc.

Results and Discussions

Socio-economic Profile of the Respondents

The socio-economic environment of the tribal women involved in the NTFP activities has been analyzed using descriptive statistics. The analysis shows that majority of 78 per cent of tribal women depend on NTFPs. The average family size is 5.8. The respondents with no formal education are 68 per cent, while those with primary education are 21 per cent. The tribal people engaged in NTFPs activities have below secondary education. Majority of 73 per cent respondents have 11-20 years experience in collection of NTFPs. The 61 per cent women were between the age group of 21 to 30 years.

Employment and Income

The major economic activity of the tribal people to meet their food and income needs includes collection of NTFPs, agriculture, allied activities, wage earning, etc. The average employment level per household was 177.5 man days per annum. Among the different employment available in collection and marketing of NTFP provide maximum employment of 58.78 per cent, agriculture provides 13.75 per cent wage employment 26.82 per cent and allied activities 3.12 per cent. The NTFPs have contributed the most employment compared to other three categories. The contribution of NTFPs to the total income is 40.78 per cent followed by agricultural income of 36.49 per cent. The wage income is more in case of landless and small farm household followed by NTFPs.

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Factors Influencing NTFPs Collection - Multiple Linear Regression Analysis

Table 1: (a) Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.92a	0.920	0.915	490.685

(a) Predictors: (Constant), x5,x1,x4,x2,x3,x6

Table 1: (b) Analysis of Variance (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	257,025,345	6	42,837,558	177.918	0.000b
	Residual	22,391,755	93	240,772		
	Total	279,417,100	99			

(a) Dependent variable:Y

(b) Predictors: (Constant), x5,x1,x4,x2,x3,x6

Table 1: (c) Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Results at 1% level of significance
		B	Std. Error	Beta			
1	(Constant)	5,550	797.994		6.955	0.000	
	x1	-0.123	0.030	-0.141	-4.061	0.000	Significant
	x2	-5.675	1.257	-0.181	-4.515	0.000	Significant
	x3	-22.751	30.236	-0.032	-0.752	0.454	Insignificant
	x4	805.081	125.389	0.236	6.421	0.000	Significant
	x5	-178.109	24.524	-0.291	-7.263	0.000	Significant
	x6	0.958	0.041	0.797	23.089	0.000	Significant

(a) Dependent variable:Y

$$\text{Predicted } Y = 5,550 - 0.123*x1 - 5.675*x2 - 22.751*x3 + 805.081*x4 - 178.109*x5 + 0.958*x6$$

Y = Yield/Income from NTFPs

x1 = Income from Agriculture,

x2 = Number of days employment

x3 = Number of family member (family size)

x4 = family type (Nuclear/Joint)

x5 = Land Holding (in Acre)

x6 = income from wages

Table (1a) shows the r^2 value of 0.92, which provides an indication of the percentage of variance in the dependent variable explained by independent variable. (Table 1c) shows that agriculture income, number of days employment, family type, land holding and wages income the $p < 0.05$, have significant influence on NTFPs income positively, but in case of family size $p > 0.05$, do not have significant impact on NTFPs collection.

Logistic Regression Analysis

Logistic regression is performed to ascertain the variables which enhance the probability of tribal people going for NTFP collection. The result shows that six variables of family type, family size, land holding and man day's employment have the significant variables influencing the probability of tribal going for NTFP collection. Variable family size and land holding have increased the probability whereas family type and days employment reduced the probability. The logistic regression equation is:

$$\text{Log (p/1-p)} = -0.451 - 0.645*x_1 + 0.090*x_2 + 0.086*x_3 - 0.010*x_4 + 0.00*x_5 + 0.00*x_6$$

Sustainability Issue

India's forests tie together a huge potential for livelihood based activities for the tribal people. Sometimes, the outsiders use the tribal women to extract the resources especially NTFPs by encouraging over exploitation by paying little more money. Sometimes, the tribal women are aware of the dangers of over exploitation of the resources but they badly can influence and arrest the exploitations.

A large number of women depending on forest for subsistence livelihood, the policies for controlling forest product deficiency need to be set as focal point by reducing the dependence by creating substitute livelihood opportunities for the tribal women, providing the choice to use the modern technologies to minimize the gap in demand and supply of NTFPs and confirming the adoption of sustainable harvesting practices.

Implications of the Study

The study has several implications to the policy makers and tribal people, to have sustainability of ecosystem. The increasing forest degradation is reducing the NTFPs income, so this study is helpful to the stakeholders to generate ample income opportunities for the tribal people through systematic efforts, training in alternative skills, providing them alternative assets for production and marketing avenues.

Conclusions

The NTFPs is the largest contributor to the tribal people's income and employment as the other source of income and opportunities are rare to them or do not have an access to reach them. The regression analysis shows that the wage earning opportunity, land holding and family size are the major factors involving the NTFPs collection and marketing. The results of Logistic analysis shows family size and land holding have increased the probability of NTFPs collection, whereas family type and days employment reduced the probability of NTFPs collection. On contrary, agricultural income and wage income have significant impact on the NTFPs collection. The sustainable development can take place if efforts are taken to improve the other income opportunities to the tribal people. The sudden weaning out of the NTFPs income from the tribal people will damage their socio-economic conditions.

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