# THE ECONOMIC CONTRIBUTION OF FOREST RESOURCES: EVIDENCE FROM TRIBAL COMMUNITIES OF JANGALMAHAL AREA

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## ABSTRACT

In the dictionary the word livelihood refers to a 'means of living'. In development thinking, livelihood refers to the way people make a living. The basic problem of rural area is problem of underemployment rather than unemployment and it is high incidence of unemployment and underemployment among the economically weaker sections. If we have a look in the third world countries, then it appears that, one of the important sources of livelihood is forest resources. Local people living in forest area depend on forests resources for various products such as fuel wood, construction materials, medicine, food etc. There are three ways in which forest provides livelihoods for the tribal communities living in the forest fringe villages. They are direct employment, self employment and secondary employment. Under these circumstances, in the present paper an attempt has been made to judge the contribution of the forest resources in the livelihood of the poor rural people of tribal communities living in and around the forest of Jangalmahal area of Bankura district.

**Keywords**: livelihood, forest resources, employment, income.

## INTRODUCTION

Forests are important in the livelihoods of local people in most developing countries. In the third world countries one of the important sources of livelihood is forest resources. India is also not the exception. In our country a huge population living close to the forest depends on the forest resources for their livelihoods. There are around 1.73 lakh villages, located in and around forests (MoEF, 2006). Though there are no official census figures for the forest dependent population in the country, different estimates put the figures from 275 million (World Bank, 2006) to 350-400 million (MoEF, 2009). Forest goods and services provide a major source of subsistence for the People living in the forest fringe villages. These includes collection of edible fruits, flowers, tubers, roots and leaves for food and medicines; firewood for cooking (some also sale in the market); materials for agricultural implements, house construction and fencing; fodder (grass and leave) for livestock and grazing of livestock in forest; and collection of a range of marketable non-timber forest products. The forest fringe communities not just

collect these forest products for their own consumption but also for commercial sale, which fetch them some income. The income from sale of the forest products for households living in and around forest constitutes 40 to 60 per cent of their total income (Bharath Kumar *et al*, 2010; Sadashivappa *et al*, 2006; Mahapatra and Kant, 2005; Sills *et al*, 2003; Bahuguna, 2000).

Forest is the second largest land use in India after agriculture covering 21.05% of the total geographical area of the country (Anonymous, 2011). The livelihood associated with the forest tribal communities are in the form of direct employment, self-employment and secondary employment. The application of local skills and village-level technology in wood-based and small-scale forest-based enterprises provide secondary employment and livelihood opportunities for tribal people, main amongst are saw milling, rayon, pulp and paper, ply wood and panel products, wood seasoning and preservation, tanning, sports goods, match splints, veneers, wooden boxes, bamboo and cane products, agricultural implements, furniture, structural wooden items, musical instruments, *bidi* making, educational goods, wood carving, wooden utensils *etc.* (Pant, 1984; Gera, 2002).

This paper analyzed the role of forest resources in local livelihoods and tries to determine the forest dependence of the tribal communities of the Sarenga Block, situated in the Bankura district of Jangalmahal area. Our study area, Jangal Mahal (Forested Part of South-Western part of West Bengal) is one of the tribe rich area comprises with 26.86% tribal population. This article is engaged to discern the interactions of tribal, specifically ***Santal*** with sub-humid deciduous forest tracts of *Jangalmahal* area of West Bengal. The main tribal communities in the block are *Munda*, *Oraon*, *Lohara etc*. They are socially, educationally, economically and politically backward with accompanying impediments of illiteracy, poverty, malnutrition, superstitions, addictions, ignorance and exploitation. Unemployment and under-employment features are inherent in the block causing low income and miserable life of the households. The forest resources are the important contributor to the total livelihoods among the tribal communities in the block. In the present paper we have tried to examine the contribution of forest resources to the forest tribal communities in the Jangalmahal area of Bankura district.

## II OBJECTIVE OF THE STUDY

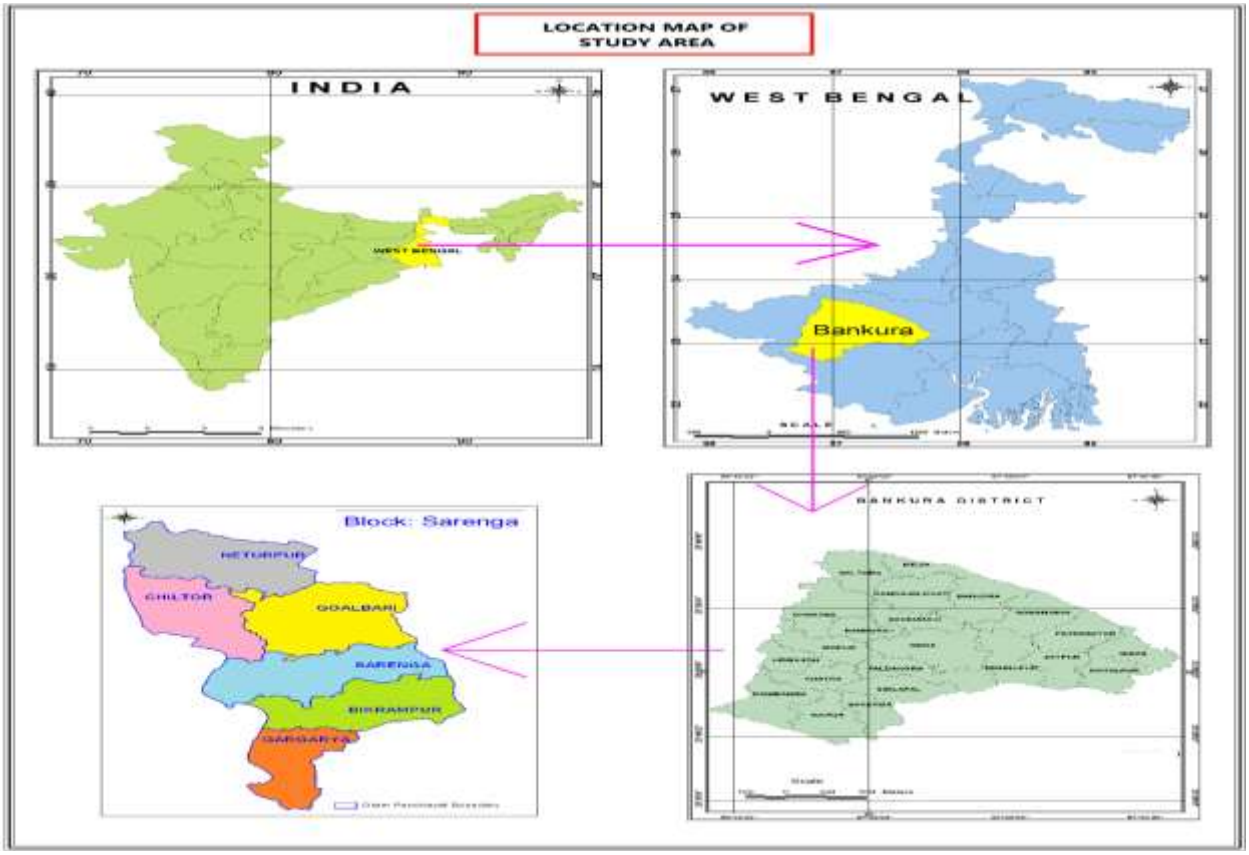
1) To find out the livelihood of the poor rural people of tribal communities living in and around the forest of Jangal Mahal area.
2) To examine the contribution of forest resources among the tribal communities of the proposed area.

## STUDY AREA

To give the objective a clear shape we have concentrated our study in the Sarenga Block of Bankura District of state of West Bengal. Bankura has also a glorious past and we find the mention of this area in Mahabharata as *Summha* area. In Jain *Acharanga-Sutra* the area was mentioned as *Rarh* or *Larh*. In Buddha *Jatakas* it was mentioned as *Summhabhumi*. Bankura is bounded by the state districts. The north and north east part of the district

is bounded by the distrct of Burdwan from which it is separated by the river Damodar, on the south-east by Hooghly, on the south by Midnapore and on the west by Purulia. On the other hand, Sarenga Block, the region undertaken for the work, is such a region of Bankura District in West Bengal that has been considered as underdeveloped economic zone since long. Sarenga is a part of "Jangal Mahal" (Forested Part of South-Western part of West Bengal). Due to remote location, forest as well as agricultural activities, it has a spatial dimension. The Study area is located in the southern part of Bankura District in West Bengal between the latitude of 22.634˚ North to 22.915˚ North and longitude of 86.913˚ East to 87.105˚ East. It covers an area of 293.51 square Kilometers. Location of Bankura District as well as Sarenga block is given in Map 1.

Map-1




## METHODOLOGY

For shake of the present study we have purposively selected Sarenga block of Bankura district since it is a part of "Jangal Mahal" or forested Part of South-Western part of West Bengal. Again for the purpose of the study we have taken randomly 92 poor tribal respondents whose livelihood somehow depends on the forest resources. Household heads were treated as respondents. Data was collected using two sets of questionnaires which were administered to 92 respondents each and the management staff of the forest. The questions were on the role and importance of forest products in sustaining rural livelihood, impact of community sources of livelihood and most

important economic activities of the people around the reserve. A very simple mathematical tool has been used for the presentation of the data. All the computations are being made on the basis of the receipt of returns from the respondents.

## GENERATION OF EMPLOYMENT FROM FOREST BASED ACTIVITIES

Non-Timber Forest Products (NTFPs) have an important role in the household economy of forest fringe dwellers living in the dry-deciduous forests of Purulia, Bankura and West Midnapur districts of West Bengal, India. Due to the lack of agricultural land and industrial activities, forest fringe people collect forest products in regular basis for their livelihoods. They also make some value-added products to have some extra money. It is comparatively easier to calculate the monetary value of NTFPs, which are marketed at the local market or by intermediaries. However, the products which are normally collected for domestic uses carry enough monetary value too, but it never calculated in a proper way. It is very difficult to get a proper information from forest villagers that which product how much each household collect annually as the production of NTFPs vary from one year to another. A relative value can be calculated based on the importance, availability and quantity of these products. We have already mentioned in the previous paragraphs that the livelihood associated with the forest tribal communities are in the form of direct employment, self-employment and secondary employment. Here we oblige to mention them in the following paragraphs.

### LIVELIHOOD GENERATION FROM DIRECT EMPLOYMENT

In the study area direct employment is accelerated frequently by the Forest Department under the regular jurisdiction of forestry activities in the form of casual labour. The main forest based activities begetting employment and income for the people are land preparation, nursery operations and plantation works, development of soil and water conservation measures, *tendu* leaf collection and bamboo works (Islam, Quli, Rai, & Sofi, 2013). These works are mainly contractual with daily-paid wage basis and the people related to these forest based activities are quite accustomed to it as employment in these operations is instable due to its seasonal nature.

The details of the Forest based direct and secondary employment in the study area have been given in Table-1. It is easily discernible that the average size of forest-based direct paid employment among the surveyed population is 13.45 mandays/ household/ annum and the mean income earned from these activities is ` 2757.25/ household/ annum in the study area.

**Table 1: Livelihood generation from forest based direct employment (N=92)**

| Nature of Employment | Mean employment (Mandays/household/ annum) | Wage rate(Rs.) Per mandays | Mean Income (‘ /household/annum) |
|---|---|---|---|
| Direct employment | 13.45 | 205.00 | 2757.25 |
| Secondary employment | 0.00 | ---- | 0.00 |

In spite of huge forest resources, labour input livelihood generation relating to forest based secondary employment is absent as any wood based or NTFPs enterprises have not been constructed in the study area so far. In the near future the forest –resources based enterprises might have a greater possibility to be formed or have a greater prospect to be furnished and if this happens; it would certainly elevate the tribal livelihood-system and generate more employment and income for the unemployed people.

## LIVELIHOOD GENERATION FROM SELF EMPLOYMENT

In the sample villages the pros and cons of livelihood generation from NTFPS based employment have been given in the Table-2. Ample data regarding household collection, consumption and sale of major NTFPS as well as income and employment generation from these NTFPS among surveyed population have been given here. Though it is very difficult to get a proper information from forest villagers that which product how much each household collect annually. Again, it is very tough to calculate the income of the households by taking information from a single sitting. A rigorous interaction and at the same time a cross checking are needed to find out the accurate amount of income. We have noticed a common tendency among the respondents to hide their income in a fear that excess income will create a chance to earmark them as APL family. On the other hand, they have tried to record more expenditure items and amount at the same time when they are asked for that. Thus the problem of less entry and excess entry often disturb the researchers. Here we have tried to overcome these problems by doing continuous cross checking in every aspect of income and expenditure items.

**Table 2: livelihood generation from NTFPs based self employment (N=92)**

| Sl. No. | **NTFPs** | No. of person involved in collection | Percentage to total respondent | No. of person involved in marketing | Percentage to total respondent | Income(Rs.) per annum | Employment (Mandays/ Annum) |
|---|---|---|---|---|---|---|---|
| 1. | Sal( Shorea robusta) leaf | 58 | 63.04 | 21 | 22.83 | 166000 | 2114 |
| 2. | Sal seed | 14 | 15.22 | 14 | 15.22 | 1560 | 12 |
| 3. | Fodder | 85 | 92.39 | 11 | 11.96 | 46070 | 2180 |
| 4. | Mahua ( Madhuca Latifolia) flower | 81 | 88.04 | 81 | 88.04 | 41350 | 84 |
| 5. | Mahua seed | 59 | 64.13 | 59 | 64.13 | 8220 | 14.80 |
| 6. | Arjun Chhal/bark (Terminali arjuna) | 36 | 39.13 | 27 | 29.35 | 18500 | 19 |
| 7. | Fuel wood | 92 | 100.00 | 23 | 25.00 | 55850 | 1645.60 |
| 8. | Ber (*Zizyphus mauritiana*) | 17 | 18.48 | 8 | 8.70 | 16800 | 9 |
| 9. | Bamboo (*Bamboosa arudinacea*)corn | 14 | 15.22 | 3 | 3.26 | 5750 | 8.46 |
| 10. | Tamarind (*Tamarindus indica*) | 9 | 9.78 | 6 | 6.52 | 6100 | 12.50 |
| 11. | Tendu (*Diospyros melanoxylon*) fruit | 22 | 23.91 | 22 | 23.91 | 4200 | 10.90 |
| 12. | Bel (*Aegle marmelos*) | 16 | 17.39 | 11 | 11.96 | 2700 | 29 |
| 13. | Honey (Apisdorsata) | 9 | 9.78 | 9 | 9.78 | 14600 | 21.65 |
| 14. | Tooth brush Sal (*Shorea robusta*), Neem (*Azadirachta indica*), Mahua (*Madhuca latifolia*) | 72 | 78.26 | 8 | 8.70 | 33700 | 320 |
| 15. | Kachnar (*Bauhinia variegata*) flower | 27 | 29.35 | 8 | 8.70 | 5300 | 18.20 |
| 16. | Karanj (*Pongamia pinnata*) seed | 13 | 14.13 | 13 | 14.13 | 1400 | 6.40 |
| 17. | Bahera (*Terminalia belerica*) | 4 | 4.35 | 4 | 4.35 | 1050 | 3.20 |
| 18. | Tendu (*Diospyros melanoxylon*) leaf | 41 | 44.57 | 18 | 19.57 | 16600 | 980 |
| | Total | …… | …… | …… | …… | 445750 | 7488.71 |
| | Average | …… | …… | …… | …… | 4845.11 | 81.40 |

The percentage of households involved in collection of various NTFPs varied from 4.35% to 100% while household's percentage involved in NTFPs marketing was 1.83% to 80.49% in the study villages. It is evident from the data that *sal* leaf ( Rs. 166000 / annum) holds highest position and bahera( Rs. 1050 / annum) holds lowest position in terms of income earning. On the other hand if we have a look on the generation of employment opportunity then we see that fodder holds the first position (2180 mandays/ annum) and bahera whatever may be the criterion holds the lowest position (3.20 mandays/ annum).

## RANKING OF LIVELIHOOD GENERATION IN ORDER OF INCOME AND EMPLOYMENT

**Table 3: Ranking of livelihood generation in order of Income and Employment**

| Rank | Income(Rs.) per annum | Employment (Mandays /Annum) |
|---|---|---|
| I | Sal leaf | Fodder |
| II | Fuel wood | Sal leaf |
| III | Fodder | Fuel wood |
| IV | Mahua flower | Tendu leaf |
| V | Tooth brush | Tooth brush |
| VI | Arjun Chhal/bark | Mahua flower |
| VII | Ber | Bel |
| VIII | Tendu leaf | Honey |
| IX | Honey | Arjun Chhal/bark |
| X | Mahua seed | Kachnar flower |
| XI | Tamarind | Mahua seed |
| XII | Bamboo corn | Tamarind |
| XIII | Kachnar flower | Sal seed |
| XIV | Tendu fruit | Tendu fruit |
| XV | Bel | Ber |
| XVI | Sal seed | Bamboo corn |
| XVII | Karanj seed | Karanj seed |
| XVIII | Bahera | Bahera |

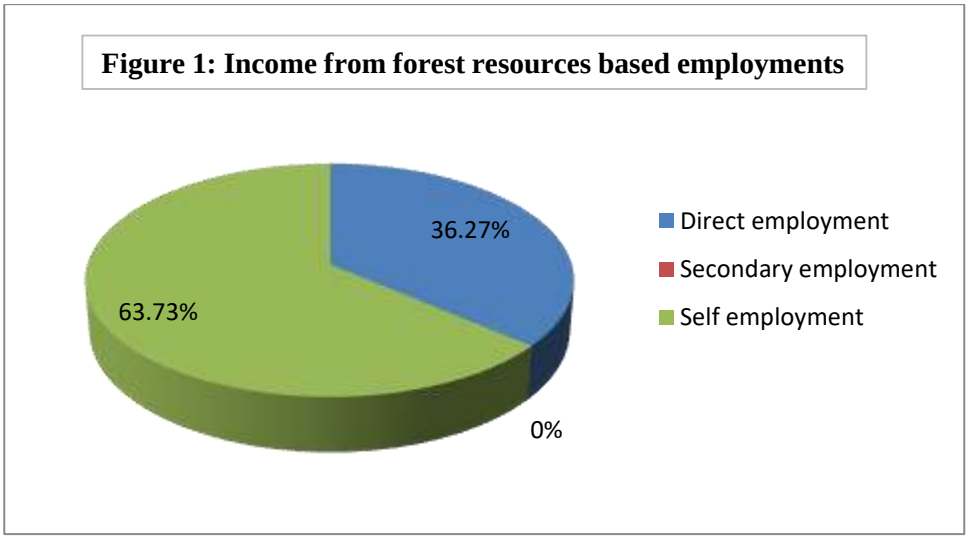
We have derived table 3 from table 2 to rank the livelihood generation in terms of income and employment. Our ranking table, whatever may be the criteria of ranking, shows that Sal leaf, Fuel wood and Fodder rank themselves in the upper steps of our ranking ladder. Livelihood in terms of Tooth brush, Tendu fruit, Karanj seed and Bahera retain themselves in the same ranking position in our computation irrespective of ranking criterion. What is interesting here is that Ber holds VII$^{th}$ position in case of generation of income but in terms of generation of employment it holds XV$^{th}$ position while bel holds just the opposite rankings i.e. XV$^{th}$ position in case of generation of income and VII$^{th}$ position in case of employment.

## LIVELIHOOD GENERATION FROM FOREST BASED EMPLOYMENT

We have stated earlier in the previous paragraphs that people living in and around the forest area get direct employment as casual labour by the forest department. From Table 4 and also from figure 1 we see that the share of income earned from direct employment out of total forest income is 36.27 percent.

**Table 4: Livelihood generation from forest based employment (N=92)**

| Nature of Employment | Mean employment (Mandays/household/ annum) | Mean Income (in Rs. /household/annum) | Percentage to total |
|---|---|---|---|
| Direct employment | 13.45 | 2757.25 | 36.27 |
| Secondary employment | 0.00 | 0.00 | 0.00 |
| Self Employment | 81.40 | 4845.11 | 63.73 |




The share is low because direct employment is seasonal in nature. The rest 63.73 percent share of forest income comes from NTFPs based self employment since forest based secondary employment is zero in our study area.

## CONTRIBUTION OF FOREST RESOURCES TO THE TOTAL LIVELIHOODS

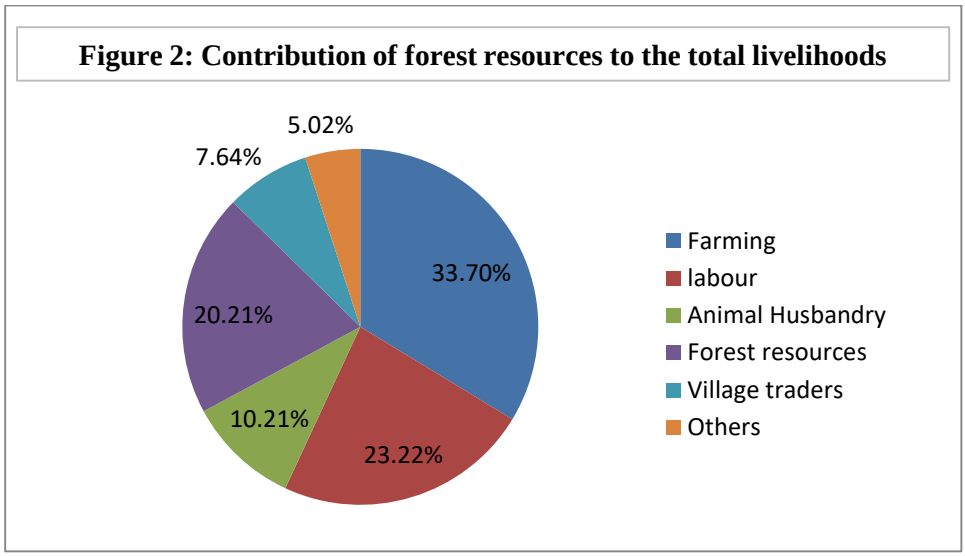
We have found five broad categories of occupation of the members in addition to the forest work .they are-

1. Farmers, those who are farming on own land as well as on land taken by lease.
2. Agricultural labourer.
3. Animal husbandry which includes goat rearing, poultry rearing, cow rearing etc.
4. Village traders,including petty businessmen, processing of *muri* etc.
5. Others.

The structure of household annual income from different occupations as mentioned above has been depicted in the following Table 5 and also in Figure 2.

**Table 5: Contribution of forest resources to the total livelihoods (N=92)**

| Occupation | Mean employment (Mandays/household/ annum) | Mean Income (in Rs. /household/annum) | Percentage to total |
|---|---|---|---|
| Farming | 108 | 12,678.52 | 33.70 |
| labour | 171 | 8,738.25 | 23.22 |
| Animal Husbandry | 112 | 3840.65 | 10.21 |
| Forest resources | 94.85 | 7602.36 | 20.21 |
| Village traders | 206 | 2875.00 | 7.64 |
| Others | 187 | 1890.52 | 5.02 |




It is evident from the Figure that the average annual income/ household obtained from agriculture holds the first position followed by labour services and forest resources among surveyed households in the sample villages Thus, the forest resources are the 3rd important contributor to the total livelihood income streams among surveyed households in the study area. Land for agriculture is in short supply and the returns to agriculture are low in the study area. They work as agricultural labour in the nearby areas where agricultural production is quite good and also involve themselves in 100 days work. Due to lack of any alternative option, forest-based resources are considered to be the sole extant source for both subsistence and cash income among surveyed households. The earnings from forest-based resources are generally used to fulfill the household needs and are considered as an asset hypothecated to them in times of adversity or for securing livelihood concerns such as education for children wedding, investment in agricultural equipments.

## *CONCLUSION*

One thing that is clearly followed from the study that despite a decadal exercises through the SHG and other govt. activities non-agricultural base of these regions remains in a nebulous negotiation. Still agricultural sector appears as major employment giving sector in our sample. However, the forest resources play a vital role in the livelihoods of tribal people through direct paid employment and NTFPs based self-employment. A dilatory and sustainable use of natural resources can help in creating newer employment opportunities and be proved as a mode of self-sustenance. Due to a lack of knowledge regarding improved collection practices and value addition, primary collectors are currently unable to earn much from NTFPs. Therefore, revitalization of the process of forming new collectives/groups or strengthening existing ones can be pursued. In order to maintain equilibrium between the welfare of the tribal people and ecological stability in the study area the visualized interventions needs to be implemented judiciously.

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