RESEARCH PAPER

# Socio-economic and demographic descriptions of tribal people subsisting in forest resources of Jharkhand, India

## M.A. ISLAM[1], R. RAI[2], S.M.S. QULI[3] AND M.S. TRAMBOO[1]

[1]Faculty of Forestry, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Wadura Sopore, BARAMULLA (J&K) INDIA

[2]Tropical Forest Research Institute, Indian Council of Forestry Research and Education, P.O. R.F.R.C., JABALPUR (M.P.) INDIA

[3]Faculty of Forestry, Birsa Agricultural University, Kanke, RANCHI (JHARKHAND) INDIA

Email : ajaz_jsr@yahoo.co.in;  ajaztata@gmail.com

A field study based on structured interviews and personal observations was carried out to study the socio-economic and demographic characteristics of tribal (*Munda*, *Oraon* and *Lohara*) people subsisting in forest resources of Bundu block in Ranchi district of Jharkhand, India. The primary data were collected from 164 sample households drawn from 9 selected villages employing multi-stage random sampling technique. The results indicated that majority of the respondents were middle aged having low literacy up to primary level, no membership or membership of only one organization with nuclear family systems and large family size. The size of land holding among most of the respondents were either marginal or small, engaged mainly in cultivation having one temporary structured house, one pair of bullocks, medium farm implement possession, 6 to 10 livestock, medium material possession, income from forest resources upto Rs. 8000/ annum and gross annual income upto Rs. 30000/ annum. The surveyed households have higher sex ratio compared to the sex ratio of all India tribal population and over all India population. The unemployment problem is very high among the surveyed population. Hence, the livelihood diversification using existing forest resources should be given topmost priority as important strategy of poverty reduction and socio-economic upliftment of backward tribal people by the policy makers, planners, economists, extension workers and social scientists in the area.

**Key words :** Socio-economy, Demography, Tribe, Forest, Livelihood, Poverty

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## INTRODUCTION

The forests in India, once known for their valuable timbers, are now looked at for their non-timber forest products (NTFPs) with a clear shift in the paradigm (Omkar *et al*., 2012). Globally an estimated 350 million people mostly in developing countries depend on forest resources as their primary source of income, food, nutrition and medicine (Opaluwa *et al*., 2011). The tribal people inhabiting the forests areas carry a very long history of extraction of forest resources, for subsistence and/or

sale (Maske *et al*., 2011). Forest resources have been identified as one of key sources for livelihoods and food security of tribal households (Dovie, 2003). Since forest resources constitute the only natural resource that provides free access and subsistence to the poorest of the poor, they should really assume greater importance and receive priority for their development and management (Sarmah and Arunachalam, 2011).

The Jharkhand state is bestowed with rich natural resources, abundant biodiversity and excellent human

resources. Forests in Jharkhand extend over 23605 km$^2$ (29. 61%) of the total state's geographical area, having very rich floral and faunal biodiversity (Anonymous, 2009). The tribal people are an integral component of forests having inseparable symbiotic and mutually reinforcing relationship and emotional attachment (Singh and Quli, 2011). Of the 49 per cent rural poor, 75 per cent live either inside or on the periphery of the forests in Jharkhand (Anonymous, 2010). The forest resources play an important role in the livelihood support of these tribal people in terms of subsistence, income and employment generation. The forest resources are the 2$^{nd}$ important contributor to the total livelihood income streams of the tribal communities of Jharkhand (Islam *et al*., 2013). The tribal people possess the traditional skill base, have access to the resource base and have conducive government policies on forest resources management and trade (Pandit, 2011). Forest based livelihoods by the tribal people mainly revolve around collection, processing and utilization/ selling of various NTFPs like fuel wood, lac, tooth brush, leaves for plate and cup making, fodder and browse, vegetables, fruits, seeds, flowers, bamboos, medicines, mushrooms, oilseeds, oilseed cake, spices, honey, oils, gums, resins, gum-resins, dyes, wax, brooms, fibres, floss, silk, charcoal, fencing, wildlife products, thatches, baskets, ropes, mats, handicrafts, pickles, beverages, abiotic products etc.

In order to meet the challenges of acute poverty and food insecurity and to make existing livelihoods stronger and sustainable much attention must be paid on the development and value addition of these forest resources. To design a strategy of livelihood security and promotion based on forest resources, a thorough understanding of the socio-economic and demographic characteristics of tribal people subsisting in forest resources of Jharkhand is imperative. Hence, the study is sought to gather baseline information of tribal people to give database to the policy makers, planners, economists, extension workers and social scientists.

# RESEARCH METHODOLOGY

## Study area :
The study was conducted in Bundu block of Ranchi district in Jharkhand in the years 2009-10. The block is lying on the undulated surface of Chhotanagpur plateau between 23$^0$11'- 23$^0$18' North latitude and 85$^0$35'- 85$^0$58' East longitude at an altitude of 337 meters (1105 feet)

above mean sea level with total geographic area of 25097 ha. The block is a backward area, with 4377.50 ha (17.44%) of geographic area under forest cover and inhabited by 32528 (60.74%) tribal people belonging to *Munda*, *Oraon* and *Lohara* who use the local northern tropical dry deciduous forest (5B/C2) to extract forest resources for self-consumption and economic subsistence. Rain fed agriculture using dry land varieties of paddy form the main land use in the area. The study site enjoys typical tropical climate with three distinct seasons *viz.,* (June-October), winter (November-February) and summer (March-June), average rainfall of 1413.60 mm and temperature varying from 24°C to 37.2°C.

## Sampling technique and sample :
The study followed a multi-stage random sampling approach to select the sample villages and the tribal households. It involved 9 sample villages *viz.,* Korda, Jojoda, Husirhatu, Banaburu, Nehalgara, Ghagrabera, Hesapiri, Roredih and Kuchidih out of the 88 revenue villages having around 10 per cent sampling intensity in the block. A representative sample of 164 tribal households having 20 per cent of the total number of the households in the sample villages was drawn by simple random technique for household survey. Household heads or eldest members were treated as respondents.

## Data collection and analysis :
The primary data on socio-economic and demographic characteristics of tribal people were collected through field surveys and interacting with people in person through structured interviews and personal observations. The socio-economic and demographic characteristics included in the interview schedule structured were based on scales developed/ modified by earlier workers like Venkataramaiah (1990) and Singh and Talukdar (2002). Simple statistical tools *viz.,* frequency (f), percentage (%), average (x) and standard deviation were used for analysis of the data as per Snedecor and Cochran (1967).

## Measurements of variables :
The variables were measured as: age (chronological age in year), education (0 = illiterate, 1 = below primary, 2 = primary, 3 = middle, 4 = high school, 5 = intermediate, 6 = graduate and above), social participation (0 = no participation, 1 = membership of 1 organization, 2 = membership of > 1 organization, 3 = office bearer, 4 =

public leader), family composition (family type: 1 = Nuclear, 2 = Joint; family size: 1 = upto 5 members, 2 = > 5 members), size of land holding (0 = landless, 1 = marginal (upto 1.0 ha), 2 = small (1.1 to 2.0 ha), 3 = medium (2.1 to 4.0 ha), 4 = large (> 4.0 ha), main occupation (1 = wage labour, 2 = caste occupation, 3 = cultivation, 4 = business, 5 = service 6 = any other), housing status (type: 0 = no house, 1 = hut, 2 = temporary structure, 3 = mixed, 4 = permanent structure; number: 1 = 01, 2 = 02, 3 = >02), farm power = (0 = no bullock, 1 = 1-2 bullocks, 2 = 3-4 bullocks, 3 = 5-6 bullocks), farm implements (0 = no farm implements, 1 = wooden plough, 1 = sickle, 1 = spade, 1 = axe, 1 = harrow, 2 = power tiller, 2 = bullock cart, 2 = pump set, 2 = duster, 2 = sprayer, 2 = electric motor, 4 = tractor), livestock possession = (0 = no livestock, 1 = upto 5 livestock, 2 = 6 to 10 livestock, 3 = more than 10 livestock), wealth status = (1 = crude oven, 1 = stove, 1 = sewing machine, 1 = watch, 1 = cycle, 1 = radio, 1 = wooden furniture, 1 = pressure cooker, 2 = improved storage bin, 2 = tape recorder, 3 = scooter/ motor cycle, 1 = any other), income from forest resources (1 = up to Rs. 4000/ annum, 2 = Rs. 4001 to 8000/ annum, 3 = Rs. 8001 to 16000/ annum, 4 = above Rs. 16000/ annum), gross annual income (1 = very low income (upto Rs. 15000/ annum), 2 = low income (Rs. 15001 to 30000)/ annum), 3 = medium income (Rs. 30001 to 60000/ annum), 4 = high income (above Rs. 60000/ annum).

## RESEARCH FINDINGS AND ANALYSIS

The findings of the present study as well as relevant discussion have been presented under following heads :

**Socio-personal characteristics of the tribal people:**
*Age* :
Of the sample respondents in the villages, majority

(53.05%) were middle aged followed by young (27.44%) and old (19.51%) age groups, respectively (Table 1). The mean age was 41.55 years. The people in the age group of 31-50 years are the real earner group of the society bearing burden of the dependents (Sood *et al*., 2008: Pal, 2009). The middle aged people are generally economically active, enthusiastic, innovative and hard working with more strength, vigour, zeal, aptitude and challenge (Sinha *et al*., 2010).

*Education* :
The percentage of literate and illiterate among the respondents was found to be 61.58 per cent and 38.42 per cent, respectively. Among literates about 20.12 per cent had an education up to below primary followed by primary (18.29%), middle (15.85%), high school (4.88%), intermediate (1.83%) and graduate and above (0.61%) (Table 1). The mean score of education was 1.37 which indicates that low literacy dominates in the surveyed population. The low literacy might be due to poor socio-economic conditions of parents, lack of educational facilities in the area, higher involvement of boys and girls in livelihood earnings and ignorance towards education (Gangadharappa *et al*., 2005: Singh *et al*., 2011 and Pal, 2011).

*Social participation* :
Above one-third (37.20%) of the respondents did not have membership of any organization; however, 27.44 per cent were member of at least one organization, about 21.34 per cent of them were having membership of more than one organizations, 7.93 per cent were office bearer and 6.09 per cent were public leader (Table 1). The mean value of social participation was 1.18 which shows the grousing magnitude of interest and willingness of the tribal people to be associated with various formal and informal

| Table 1 : Age, education and social participation of the tribal people in the sample villages | | | | | (n=164) |
|---|---|---|---|---|---|
| Age | | Education | | Social participation | |
| Category | Household | Category | Household | Category | Household |
| Young (Upto 30 years) | 45 (27.44) | Illiterate | 63 (38.42) | No participation | 61 (37.20) |
| Middle (31 to 50 years) | 87 (53.05) | Below primary | 33 (20.12) | Membership of 1 organization | 45 (27.44) |
| Old (> 50 years) | 32 (19.51) | Primary | 30 (18.29) | Membership of > 1 organization | 35 (21.34) |
| - | - | Middle | 26 (15.85) | Office bearer | 13 (7.93) |
| - | - | High school | 08 (4.88) | Public leader | 10 (6.09) |
| - | - | Intermediate | 03 (1.83) | - | - |
| - | - | Graduate and above | 01 (0.61) | - | - |
| M.S. = 41.55, S.D.= 9.55 | | M.S. = 1.37, S.D.= 1.40 | | M.S. = 1.18, S.D.= 1.19 | |

M.S.= Mean score,     S.D.= Standard deviation,     Figures in the parentheses indicate percentages

organizations (Prakash and Sharma, 2008).

*Family composition* :

Majority (63.42%) of the respondents was from nuclear families and rest (36.58%) belonged to joint families. Similarly, most of them (59.76%) were having large sized families and rest (40.24%) belonged to small sized families (Table 2). The mean score (2.96) of family composition shows prevalence of nuclear and large sized families among the surveyed population. Because of growing individualism people prefer to lead independent life with personal assets and proper accommodation in nuclear families (Bezbaruah, 2004). Consideration of child as an added asset to the family who can contribute by the way of labour and lack of knowledge of the benefits of small families might be the reasons for large sized families (Gangadharappa *et al*., 2005).

**Economic characteristics of the tribal people:**
*Size of land holding* :

A considerable percentage (46.95%) of the respondents was marginal farmers followed by small (26.22%), medium (17.68%) and large (9.15%) farmers (Table 3). The mean score of size of land holding was found to be 1.89 which is indicative of preponderance of marginal and small farmers in the surveyed area. This could be attributed to the nuclear and neo-local structure of families in the community which urged early fragmentation of land from generation to generation and

among married off-springs (Bezbaruah, 2004; Prakash and Sharma, 2008; Pal, 2009 and Bharathkumar, 2010).

*Main occupation* :

Cultivation remained the main occupation of majority (62.20%) of the respondents followed by wage labour (18.90%), business (7.31%), service (4.88%), caste occupation (3.66%) and any other (3.05%) (Table 3). The mean score of main occupation was 2.85 indicating agriculture as prevalent main occupation among the sampled population. Agriculture being the back bone of the economy in the area, most of the respondents either belong to farming families or dependent on farming for their livelihood. The families engaged in wage labour, business, service, caste occupation and other activities as their main occupation were also doing agriculture as their subsidiary occupation (Geetha and Devi, 2008 and Pal, 2009).

*Housing status* :

Approximately 78.05 per cent of the respondents had temporary structure type house followed by mixed (12.19%), permanent structure (7.93%) and hut (1.83%). About 91.46 per cent of the families were having one house whereas few (8.54%) of them had two houses (Table 3). The mean score (3.35) of housing status points out that the families own one temporary structure house for dwelling in the area. The low housing status could be attributed to low socio-economic condition, poverty, lack

| Table 2 : Family composition of the tribal people in the sample villages | | | (n=164) |
|---|---|---|---|
| Family type | | Family size | |
| Category | Household | Category | Household |
| Nuclear | 104 (63.42) | Small (up to 5 members) | 66 (40.24) |
| Joint | 60 (36.58) | Large (> 5 members) | 98 (59.76) |
| M.S. = 2.96, | S.D.= 0.88 | | |

M.S.= Mean score,    S.D.= Standard deviation,    Figures in the parentheses indicate percentages

| Table 3 : Size of land holding, main occupation and housing status of the tribal people in the sample villages | | | | | | | (n=164) |
|---|---|---|---|---|---|---|---|
| Size of land holding | | Main occupation | | Housing status | | | |
| | | | | Type | | Number | |
| Category | Household | Category | Household | Category | Household | Category | Household |
| Marginal (< 1.00 ha) | 77 (46.95) | Wage labour | 31 (18.90) | No house | – | 01 | 150 (91.46) |
| Small (1.01-2.00 ha) | 43 (26.22) | Caste occupation | 06 (3.66) | Hut | 03 (1.83) | 02 | 14 (8.54) |
| Medium (2.01-4.00 ha) | 29 (17.68) | Cultivation | 102 (62.20) | Temporary structure | 128 (78.05) | > 02 | - |
| Large (> 4.00 ha) | 15 (9.15) | Business | 12 (7.31) | Mixed | 20 (12.19) | - | - |
| – | – | Service | 08 (4.88) | Permanent structure | 13 (7.93) | - | - |
| – | – | Any other | 05 (3.05) | – | – | – | – |
| M.S. = 1.89, S.D.= 1.00 | | M.S. = 2.85, S.D.= 1.15 | | M.S. = 3.35, S.D.= 0.87 | | | |

M.S.= Mean Score,    S.D.= Standard Deviation,    Figures in the parentheses indicate percentages

of infrastructure, rural environment etc. (Lakra and Cardenas, 2002 and Pal, 2009).

*Farm power* :

An overwhelming majority (64.63%) of the respondents had at least one pair of bullocks, whereas, 17.07 per cent of them owned 3-4 bullocks, 14.03 per cent were having 5-6 bullocks and only 4.27 per cent of them possessed 7-8 bullocks (Table 4). Mean score (1.06) shows preponderance of households with one pair of bullocks in the region. Farming is the main source of livelihood for majority of the respondents engaged themselves in farming either as primary or secondary profession. To support farming and allied activities possession of bullocks became imperative for them (Singh *et al*., 2007).

*Farm implements* :

Nearly half (49.39%) of the respondents belong to medium farm implement possession category followed by low (29.27%) and high (21.34%) (Table 4). The average number of farm implements possessed by the respondents was found to be 9.92. Farming and allied activities being major source of livelihood of the tribal people, the possession of farm implements was necessary (Jha and Jha, 2001; Chaudhary and Panjabi, 2005).

*Livestock possession* :

Around 73.17 per cent of the respondents possessed 6 to 10 livestock, 14.02 per cent had up to 5 livestock, 11.59 per cent were owning more than 10 livestock and only 1.22 per cent of them were having no livestock at all (Table 4). The mean score of the livestock possession of the respondents was 1.95 which indicates that households possessing 6 to 10 livestock are prevalent in the study area. Holding good number of livestock could be attributed to the fact that livestock rearing was the most preferred secondary occupation (Prakash and Sharma, 2008).

Livestock support agriculture and allied activities besides providing nutritional, social, economic, religious and recreational benefits to the people (Pal, 2009; Bijalwan *et al*., 2012).

*Material possession* :

Almost half (48.17%) of the respondents belong to medium material possession group followed by low (31.10%) and high (20.73%) (Table 4). The average number of domestic material possessed by the respondents was recorded to be 8.04. Although different and varied types of domestic materials were possessed by the respondents, the overall picture was not satisfactory, especially in the context of the improved, modern and prestigious material resources. The main reasons for such scenario might be poverty, low literacy, lack of knowledge, lack of exposure, infrastructural insufficiency etc. (Seema and Manoharan, 2002; Lakra and Cardenas, 2002).

*Income from forest resources* :

Among the sample households surveyed, 35.37 per cent had income between Rs. 4001 to Rs. 8000/ annum from forest resources, 26.83 per cent were earning Rs. 8001-16000/ annum, 24.39 per cent were having income up to Rs. 4000/ annum and 13.41 per cent were earning more than Rs. 16000/ annum (Table 5). The mean score of income from forest resources was 2.29 which indicates that the tribal people earning income varying between Rs. 4001 to Rs. 8000/ annum from forest resources were preponderant in the study area. The forest resources being a major source of income and livelihood in the area makes a significant contribution to the gross annual income of the tribal people (Krishnamoorthy *et al*., 2003; Batabyal *et al*., 2011; Singh *et al*., 2008).

*Gross annual income* :

Of the respondents interviewed, a sizeable

| Table 4 : Farm power, farm implements, livestock possession and material possession of the tribal people in the sample villages | | | | | | | (n=164) |
|---|---|---|---|---|---|---|---|
| Farm power | | Farm implements | | Livestock possession | | Material possession | |
| Category | Household | Category | Household | Category | Household | Category | Household |
| No bullock | 28 (17.07) | Low (Score below 7) | 48 (29.27) | No livestock | 02 (1.22) | Low (Score below 6) | 51 (31.10) |
| 1-2 bullocks | 106 (64.63) | Medium (Score 7 to 12) | 81 (49.39) | Upto 5 livestock | 23 (14.02) | Medium (Score 6 to 10) | 79 (48.17) |
| 3-4 bullocks | 23 (14.03) | High (Score above 12) | 35 (21.34) | 6 to 10 livestock | 120 (73.17) | High (Score above 10) | 34 (20.73) |
| 5-6 bullocks | 07 (4.27) | - | - | > 10 livestock | 19 (11.59) | - | - |
| M.S. = 1.06, S.D.= 0.69 | | M.S. = 9.92, S.D.= 3.80 | | M.S.=1.95, S.D.= 0.55 | | M.S. = 8.04, S.D.= 3.27 | |

M.S.= Mean score,      S.D.= Standard deviation,      Figures in the parentheses indicate percentages

percentage (45.73%) belonged to low income category, followed by medium income (25.61%), very low income (19.51%) and high income (9.15%) (Table 5). The mean score (2.24) establishes the preponderance of families having low gross annual income ranging between Rs. 15001 to 30000/ annum in the study area. The probable reasons for this might be that majority of the respondents are either farmer having small sized land holding or wage labourer (Krishnamoorthy *et al.*, 2003). Low agricultural production due to lack of irrigation facilities, scientific know-how, improved equipments and machinery, mono-cropping system, low fertility of land and erratic climatic condition accrue paltry income to the farmers (Bezbaruah, 2004). Similarly, majority of the wage labourers are unskilled, they are not getting consistent income due to irregular employment and underpayment (Kumar *et al.,* 2010).

**Demographic characteristics of the tribal people :**

The total population in the sample households is 881, of which 374 (42.45%) are male, 377 (42.79%) are female and rest 130 (14.76%) are children. The average size of households is 5.37 and the sex ratio is 1008.02. Of the total labour force of 751 (49.81% male and 50.19% female), the work force is 413 (50.39% male and 49.61% female) and unemployment is 338 (49.11% male and 50.89% female). The percentage of work force to labour force constituted around 55.62 per cent and 54.38 per cent among male and female (Table 6).

The average household size of surveyed population at 5.37 is slightly higher than that of household size of tribal people in India (5.2) while it is equal to average household size at national level (5.3) (Census of India, 2001). This is perhaps indicative of growing nuclearization of families in the society in the study area. The sex ratio of the studied population (1008.02) is much higher compared to the sex ratio of all India tribal population (980) and over all India population (933) (Census of India, 2001). The preponderance of females over males could be attributed to the fact that the females in the society are given due honour and the social, ethical and cultural values protect their interest. The above variation is quite in accordance with Mahapatro *et al.* (1999). The problem of unemployment is very acute amid the surveyed households. The continuous unemployment causes poverty, diminishes the standard of living and ruins dignity and lives among the rural populace. Hence, there is an urgent need to generate sufficient employment opportunities for unemployed and under-employed people in the sample villages.

**Conclusion :**

The study signified that despite inhabiting in resource rich areas, the tribal people are in underprivileged position in all respects as reflected by their low socio-personal and economic status and poor employment opportunities. The prevailing scenario led to the repercussions like acute poverty, malnutrition, migration, substandard life quality, debt, unrest, naxalism, isolation from national mainstream, lack of awareness and exposure, traditional severity etc. The forests play a central role in the economic, cultural and socio-political systems and the entire lives and livelihoods of a majority of the tribal people in the area. The forest

| Table 5 : Income from forest resources and gross annual income of the tribal people in the sample villages | | | (n=164) |
|---|---|---|---|
| Income from forest resources | | Gross annual income | |
| Category | Household | Category | Household |
| Up to Rs. 4000/ annum | 40 (24.39) | Very low income (Upto Rs. 15000/ annum) | 32 (19.51) |
| Rs. 4001 to 8000/ annum | 58 (35.37) | Low income (Rs. 15001 to 30000/ annum) | 75 (45.73) |
| Rs. 8001 to 16000/ annum | 44 (26.83) | Medium income (Rs. 30001 to 60000/ annum) | 42 (25.61) |
| Above Rs. 16000/ annum | 22 (13.41) | High income (Above Rs. 60000/ annum) | 15 (9.15) |
| M.S.= 2.29, S.D.= 0.98 | | M.S.= 2.24, S.D.= 0.87 | |

M.S.= Mean score,  S.D.= Standard deviation,  Figures in the parentheses indicate percentages

| Table 6 : Demographic characteristics of the tribal people in the sample villages | | | | | | | | | | (n=164) |
|---|---|---|---|---|---|---|---|---|---|---|
| Population (no.) | | | | Sex ratio | Labour force | | Work force | | Unemployed | |
| Male | Female | Children | Total | | Male | Female | Male | Female | Male | Female |
| 374 | 377 | 130 | 881 | 1008.02 | 374 | 377 | 208 | 205 | 166 | 172 |
| (42.45) | (42.79) | (14.76) | (20.00) | | (49.81) | (50.19) | (50.39) | (49.61) | (49.11) | (50.89) |

Figures in the parentheses indicate percentages

based livelihoods mainly revolve around collection, processing and utilization/ selling of various forest resources throughout the year as the natural heritage supports huge richness and diversity of forest resources in the area. Hence, the livelihood diversification using existing forest resources should be given topmost priority as important strategy of poverty reduction and socio-economic upliftment of backward tribal people in the area.

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