

Livelihood, Poverty and Multiple Deprivation among Tribals in Odisha

Dr. Siba Prasad Pothal

Principal, TMSS Women's Degree College, Hyderabad, Telangana

Email: siba.pothal@gmail.com

Abstract

The present study seeks to examine the livelihood pattern, incidence of poverty and multiple deprivation among the tribal communities or Scheduled Tribes (STs) of Odisha by using secondary data collected from the various rounds of the National Sample Survey (NSS), Census of India reports, District Level Household and Facility Survey (DLFS) reports, etc. It evaluates the contributions of the different sources of livelihood on level of living, quality of life and economic well-being of the tribals. Methodologically, the study employs the Foster, Greer and Thorbecke (FGT) class of poverty measures to examine the incidence and magnitude of poverty among the tribals. It finds a strong relationship between livelihood pattern and poverty among them. Though there has been a decline in the incidence of poverty (head count ratio) among the tribals over a period of time, the rate of decline has been slower among the tribal communities than the other social classes. The tribals are confronted with low levels of income and higher levels of poverty due to their subsistence level of livelihood. Most of them are engaged in low-paid works, and suffer from chronic poverty and multiple deprivation. Finally, the study concludes with suggestions on how potential policy options can improve the livelihood condition of the tribals and redress the problem of heavy incidence of poverty among them.

Keywords: Social Exclusion, Livelihood, Deprivation, Incidence of Poverty, Quality of Life

Date of Submission: 26-08-2024

Date of Acceptance: 05-09-2024

I. Introduction

In light of the debate over how to best address the problems of persistent poverty and inequality in developing countries and among the disadvantaged and marginalized sections of the society, theories on livelihood have increasingly begun to come into the forefront over the past three decades (Krantz, 2001; Li et al., 2021; Miani et al., 2023; Morse & McNamara, 2013; Scoones, 1998). Conceptually, a 'livelihood' comprises the activities, means, assets (including both material and social), capabilities and entitlements by which people secure the basic necessities of life in a dignified and judicious manner. It is the way in which people access and mobilise resources that enable them to pursue goals necessary for their survival and long-term well-being (Young et al., 2001). However, a livelihood is said to be sustainable when it can cope up with and recover from stresses and shocks (such as economic or social turmoil and natural disasters) and uphold or augment its capabilities and assets without impacting negatively the natural environment or resource base and the future living (Ashley & Carney, 1999; Chambers & Conway, 1991; Serrat, 2017).

The concept of sustainable livelihood was developed as a strategy to contain socio-economic and environmental considerations in a cohesive and policy-relevant structure for poverty reduction, improvement in level of living and quality of life, and long-term ecological and economic sustainability (Krantz, 2001, as cited in Asare et al., 2024). In a sustainable livelihood framework that covers research relating to poverty alleviation, livelihood strategies and sustainability; a livelihood can be best explained by taking into cognizance the human, physical, natural, financial and social assets or capital endowments that are critical to the survival of people (Ellis, 2000; Mutenje et al., 2010; Scoones, 1998). Human assets encompass the knowledge, education, skills and good health required to pursue different livelihood strategies for achieving livelihood objectives (DFID, 2000). Physical assets include tools, equipment, land, buildings, livestock, etc., that help turn raw materials into finished products. Availability of physical assets enhances productivity and facilitates livelihood diversification. Natural assets comprise natural resource stocks such as forests, water resources, land, etc., which are used by people to make their livelihoods. Financial assets include income, savings, access to credit, etc. Such assets comprise the stocks held in various forms such as cash, bank deposits, livestock and gold/jewellery. Social assets include social networks, institutions and associations to which people belong. These assets comprise relationships of trust and reciprocity that facilitate cooperation and provide informal safety nets among people. All these five core livelihood assets or capitals are intrinsically interlinked and perhaps it may be assumed that a

single asset cannot sufficiently achieve the livelihood objectives of people, particularly in the context of the marginalized or vulnerable sections of the society. Therefore, an effective livelihood approach focuses on the mobilization of a variety of assets or capitals to ensure the livelihood goals of people, and encompasses the actions taken by the people within their capacity and capitals (resources) to make a living. Livelihood strategies are the sequence of activities and choices made by people in order to attain their livelihood objectives. These strategies keep on changing depending on the asset portfolios, economic or social upheavals, and the plans, policies and programmes of the government and non-governmental organizations.

When the theoretical framework of the livelihood strategies and decisions is examined in the context of the rural and underdeveloped people particularly of the tribal communities (Scheduled Tribes or STs) in India, it becomes evident that the livelihood patterns of these people are mostly influenced by the various factors including their access to and control over several livelihood resources, natural habitats, topography, culture, tradition and social institutions. Agriculture, collection of forest products, hunting, and different forms of employment in mining, manufacturing and retail trade are among their main sources of livelihood; and forest, river, land, traditional knowledge and culture are among their major livelihood assets or capitals. Their livelihood pattern is mostly inherited where they take up a livelihood (such as cultivation, artisanal work, etc.) which has been passed on in the family from generation to generation. Though agriculture continues to remain a prime source of their livelihood, part of the tribal populace is now diversifying into different non-farm activities for attainment of a sustainable livelihood.

Many livelihood projects of various organizations in India are being implemented to mobilize the poor people socially and economically to form their own institutions, with a view that the investment in creating such (decentralized) institutional platforms 'of the poor' and 'for the poor' is a key to sustainable poverty reduction in backward areas. These livelihood intervention projects focus on direct transfer of resources to the local level, where the communities or the functionally effective and self-managed institutions have a substantial degree of freedom with regard to particular livelihood activities in which they invest. These projects adopt different approaches for social inclusion, with particular focus on more vulnerable sections like STs, Scheduled Castes (SCs), particularly vulnerable tribal groups, migrant labour and isolated communities. Several other rural livelihood projects also have targets including the increase in income of the poor, reduction in vulnerability, more sustainable use of natural resources, creation of inclusive financial services to bridge the credit gap for the poor, productivity enhancement, and improvement in quality of life and well-being.

Despite all these efforts, majority of the STs and SCs in the country are below the official poverty line, and they are the worst sufferers of rural poverty. Many tribals have yet to feel the benefits of the recent impressive rates of economic growth and very little economic benefit has so far trickled down to them in the form of livelihood opportunities. The eastern Indian state of Odisha (formerly known as Orissa) is a case in point, where the march of development has different types of impact on different sections of the people. The STs and SCs are the great sufferers in this process. All the tribal dominated regions of the state have not shared the gains of development in an equitable manner due to several economic, social and institutional obstacles. Different livelihood development programmes have been implemented in the state for the tribal people in order to increase their income and consumption pattern. Though these programmes have generated some positive results, they are not commensurate with the needs of the target groups.

In this context, the following important researchable issues are being focused in the present study.

- i) What is the level of livelihood pattern and sustainability among the tribal communities in Odisha?
- ii) How do the tribals pursue their livelihoods with limited capacities and resources, and diversify their livelihoods?
- iii) What could be the livelihood structure and strategies of the tribals for income security, poverty alleviation and economic well-being?

II. Objectives

The specific objectives of the present study are:

- i) To examine the livelihood structure of the tribals in Odisha and to identify the level of their livelihood sustainability;
- ii) To examine the association between livelihood pattern and incidence of poverty among the tribals by estimating the FGT (Foster, Greer and Thorbecke) class of poverty measures; and
- iii) To analyse the multiple deprivations suffered by the tribal communities in the context of their livelihood pattern.

III. Methodology

Data

The present study is based on secondary data collected from the various sources such as the different rounds of the National Sample Survey (NSS), Census of India reports, District Level Household and Facility Survey

(DLFS) reports, Human Development Reports, etc. The study also uses data from the literature, scholarly published research studies, and other published and unpublished secondary sources of data.

Method of Estimation of Poverty

In this study, poverty measures like head count ratio (which measures the incidence of poverty), poverty gap ratio (which measures the depth of poverty) and squared poverty gap ratio (which measures the severity of poverty) have been calculated using the following formula suggested by Foster, Greer and Thorbecke (FGT) in 1984.

$$FGT(\alpha) = P_{\alpha} = \frac{1}{n} \sum_{i=1}^m \left[\frac{z - y_i}{z} \right]^{\alpha}$$

where, 'n' is the number of people in the sample population, 'm' is the number of people below poverty line, 'y_i' is the income of the poor individual 'i' and 'z' is the poverty line (income). Values of $\alpha = 0, 1$ and 2 give us the head count ratio, poverty gap ratio and squared poverty gap ratio (also known as FGT ratio), respectively.

IV. Livelihood and Employment Pattern of Tribals in Odisha

Odisha occupies an important position in the tribal map of India for having the largest number of culturally-unique tribes (as many as 62 tribes) among all the states and union territories of the country. The ST population of this state is 9.59 million, constituting nearly 22.85 per cent of the total state population and 9.2 per cent of the total tribal population of the country (Census of India, 2011). The tribes living in different parts of Odisha are located at varied stages of socio-cultural orientation and economic development, with different degrees of exposure to modernity and social change. The tribal economy of the state is by and large a non-specialized and 'consumption-subsistence type' economy. Livelihood structure of the tribals is closely associated with the ecological factors and habitats which they dwell in. The work participation rate (WPR) among the tribals is observed to be relatively higher than that of the other social classes, indicating the existence of higher level of multidimensional poverty among the tribals for which they are pushed into some remunerative activities for their survival rather than having enough access to economic opportunities.

Agriculture and Livelihood Security

Agriculture is the most viable livelihood option for majority of the tribals followed by collection of forest products, liquor brewing and selling, employment in mining and manufacturing, and petty trade. The outputs of these activities are usually in the form of food grains, food items (fish, meat, vegetables, milk, fruits, etc.), fuel wood, wood for building house, and cash earned by selling different goods (farm products, animal products, liquor, forest collection products, etc.) and performing wage labor (farm and non-farm labor). As per the Census of India 2011, 48.87 per cent of the total ST workers are main workers and the rest are marginal workers. Cultivators account for about 40.4 per cent and agricultural labourers 32.5 per cent of the total main workers. Most of the tribal cultivators are marginal and small farmers or share croppers.

The tribal communities follow the traditional cultivation practices which is mainly labour-intensive with low inputs and minimum usage of modern techniques of production. Consequently, the agricultural output in the tribal-dominated areas is lower than that in other areas of the state. However, though the traditional mode of cultivation is considered as subsistence agriculture since most of the crops produced are consumed at the household level, it provides a stable and sustainable yield to the tribals.

Cropping Pattern

According to the Agricultural Census 2015-16, the average size of the ST operational holdings (in hectare) is 1.05 compared to that of 0.74 for SCs. Land utilization status of the STs shows that out of the total operated area of 15,38,019 hectares, 99.41 per cent (15,29,000 hectares) land is cultivated. As subsistence farmers, majority of tribals earn a living off growing cereals such as paddy and millets. They cultivate cereals on 86.21 per cent of their gross cropped area while the SCs and the other communities (other than STs and SCs) cultivate cereals on 81.66 per cent and 80.25 per cent of their gross cropped area, respectively (Table 1). Among the cereals, the tribals mostly grow dry land crops due to lack of irrigation infrastructure, and low fertility and moisture-retaining capacity of the land. They cultivate paddy on 79.65 per cent of the gross cropped area while the SCs and the other communities grow it on 79.10 per cent and 78.91 per cent of their gross cropped area, respectively. The tribals grow food crops on 96.32 per cent of their gross cropped area while the SCs and other communities grow food crops on 97.14 per cent and 97.43 per cent of their gross cropped area, respectively. The tribals grow food crops primarily for self-consumption and they sell very little surplus in the market to purchase other essential items like clothing, soap, footwear, medicine, edible oil, etc.

Table 1. Percentage of Cropped Area of Different Crops to Gross Cropped Area under Social Groups (2015-16)

Social Groups	Total Cereals	Total Pulses	Total Vegetables	Total Spices & Condiments	Total Fruits	Sugar cane	Total Food Crops**	Total Non-Food Crops	Gross Cropped Area (in Lakh Ha.)
STs	13.81 (86.21%)	1.15 (7.18%)	0.21 (1.31%)	0.05 (0.31%)	0.20 (1.25%)	0.01 (0.06%)	15.43 (96.32%)	0.59 (3.68%)	16.02 (100%)
SCs	5.43 (81.66%)	0.90 (13.53%)	0.09 (1.35%)	0.01 (0.15%)	0.02 (0.30%)	0.01 (0.15%)	6.46 (97.14%)	0.19 (2.86%)	6.65 (100%)
Others*	23.40 (80.25%)	4.19 (14.37%)	0.42 (1.44%)	0.02 (0.07%)	0.31 (1.06%)	0.07 (0.24%)	28.41 (97.43%)	0.75 (2.57%)	29.16 (100%)
All Social Groups	42.64 (82.27%)	6.24 (12.04%)	0.72 (1.39%)	0.08 (0.16%)	0.53 (1.02%)	0.09 (0.17%)	50.30 (97.05%)	1.53 (2.95%)	51.83 (100%)

* Others also include institutional holdings.

** Total food crops include total cereals, total pulses, total vegetables, total spices and condiments, total fruits, and sugar cane.

Source: Agricultural Census, 2015-16.

Shifting Cultivation

Shifting or rotational cultivation¹ (commonly known as ‘Podu’ cultivation in Odisha) is extensively practiced by the tribals in a wide range of hill slopes. This method of cultivation is usually practiced in districts such as Koraput, Kalahandi and Kandhamal, and a few other districts of south and west Odisha. About 5,200 sq. km. of land in the state is cultivated using this method every year. The tribes such as Bonda, Kondh, Koya, Dongaria Kondh, Godaba, Paraja, Didayi, Lanjia Saura, Paudi Bhuyan, etc., practice this ‘slash and burn’ form of cultivation. Although it has been declared unlawful in recent times, the insidious practice of shifting cultivation still exists.

Settled Agriculture

Several large tribes including Santal, Kondh, Gond, Munda, Bhumij, Oraon, etc., are settled agriculturists and horticulturists having their own land. They prefer to cultivate traditional crops on the settled lands. Several studies have also revealed that many tribals in the state have very limited land holding and they mostly do settled agriculture in the community lands. In certain hilly areas, the tribes including Saora, Kondh and Gadaba practice terrace farming by building terraces on the slopes of hill with water streams. In many instances, settled agriculture is carried out on the lower hill slopes which are generally not included in the irrigation schemes of the government. In order to discourage the practice of shifting cultivation, the state government has attempted to divert many primitive tribes to settled agriculture by providing cultivable land and necessary inputs. Apart from these, livestock production is also among the main sources of tribal livelihood.

Forest-based Livelihood

Dependence on forest resources is a main source of livelihood and food security for a large number of tribal households in Odisha and there are variations in the pattern of dependence on forest products across the different regions of the state. Forest resources contribute to the satisfaction of construction, agricultural, energy, nutritional, medicinal and income needs of a majority of the tribal households in the state. Such resources also assist the tribals in meeting their social, cultural, ecological, traditional, religious, political and ethical aspirations. The entire life style of many tribes including Birhor, Hill Kharia, Mankidi and Mankidia revolves round the forests.

The forest-based livelihood among the tribals includes collection of minor forest products (MFPs) or non-timber forest products (NTFPs) for domestic and commercial purposes. The NTFPs include fruits and nuts, vegetables, medicinal plants, edible leaves, seeds, flowers, Kendu leaf, Sal leaf, and a variety of barks and fibres such as bamboo, rattans and a host of other palms and grasses. The collection of NTFPs is seasonal in nature. Collection of Kendu leaves is one of the most important activities of the tribals as Kendu leaves have a high economic value because of their use in rolling ‘bidi’ (local cigarettes). The tribals get some earnings by selling Kendu leaves when there is a shortage of employment opportunities in the lean summer season. They also collect fish, crab and meat from hunting. The general pattern is that there is more dependence on forests among the shifting cultivators, pastoralists and hunter-gatherers, and least among the settled agriculturists. Moreover, the dependence of tribals on collection of NTFPs has increased over the years due to decreasing size of land holding and fluctuations in agricultural production. Erratic rainfalls, intermittent spell of droughts, low level of soil fertility, high input costs and decrease in the size of average holding owing to population growth, division of tribal families and agricultural holdings have all resulted in severe fluctuations in the annual crop yields, leading to excessive dependence on the forest resources to cope up with food and income insecurity.

However, the tribals, of late, face severe problems in collection and sale of NTFPs due to the introduction of strict regulations by the government to protect the forests. Apart from government regulations, the non-STs are also creating problems for the tribals by encroaching upon their forest areas. The existence of such multiple categories of users has resulted in an increase in the commercial use of forests which, to a great extent, has not only reduced the density of forests but has also limited the access of the tribals to such resources.

Other Livelihood Activities

With the decline in output from forest resources as well as from shifting cultivation, tribals are increasingly depending on seasonal wage labour, both as agricultural and unskilled construction workers. But the wage income is found to be irregular because employment outside agricultural sector is not ensured and quite uncertain. The tribals are also getting their income from other sources which include income from services and petty trade. For instance, the Koya which mainly inhabits the Malkangiri district is a pastoral and cattle-breeder community. Mahali and Lohara tribes practise crafts like basketry and black-smithy, respectively. Of late, both the tribes are facing the problem of scarcity of raw materials. They are not able to compete with others, particularly in the tribal markets where goods of other communities are also sold, mainly due to production with their primitive technology. Being illiterate and backward, they are unable to deal with the outer world and fall easy prey to exploitation by non-tribal traders.

The process of industrial urbanization in the tribal areas has been accelerated through establishment of industries and operation of mines. A substantial number of the tribal population has moved to mining, industrial and urban areas in order to earn a secured living primarily through wage labour and relieve pressure from their limited land and other resources. Several tribal villages have also been displaced in the process of industrialization and mining operations. Consequently, a number of displaced tribals have become industrial nomads and lost their traditional occupation, houses, agricultural land and other immovable assets.

V. Tribal Livelihood and Poverty

Because of the multi-dimensional nature of poverty, an analysis of magnitude of poverty from a livelihood point of view has received considerable attention during the last few decades in order to understand the quality of life and level of living of different sections of people (Pothal, 2017). The livelihood approach provides a more comprehensive framework to conceptualise poverty and understand the complexities of survival among the low income groups (Ellis, 2000). In this context, poverty among the tribals can be best understood by analyzing the impact of their livelihood pattern on their level of living, well-being and poverty.

Poverty is the outcome of the interactions of social, economic and political processes in an unfavourable way which creates social exclusion and multiple deprivations. The tribals in Odisha are confronted with low levels of income and higher levels of poverty due to their subsistence level of livelihood patterns. Low agricultural production, use of primitive technology, decline in output from forest resources, unsustainable utilization of forest resources, low-paid seasonal wage jobs, etc., translate to low per capita income and poor quality of life. Chronic poverty is disproportionately high among the ST and the SC communities, indicating wide disparities in the incidence, depth and severity of poverty among these social groups in Odisha. The tribal communities are poorer than other social groups and are at the bottom on various indicators of development, including consumption and poverty (de Haan & Dubey, 2005). Most of the tribals in Odisha are generally stricken with absolute poverty. Poverty is still extremely high in the southern part of the state (Panda et al., 2006) where concentration of tribal population is high. This indicates that the deprivation of tribals may be caused by their location also.

Incidence of Poverty in Odisha

Odisha has become a cramped victim of chronic poverty and vulnerable human development for many years. In spite of a number of welfare programmes and schemes, 29.35 per cent of the state's population is multi-dimensionally poor (NITI Aayog, 2023). According to the NITI Aayog's National Multidimensional Poverty Index (MPI) 2021 report, poverty index in almost half of the districts of the state is alarming as the ratio scored by the districts is more than the state average. One in every two persons in the tribal-dominated districts like Malkangiri, Koraput and Nabarangpur is below poverty line while districts like Kalahandi, Rayagada, Mayurbhanj, Kandhamal and Keonjhar present a similar picture.

According to the estimates on the basis of the Tendulkar Committee methodology², poverty in Odisha declined by 26.51 percentage points from 59.10 per cent in 1993-94 (50th round of NSS) to 32.59 per cent in 2011-12 (68th round of NSS). Poverty also declined in all NSS regions and for all social classes of the state including STs, SCs, OBCs and others during this period. However, the extent of poverty among the STs and the SCs is still high and it remains a matter of serious concern (Table 2).

Table 2. Poverty in Odisha and India* (Head Count Ratio, in per cent terms)

Year	NSS Round	Reference Period	Odisha			All India		
			Rural	Urban	Total	Rural	Urban	Total
1993-94	50 th	MRP	63.00	34.50	59.10	50.10	30.80	45.30
2004-05	61 st	MRP	60.80	37.60	57.20	41.80	25.70	37.20
2009-10	66 th	MRP	39.20	25.90	37.00	33.80	20.90	29.80
2011-12	68 th	MRP	35.69	17.29	32.59	25.70	13.70	21.92

Note: MRP denotes Mixed Recall Period.

* Based on Tendulkar Committee methodology.

Source: Directorate of Economics and Statistics, Govt. of Odisha.

Incidence of Poverty among Social Classes in Odisha

There are several important measures for estimating poverty. Three standard measures of poverty are head count ratio (HCR), poverty gap ratio (PGR) and squared poverty gap ratio (SPGR).³ The figures in Table 3 indicate that the incidence of poverty (HCR) in 2011-12 (NSS 68th consumer expenditure survey [CES] round) is much higher among the ST and the SC households as compared to the other caste households in Odisha. The incidence of poverty is the highest (63.52 per cent) for the ST households followed by the SC households (41.39 per cent) and other caste households (21.03 per cent) in rural Odisha during 2011-12. Similarly, the incidence of poverty is the highest (39.69 per cent) for the ST households followed by the SC households (26.32 per cent) and other caste households (12.57 per cent) in urban Odisha. The incidence of poverty for the ST households (in both rural and urban areas) is much higher than the overall incidence of poverty in the state (35.69 per cent) during 2011-12.

Table 3. Social Class Poverty in Odisha in 2011-12* (HCR, PGR and SGPR in per cent terms)

Social Group	Rural			Urban		
	HCR	PGR	SGPR	HCR	PGR	SGPR
ST	63.52	14.43	4.62	39.69	8.24	2.38
SC	41.39	8.24	2.29	26.32	4.81	1.41
OC	21.03	3.23	0.77	12.57	2.21	0.55

*Based on Tendulkar Committee methodology.

Source: Directorate of Economics and Statistics, Government of Odisha.

Poverty patterns are very much related to social differentiation. The aggregate poverty ratio hides significant differences in the poverty ratio among the social classes (ST, SC and Other). Majority of the tribals in the state are living in conditions of abject poverty devoid of any meaningful living conditions. Their traditional livelihood practices have a little role to play in the prevention of chronic poverty among them.

VI. Tribal Poverty and Multiple Deprivation

The multiple deprivation among the tribals of Odisha are generally attributed to their multidimensional poverty and livelihood insecurity. The human development indices (HDIs) of the tribals continue to be much lower than the rest of the population in terms of all quality of life parameters, such as education, health, nutrition, consumption pattern, sanitation and housing condition, etc. Moreover, the multiple deprivation suffered by these socially and economically marginalized sections make them harder to escape from the generational poverty. This section briefly examines the effects of the livelihood systems of tribals with a multi-dimensional approach.

Health Status

Health status of a population can be analysed through important indicators such as infant, neonatal, child and maternal mortality rates. There exist very high infant, child and maternal mortality rates in the tribal areas of Odisha (Pothal et al., 2018), indicating the fatal synergy between insufficient dietary intake and unhealthy environments (NFHS – 4 and NFHS – 5). An analysis of the National Family Health Survey-5 or NFHS-5 (2019-21) results depicts that the infant mortality rate (IMR) was 55.9 (per 1,000 live births) for STs compared to that of 36.0 for SCs and 27.2 for others in Odisha during the five-year period preceding the survey (Table 4). At the national level, on the other hand, the IMR for the STs was found to be 41.6 during the same time period. Hence, the IMR for the STs in Odisha is much higher than those at the all-India level. The neonatal mortality rate (NNMR) for the STs was 41.6 compared to 27.0 for the state in 2019-21. The Table 4 shows that the neonatal, post-neonatal, infant, child and under-five mortality rates in Odisha are the highest for ST children

than for children belonging to other social classes. Moreover, according to the Sample Registration System (SRS), the maternal mortality rate (MMR) was also found to be very high at 119 per 1,00,000 live births in the state in 2018-20, compared to 97 at the national level.

Table 4. Neonatal, Post-neonatal, Infant, Child and Under-five Mortality Rates in Odisha in 2019-21

Social Group/ State	Neonatal Mortality	Post-neonatal Mortality*	Infant Mortality	Child Mortality	Under-five Mortality
Scheduled Tribe	41.6	14.3	55.9	10.9	66.2
Scheduled Caste	25.0	11.0	36.0	3.8	39.7
OBC	18.8	5.3	24.1	2.6	26.6
Others	21.0	6.2	27.2	1.2	28.3
Odisha	27.0	9.3	36.3	5.0	41.1

* Computed as the difference between the infant and neonatal mortality rates.

Source: NFHS-5 (2019-21), Ministry of Health and Family Welfare, Govt. of India.

The incidence of morbidity is high among the tribals in Odisha and they suffer illnesses of greater severity and duration. They suffer from high incidence and heavy burden of communicable, non-communicable and genetic diseases, resulting in high infant, child and maternal mortality rates. Their poor health status is directly linked with several key factors such as low level of income, malnutrition, absence of sanitary facilities, lack of access to health care services and illiteracy. Anaemia (low levels of haemoglobin in the blood) is a major health issue particularly among the tribal women and children in Odisha. It results in high maternal mortality, weakness, diminished physical and mental capacity, increased morbidity from infectious diseases, perinatal mortality, premature delivery, low birth weight, and (in children) impaired cognitive performance, motor development and scholastic achievement.

Food Intake and Nutritional Status

Malnutrition is one of the most serious and persistent problems in the tribal-dominated districts of the state. Malnutrition among the tribals is frequently part of a vicious cycle which includes poverty and disease (Pothal, 2017). A vast majority of the tribals in Odisha has limited choice to expand their food basket, mainly due to chronic poverty. Tribal infants, pre-school children, and pregnant and lactating women are the most vulnerable to malnourishment and malnutrition.

It is observed that the food intake of the tribals is deficient in quantity and quality. High level of food insecurity is clearly visible in the form of starvation deaths, higher mortality rate and undernutrition, especially among the STs of Odisha's Southern NSS region which includes the chronically backward KBK (Kalahandi-Balangir-Koraput) districts. Many tribals fail to consume sufficient energy, protein and micronutrients in their diet, which in turn leads to nutrition related problems characterized by stunting, wasting, underweight, undernutrition of children, low birth weight, lower body size of adults, anemia, and iron, Vitamin A and B deficiency. Micronutrient deficiency is a serious contributor to childhood morbidity and mortality. The magnitude of undernutrition is significantly high among preschool children in Integrated Tribal Development Agency (ITDA) areas of the state. High prevalence of nutritional deficiency and chronic energy deficiency (CED) are observed among the ST women. A substantially higher proportion of tribal women of the state are found to be underweight with BMI < 18.5 kg/m². The incidence of anaemia among tribal women is high compared to their counterparts in other social groups.

Housing Condition

Housing conditions of many tribals in the state are very poor, with poor ventilation and lighting and lack of basic household amenities like electricity, sanitation and safe drinking water facilities. Tribal houses require frequent repairs due to weak foundations, thatched roofing, and flooring with mud and cow dung. Bulk of the tribal houses does not have bathroom and toilet facilities in the housing premises, and separate kitchen. Due to lack of access to clean fuel, majority of tribal households use smoke-producing domestic fuel, such as fire-wood, crop residue and cow dung cake. This contributes significantly to the spread of airborne diseases such as tuberculosis and respiratory infections like pneumonia. The tribals also face difficulties in accessing the various housing schemes of the government mainly due to illiteracy and social exclusion. A less number of semi-pucca houses are seen in the tribal areas.

Sanitation, Hygiene and Safe Drinking Water

Access to proper sanitation, hygiene and safe drinking water is crucial to human health and well-being. According to the World Health Organisation (WHO), safe water, sanitation and hygiene (WASH approach) are not only the prerequisites to good health, but contribute to livelihoods, school attendance and dignity, and help

create resilient communities living in healthy environments. Most of the tribals in Odisha living in hilly terrain or forested areas suffer from poor household sanitation. Among all Indian states, Odisha is seen to be the lowest with only 7.1 per cent ST households against 22 per cent all households in having latrine facilities within the premises (Census of India, 2011). Many tribals defecate in the open. Fecal-oral-transmitted infections are common in tribal areas, leading to diseases like diarrhea and cholera. Only 3.4 per cent of the ST households in the state have bathing facility inside the household. Many tribal households do not have access to any form of drainage. Only 1.1 per cent of ST households in Odisha has waste water outlet connected to closed drainage.

Many tribal areas lack adequate supplies of safe drinking water. As per the Census of India 2011, only 6.2 per cent of the ST population in Odisha has safe drinking water facility within the premises. The tribal people fetch drinking water from hill springs, rivers and ponds. They generally rely on the same source of water for drinking purposes, bathing, scrubbing of cattle, washing clothes, etc. Such unsafe drinking water is responsible for the periodical spread of water-borne diseases like diarrhoea, dysentery, tape worm, guinea worm, cholera, etc.

Literacy and Education

Despite the special responsibilities taken by the central as well as the state government to promote literacy and education among the tribal communities, there has not been much tangible improvement in the literacy and education status of the great majority of the tribal population in Odisha. There are substantial social, regional and gender disparities in literacy rates in the state, and compared to other social groups, the tribals of the state fare the worst in literacy (Pothal & Panda, 2017).

According to the Census 2011, the tribal literacy rate in the state is 52.24 per cent which is considerably lower than that of the SCs (69.02 per cent) and the state average of 72.90 per cent. The female literacy rate is at a very low level of 41.20 per cent for the tribals as against 58.76 per cent for SCs and the state average of 64.01 per cent. However, an analysis of the Census data from 1961 depicts that the overall ST literacy rate has increased by 44.88 percentage points from 7.36 per cent in 1961 to 52.24 per cent in 2011 whereas the literacy rate for the total population has increased by 51.24 percentage points from 21.66 per cent in 1961 to 72.90 per cent in 2011. The increase in the ST literacy rate over the years was possible due to various government programmes such as the National Literacy Mission, the Sarva Siksha Abhiyan (SSA), the Right to Education (RTE) Act, establishment of special schools for tribal students, the Revised Long Term Action Plan (RLTAP) for the KBK districts of Odisha, etc. But despite such improvement in the ST literacy rate, the efforts to promote tribal education in the state fall far short of the specific educational needs of the tribals. Lack of general awareness, high incidence of illiteracy and low level of educational attainment among the tribals keep them underdeveloped through the ages.

VII. Livelihood/Employment Diversification and Coping Strategies

There is a strong relationship between poverty and livelihood diversification⁴ among the tribal communities. Diversification is a continuous adaptive process which helps households increase their income portfolio, minimize the risk and uncertainty, and improve their level of living and quality of life (Chambers & Conway, 1992; Davies, 1996). There is an increasing awareness that diversification has several positive characteristics for livelihood security and it is an effective strategy of coping with risk due to persistent low income. It is a core strategy of contemporary rural livelihood systems (Ellis, 2000).

The livelihood of the tribals who are heavily dependent on agriculture is unsustainable. Agricultural activities are subject to risks arising from climate change, occurrence of flood or drought, temperature fluctuations, market price fluctuations, etc. These factors not only jeopardize the livelihood and income of the tribals but also threaten the viability of the agricultural activities. This necessitates the creation of supplementary sources to raise the livelihood to a sustainable level. Additionally, lack of capital and credit facilities, decreased availability of arable land, environmental deterioration, infrastructure deficit, increased producer/consumer ratio in agriculture, lean season unemployment, etc., are other important drivers towards livelihood diversification by small and marginal farmers in tribal areas.

The tribal households in Odisha draw on multiple strategies to cope with the changing situation. Through diversification, they add new activities, maintain the changing livelihood portfolios and overcome uneven generation of assets caused due to seasonality. The land-based and forest-based livelihoods of the tribal households are increasingly becoming unsustainable because their land is no longer able to meet their food grain requirements, and there exist strict government regulations on the use of forest resources. Therefore, the livelihood pattern of the tribals is gradually moving towards diversified and modern market-oriented employment and economy. Such diversified livelihood strategies include various activities such as production of agricultural commodities, off-farm employment and formal sector employment or a combination of all these. However, workforce diversification as a desired path to development is observed to be weak in the tribal dominated areas of the state.

It is also observed that intensification of agricultural production or diversification of livelihood activities into non-farm activities are becoming contemporary mutually-inclusive livelihood strategies among the tribals. These two crucial adaptations of the tribal households to address the problem of traditional livelihood strategies and increase resilience to uncertainty can also include elements of both or shift from one to the other in different points in time. Agricultural intensification as a strategy for sustainable livelihoods usually gives priority to the increased production of agricultural commodities by using a greater amount of non-land resources (labor, capital, superior technology, etc.) for a given land area. Through several capacity-building programmes undertaken by the government and NGOs, tribal farmers, of late, are exposed to various modern agricultural practices. Poor tribal households are getting involved in activities on and off the farm, while non-poor tribal households diversify their livelihood within agriculture into livestock activities and production of high-value agricultural commodities. However, diversification into non-farm activities is often observed to be a dominant livelihood strategy of many tribal people in the state, and it may be temporary or permanent in nature depending upon the severity of the situation.

Increase in population, and focus on economic activities like mining and rapid industrialization in resource-rich tribal areas of Odisha have resulted in a reduction of both forest area and arable land, forcing the tribal communities to look for alternative sources of livelihood. Various government schemes and programmes such as the Mahatma Gandhi National Rural Employment Scheme (MGNREGS), National Rural Livelihood Mission, special employment generation programmes, skill training programmes, rural housing schemes, social pension schemes, supply of PDS rice at Re.1 for below poverty line households, education development programmes in rural areas, etc., have widened the scope of livelihood diversification by the tribals.

VIII. Conclusion and Recommendations

The concepts of livelihood strategy, workforce diversification and poverty reduction are central to development policies, programmes and practices in recent years. However, the fundamental inequalities in livelihood security particularly among the marginalized people such as tribals lead to impoverishment among them. Heavy incidence of poverty particularly among the tribals in Odisha is directly related to prevalence of unemployment and under-employment on a large scale. The livelihood of the tribal communities is complex in nature due to the practices and strategies involved in generating it. But the tribals in the state can confront vexations like heavy incidence of poverty, social exclusion, unemployment, illiteracy, starvation, etc., by securing gainful employment and sustained livelihoods.

The idea of adopting sustainable livelihoods approach in the process of poverty reduction and empowerment of people is all the more important in the present day context because the livelihood problem of the marginalized and vulnerable sections of the society has become more acute due to the sharp deterioration the natural resources and fall in agricultural income in rural areas. Moreover, the government support to these marginalized sections in the form of either direct subsidies or subsidized social services has been rigorously curtailed following the policies of economic liberalization.

The foregoing analysis in this study reveals that the livelihood pattern of the tribals in Odisha has been undergoing slow changes. Despite the measures undertaken so far to remove regional disparities and augment economic development of Odisha, only a fraction of the benefits have trickled down to the tribal population. Majority of the tribals in the state are still living in conditions of abject poverty devoid of any meaningful living conditions. They are forced to adopt several strategies, which enable them to survive without having better quality of life. The analysis of livelihood strategies of the tribals shows that the adoption of agriculture as a single livelihood option has been significantly declining over the years. Instead, the tribals of the state are adopting multiple livelihood strategies that include non-farm employment and migration along with agricultural activities.

The present study suggests that focusing on new livelihood options by the tribals could enable them to improve their production system and gain more economic values. Such kind of diversified livelihood practices may be seen as a good sign of livelihood sustainability and these practices could help them cope with and recover from unpredictable shocks (e.g. floods, draughts, earthquake, etc.) and long-term stresses (e.g. food deprivation, debt, seasonal shortages, chronic illness, etc.), and thereby minimise their vulnerability.

The Government must make serious attempts to organise new programmes and stimulate the already existing policies in order to enhance the livelihoods of the tribal people. To ensure sustainable livelihood among the tribals, skill formation and enhancement related policies could be very effective, and such policies can be re-designed as part of the basic education policy across all social classes and regions. However, it is observed that the ongoing skill development schemes of the government such as Pradhan Mantri Kaushal Vikas Yojana (PMKY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), etc., do not proactively include the tribal communities. Hence, steps must be taken to address such issues. Moreover, the tribal households in rural areas often face various social, economic, natural and familial complexities and threats which have negative effects on their livelihoods. Hence, the livelihood promotion efforts of the Government should ensure security of

livelihoods against such complexities and threats faced by the tribals. This requires the creation of a situation in which the disadvantaged tribal people could effectively cope with these threats and meet basic livelihood needs on a sustainable basis.

Further, the livelihood strategy of tribal households is basically shaped by their income and expenditure pattern, resource allocation choices and certain institutional factors. In order to reduce tribal poverty through appropriate interventions, it is imperative to have an understanding of the preferred livelihood diversification strategies of tribal communities and the extent to which these strategies are feasible. It is important to find out the flexibility and constraints with which the poor people build their lives and adapt their livelihoods in various dynamic ways.

Agriculture has remained a dominant livelihood strategy among the tribals of Odisha despite livelihood diversifications and the shift to manufacturing and tertiary activities. So, it becomes necessary to improve the production and productivity of tribal agriculture by providing them with improved agricultural inputs and through the expansion of irrigation facilities in tribal areas, provision of agricultural finance to poor farmers, restoration of the land alienated from the tribals, application of modern agrarian technology, etc.

Though migration as a coping mechanism has helped the tribals in diversifying their livelihood to a certain extent, it has exposed them to the risk of being exploited. Socio-cultural discrimination, escalating competition for limited work opportunities, costs involved in out-labour migration, identity-related problems in destination areas, lack of any social security support from source or destination areas/states, etc., are other major challenges. In this regard, more robust and contemporary institutional mechanisms are required to address such challenges, and protect and support the migrant workers. It is suggested that the SC/ST welfare department of the state government needs to work in coordination and convergence with the labour department to sharpen focus on issues related to tribal migration. Assistance can also be provided through the development programmes such as the skill development mission, Odisha Rural Livelihoods Programme (ORLP), MGNREGA, Odisha Tribal Empowerment and Livelihoods Programme (OTELP), etc., to prevent tribal migration. Effective steps must be taken both at source and destination levels to minimise distress of tribals and provide security to the tribal migrants. On the other hand, it is also important to facilitate the enhancement of the existing livelihood activities of the tribals at their places of origin and provide them gainful self-employment and wage employment opportunities while also allowing them to preserve their own way of life.

Tribal livelihood security cannot be ensured without taking cognizance of environmental protection and sustainability. Majority of tribal households in Odisha, especially in the Fifth Scheduled Areas, substantially depend on their surrounding natural environment and resources for their livelihoods. The income of the tribals from collection of forest products can be increased by raising the productivity of forests by plantation of degraded forest area, and by facilitating the tribal communities in collection of NTFPs and ensuring them a proper return for these products by organizing their marketing system. The present-day perspective on forest-based tribal livelihood is saddled between two important processes such as marginalisation (lack of entitlement to forest resources) and mainstreaming (transition from an agrarian to a non-farm urban and industrialised economy) with the issues related to livelihood diversification and poverty eradication. In such a situation, the central thrust is that a multi-pronged approach can be followed by judiciously calibrating opportunities and constraints in various forest-based and other livelihood options.

The Government must strengthen the forest-based livelihood options of the tribals by making favourable laws and policies. But, there is always a threat to the livelihood security of tribals in the absence of legal recognition of their customary forest rights. The progressive laws such as Panchayat (Extension to Scheduled Areas) Act (PESA) of 1996 and Forest Rights Act (FRA) of 2006, which were made to recognize rights over local natural resources and to give radical governance powers to the tribal communities, have not ensured de facto security of forest rights and tenure and decentralised forest governance for the tribals and other traditional forest dwellers. There exist multiple challenges with regard to implementation of such Acts in the state. It is suggested that the government should implement them in the right spirit in order to unlock the untapped development opportunities in tribal areas.

Notes

1. Under this form of agriculture, the cultivators clear part of the forest on hill slopes by burning it (usually before March) and later cropping (during April and May before the onset of the monsoon). They cultivate the same piece of land for some time and then abandon it when its soil becomes almost infertile. They then repeat the process on a new plot designated for shifting cultivation in the upcoming years.

2. The Tendulkar Committee revised the methodology for poverty estimation and recommended, among other things, two main departures from the previous methodologies. First, it has enlarged the consumption basket and, thus, increased the poverty lines for both rural and urban areas for which different consumption baskets have been suggested. The proportion of the rural poor estimated by using the poverty lines suggested by this Committee would be higher than those estimated by using the previous methodologies. Second, the

Committee recommended the use of the Mixed Recall Period (MRP) methodology over the Uniform Recall Period (URP) methodology for estimation of poverty. For details of Tendulkar Methodology, refer the Report of the Expert Group to Review the Methodology for Estimation of Poverty (2009), Planning Commission, Government of India.

3. The head count ratio (P0) measures the proportion of the population that is counted as poor. The poverty gap index (P1) is a measure that adds up the extent to which individuals on average fall below the poverty line (i.e. the depth of poverty), and expresses it as a percentage of the poverty line. The squared poverty gap (poverty severity) index (P2) averages the squares of the poverty gaps relative to the poverty line.

4. Livelihood diversification refers to the process by which rural households create a diverse portfolio of activities and social support capabilities in order to survive and to improve their standard of living (Ellis, 1998). This definition is based on the premise that livelihood is not just income, but it encompasses social institutions, gender relations and property rights required to support and sustain the standard of living (Sharma, 2010). Thus, livelihood diversification is not synonymous with income diversification. Livelihood includes access to, and benefits derived from various services provided by the state such as education, health services, electricity, sanitation, etc.

References

- [1]. Asare, K. Y., Mensah, J. V., Agyenim, J. B., & Tenkorang, E. Y. (2024). Sustainability of alternative livelihood strategies in selected sand mining communities in the Ga South Municipality and Gomoa East District of Ghana. *Cogent Social Sciences*, 10(1). <https://doi.org/10.1080/23311886.2024.2340436>
- [2]. Ashley, C., & Carney, D. (1999). *Sustainable livelihoods: Lessons from early experience*. London: UK Department for International Development (DFID).
- [3]. Chambers, R., & Conway, G. R. (1991). *Sustainable rural livelihoods: Practical concepts for the 21st century* (IDS Discussion Paper 296). Brighton: Institute of Development Studies. <https://www.ids.ac.uk/download.php?file=files/Dp296.pdf>
- [4]. Davies, S. (1996). *Adaptable livelihoods: Coping with food insecurity in the Malian Sahel*. Macmillan Press.
- [5]. de Haan, A., & Dubey, A. (2005). Poverty, disparities, or the development of underdevelopment in Orissa. *Economic and Political Weekly*, 40(22/23), 2321–2329.
- [6]. DFID. (2000). *Sustainable livelihoods guidance sheets (Numbers 1-8)*. London: UK Department for International Development.
- [7]. Ellis, F. (1998). Household strategies and rural livelihood diversification. *Journal of Development Studies*, 35(1), 1–38.
- [8]. Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289–302.
- [9]. Foster, J., Greer, J., & Thorbecke, E. (1984). A class of decomposable poverty measures. *Econometrica*, 52(3), 761–766.
- [10]. Government of India. (2009). *Report of the expert group to review the methodology for estimation of poverty*. Planning Commission.
- [11]. Government of India. (2020). *All India report on agriculture census 2015-16*. Department of Agriculture, Ministry of Agriculture and Farmers Welfare.
- [12]. Government of Odisha. (2023). *Economic Survey (different issues from 2003-04 to 2022-23)*. Directorate of Economics and Statistics, Planning and Coordination Department. Bhubaneswar.
- [13]. International Institute for Population Sciences (IIPS) and ICF. (2017). *National Family Health Survey (NFHS-4), 2015-16*. Mumbai: IIPS.
- [14]. International Institute of Population Sciences (IIPS) and ICF. (2021). *National Family Health Survey (NFHS-5), 2019-21*. Mumbai: IIPS.
- [15]. Krantz, L. (2001). *The sustainable livelihood approach to poverty reduction: An introduction*. Swedish International Development Cooperation Agency, Division for Policy and Socio-Economic Analysis. 1–38.
- [16]. Li, J., Li, S., Daily, G. C., & Feldman, M. W. (2021). *Rural livelihood: Theories and applications*. In: *Rural Livelihood and Environmental Sustainability in China*. Singapore: Palgrave Macmillan.
- [17]. Miani, A. M., Dehkordi, M. K., Siamian, N., Lassois, L., Tan, R., & Azadi, H. (2023). Toward sustainable rural livelihoods approach: Application of grounded theory in Ghazni province, Afghanistan. *Applied Geography*, 154, 1–13. <https://doi.org/10.1016/j.apgeog.2023.102915>.
- [18]. Morse, S., & McNamara, N. (2013). *The theory behind the sustainable livelihood approach*. In: *Sustainable Livelihood Approach*. Dordrecht: Springer.
- [19]. Mutenje, M. J., Ortmann, G. F., Ferrer, S. R. D., & Darroch, M. A. G. (2010). Rural livelihood diversity to manage economic shocks: Evidence from south-east Zimbabwe. *Agrekon*, 49(3), 338–357.
- [20]. National Nutrition Monitoring Bureau (NNMB). (2009). *Diet and nutritional status of tribal population and prevalence of hypertension among adults – Report on second repeat survey*. Hyderabad: National Institute of Nutrition (NIN).
- [21]. National Sample Survey Office. (2011). *Level and pattern of consumer expenditure: 2009-2010 (66th round)*. Ministry of Statistics and Programme Implementation. Government of India.
- [22]. National Sample Survey Office. (2014). *Household consumer expenditure: 2011-2012 (68th round)*. Ministry of Statistics and Programme Implementation. Government of India.
- [23]. NITI Aayog. (2023). *National multidimensional poverty index: A progress review 2023*. Government of India.
- [24]. Office of the Registrar General and Census Commissioner. (2011). *Census of India 2011*. Government of India.
- [25]. Panda, B. K., Sarangi, P., & Pothal, S. P. (2006). Level of living of the tribals in southern Orissa. *Adivasi*, 46(1), 33–48.
- [26]. Pothal, S. P. (2017). *Quality of life and level of living of tribals in Odisha* [Doctoral dissertation, Berhampur University].
- [27]. Pothal, S. P., & Panda, B. K. (2017). Status and determinants of literacy and education among tribals in Odisha. *ZENITH International Journal of Multidisciplinary Research*, 7(12), 63–77.
- [28]. Pothal, S. P., Behera, B. C., & Panda, B. K. (2018). Quality of life, social exclusion and chronic poverty among tribals in Odisha. *IASSI Quarterly: Contributions to Indian Social Science*, 37(1), 72–89.
- [29]. Scoones, I. (1998). *Sustainable rural livelihoods: A framework for analysis* (IDS Working Paper 72). Brighton: Institute of Development Studies.

- [30]. Serrat, O. (2017). The sustainable livelihoods approach. In: Knowledge Solutions. Singapore: Springer. https://doi.org/10.1007/978-981-10-0983-9_5
- [31]. Sharma, R. (2010). Diversification in rural livelihood strategies: A macro-level evidence from Jammu and Kashmir (CDS Working Papers No. 439). Trivandrum: Centre for Development Studies.
- [32]. The World Bank. (2008). World development report 2008: Agriculture for development. Washington, DC.
- [33]. Young, H., Jaspars, S., Brown, R., Frize, J., & Khogali, H. (2001). Food-security assessments in emergencies: A livelihoods approach (ODI HPN Network Paper 36). London: ODI.