

OCCUPATION PROSPECTS FOR TRIBALS OF SIMILIPAL BIOSPHERE RESERVE FOREST IN ODISHA: AN ASSESSMENT

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Abstract: *The present study analyzes various livelihood opportunities for forest dependent tribal, factors affecting livelihood, changing trends and policy interventions. The study has been conducted in four villages and hundred samples were collected from Similipal biosphere reserve, located in the tribal dominated Mayurbhanj district of Odisha state. Tribal people depending upon forests for their livelihood seem to be challenging from sustainability front. People practice diversified portfolios at the subsistence level. It is found that convergence of various Government sponsored schemes at the village level will play a crucial role in facilitating their access to the mainstream. Effort on increased use of technology and information on market intelligence is a must. Sustainable use of forest resources, harvesting of Non-Timber Forest Products (NTFP), imparting skill up gradation training, sensitization of the community by Government and private agencies are other essential factors for holistic development of tribal.*

Keywords: Reserve forest, Tribal, Occupation, NTFP, Similipal

Introduction

Tribal and Forests are inseparable. Since time immemorial tribal have been residing in the forest and hence forest is their primary source of livelihood. With growing population and increasing industrialization, the modern human lifestyle is changing rapidly. The growing pace of modernization and decreasing forest density have changed the dimensions and perspectives of livelihood of tribal around the globe. The situation is more critical in reserve forests and sanctuaries. Conservation of biodiversity vis-à-vis existence of tribal people in these restricted areas has become a moot point for academia, researchers and policy makers. Odisha is major tribal dominated state of India. Tribal constitute around 23 percent of the State population and 9.2 percent of country's population. Around 62 categories of tribes reside in the State. 72 percent of the Scheduled Tribes are under poverty line and in South Odisha, 87 percent of tribal population are living under Poverty line (Economic Survey of Odisha 2014-15). The tribal economy here is by large based on activities around the forest. Food gathering, hunting and fishing continue to be the main source of livelihood though some of the prominent tribes such as the Santals, Mundas and Gonds have become agriculturists. The Juang, Bhuyan, Bonda, Saura and Dharua tribes follow the shifting cultivation practice. The Koya tribal are cattle breeders while the Mohali and Lohara are simple artisans involved in basket-weaving and tool-making.

More than 1.6 billion people around the world depend on varying degrees on forests for their livelihoods – not just for food and fuel but for livestock grazing areas and medicine. At least 350 million people live inside or close to dense forests, largely dependent on these areas for livelihood and income, while about 60 million indigenous people are almost wholly dependent on forests (ISFR, 2011). People living in the forest fringe villages also depend on the forest for food, fodder, agriculture, housing, and an array of marketable minor forest produces which can potentially degrade forest if harvested unsustainably. They collect 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 leaf) for livestock and a range of marketable non-timber forest products. Thus, this increasing degradation of forest is hampering the basic human right to life and livelihood of the local communities, especially the indigenous community whose life is closely linked with the resources and

environment of forest. On the other hand, widespread poverty and lack of other income generating opportunities often make these people resort to over-exploitation of forest resources which can potentially degrade forest and affect climate change.

Forest degradation is a serious environmental, social and economic problem. FAO defines forest degradation as: The reduction of the capacity of a forest to provide goods and services. However, quantifying the scale of the problem is difficult, because forest degradation has many causes, occurs in different forms and with varying intensity, and is perceived differently by different stakeholders. India's current forest and tree cover is estimated to be 78.29 million ha, constituting 23.81 percent of the geographical area of the country. Forest cover alone amounts to 69.20 million ha, against the recorded forest area of 76.95 million ha. Out of the total forest cover, 12.06 percent is very dense forest (more than 70 percent crown density), 46.35 percent is moderately dense forest (40 percent to 70 percent crown density), and the remaining 41.59 percent is open forest (10 to 40 percent crown density). Forest cover has declined by 367 sq. km compared to the forest cover in the preceding ISFR in 2009. Tree cover outside forest areas is assessed to be 9.7 million ha, and is experiencing an increase over the last few assessments, indicating a rise in green cover in non-forest land in the country (ISFR 2011).

Objective and Methodology

The objective of this study is to carry out an in-depth research and summarize baseline socio-economic information of the forest dependent households in the villages living in and outskirts of Simlipal Biosphere Reserve (Buffer and Fringe villages), to assess the situation and find scope of selecting suitable livelihood opportunities so that a framework for conservation based socio economic development plan for the communities could be developed. The specific objectives of the proposed study are:

- To study the socio-economic status of tribal community of the Similipal reserve forest of Odisha.
- To scrutinize the challenges faced by tribal in sustaining their livelihood in the study area.
- To explore suitable occupation prospects for the forest dwellers of the study area.

Similipal has been selected as study area which is located in Mayurbhanj district of Odisha. Area wise it is the second largest district of Odisha. It is also globally recognized for its beautiful "Similipal Biosphere Reserve". Four villages have been selected through purposive sampling. These four villages are Tulasibani, Tingiria, Brundiposi, Chadripahadi. The unit sample i.e. hundred (100) households have been selected on the basis of random sampling method.

Baseline data on various indicators or parameters like asset holding, use of assets, education, forest dependence, livelihood options, availability of credit and other financial services etc. has been collected for reference. A study to explore alternate livelihood opportunities would contribute in designing livelihood interventions and impact on livelihoods of the target community. The interview schedule was prepared which aimed specifically to collect the required information from the forest dwellers. The structure for focused group discussions, village profiling and resource mapping were also designed for amplifying community participation and getting insights about community problems and needs. Quantitative data was gathered by interview schedules. The data collected in the study includes household profiles, resource ownership, standards of living and livelihood priorities. Qualitative research was conducted through focused group discussions and village profiling with participation of the community. This method of gathering qualitative data was chosen because it uses participatory and targeted research methods to gather objective viewpoints of different groups within a certain society. The resource profiling of the area was also done by community participation, which helped in locating the resources like forests, watershed, other villages, markets etc. This helped us to establish the extent and locations of these resources, to analyze and understand them better.

Significance of the Study

The densely forested Similipal Biosphere and Tiger Reserve are recognized as an area of rich biodiversity and hotspot for a range of unique endemic species. Creation of a wildlife sanctuary or national park adversely affected the local people through dislocation, cessation of their rights and sources of livelihood. The poor and women are mostly affected as shown by several studies

under Environmental Justice. There are reportedly 57 villages within the sanctuary and several among those are treated as encroachments. For their livelihoods, the people are dependent on agriculture (those who have land), forest and other daily wage work. Lack of assured subsistence from either of these sources makes the tribal very vulnerable. In almost all tiger reserves of India, increasing human and cattle interference seems to be a serious issue for the park management. Population explosion and increasing demand over resources like fodder, fuel wood, NTFP, land etc. force them to depend on forests. Therefore, the study has been conducted to gauge the present status of the livelihood in the area so that the intervention that promotes conservation vis-à-vis providing alternate livelihood options could be designed for the communities. Moreover, this will greatly help in strategic planning and implementation of various development policies in future.

Results and Discussion

Based on the specified objectives, the findings of the study have been presented and discussed in this chapter under different sections.

Livelihood Pattern

The *first objective* of the study is to understand the livelihood pattern of tribal people in forest community of the Similipal. A livelihood portfolio mapping has been conducted for the 100 households in 4 villages, situated in the fringe area of the Similipal Biosphere Reserve to understand the livelihood portfolio of that area. The consolidated data says that the majority population of this area depends upon Wage labor and agricultural activities. Apart from this, people are also doing NTFP collection and animal husbandry to meet the needs of their livelihood. The average land holding is 1 acre. The livelihood profile of the area is highly diversified. A detailed livelihood portfolio mapping and chart of the area are given below. Major portion of the community (about 53 percent) earns its livelihood from daily wages that they get in the adjoining areas due to MGNREGS and non-MGNREGS activities. Most of the families own land but the production is largely for consumption only as we can see from the chart that in spite of having land, agriculture is the primary occupation of only 9.7 percent of the population and therefore agriculture does not contribute significantly to income generation or cash inflow for the family.

Daily wages are also very popular in the secondary occupation, because the agricultural productivity is very less due to the use of bad seeds and primitive agricultural practices. The people are only dependent on rain for irrigating their fields, which makes them extremely vulnerable. Due to these reasons, people often go for daily wages. The land was categorized into homestead, lowland, medium land, leased land and up land according to the local demarcation. About 20 percent of the population interviewed was landless and less than 2 percent cultivating more than 10 acres. As most of the villagers of Tulasibani, Tingiria, Chadripahadi and Brundiposi are marginal farmers and the production is usually for consumption purpose only, there are few major *crops* identified out of which paddy and maize were found to be sown by most of the farmers. Vegetables and other cash crops are sown by people in areas where irrigation facilities are available. Poultry is the most dominant livestock in the area. Cows and buffalos are not milked; people keep cows to have strong bullocks and milk of cow is left for the calf only therefore the percentage of dry cows/buffalo is much higher than milked cattle (1.6 percent). Poultry constitutes about 65 percent of the total livestock, but the income generated from goat rearing and bullock selling is much more than the poultry. This shows the profitability of these livestock practices. The contribution of goat in the total animal husbandry business is about 92 percent while it is 69 percent for bullock and only 65 percent for poultry. This shows bullock trade is the most profitable animal husbandry business in the area.

Wood is primary fuel source for household power to these communities. Kerosene is used only for lighting the lamps at nights. Other sources like LPG, Solar Cookers etc. were not seen in any of the 34 villages visited. Although it is illegal to cut trees in the reserve forests but there is no other option available in the forests for the villagers. Most of the wood collected or cut is for self-consumption only. If we take the total dependency of people on forest as 100 percent, then fuel wood will be around 90 percent, for Sal leaf it will be around 8 percent and rest about 2 percent will be for other products like Mahua flowers and seeds, etc. Sal is the dominant tree variety found in the area and production of dona, pattal (bowls and plates) made by stitching Sal leaves

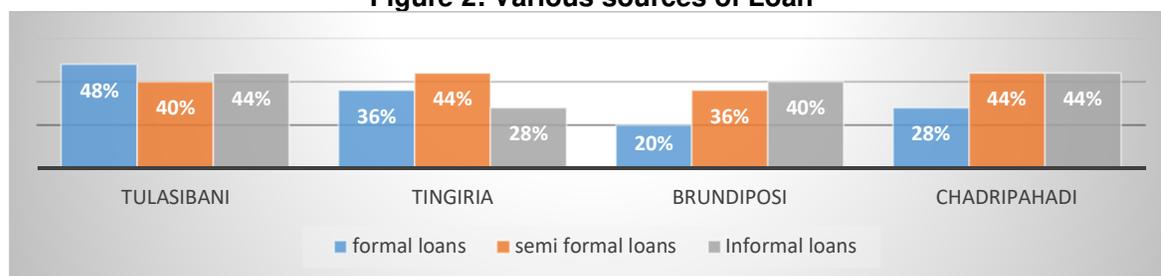
is the common practice. Bowls and plates made are sold in the market, which is a big business in this area and most of the Sal leaves are collected for processing and selling in the market. At dawn, women set out for the forests and remain there until afternoon, carefully selecting leaves that would be stitched on the next day to make plates. A day's collection usually comes to 1,000-1,200 leaves, enough to make 150-200 plates. The plates are dried the next day, though the government has fixed a price—a packet of 80 plates is rupees 24, there is some haggling and people do not generate adequate revenues by selling Sal and Siali leaf plates. Siali leaf plate making is a common practice in the area but it is not done commercially as most of the products after the households use primary processing only. There is very less population of Siali creepers in the area as the dominant species present in the area is Sal. Sal seed is used for the extraction of the oil, which is used mainly in manufacturing of chocolate and other fashionable items. Sal Seed is a nationalized product since 1973 that means its trade is directly controlled by the Government of Orissa but there is a lot of illegal trade going on through intermediaries and this NTFP is generally collected for commercial purpose only. The average price of Sal seed is about rupees 10 per Kg for the farmers.

Mahua is the raw material used for making country liquor, which is a big source of revenue for the tribal. The months between February and May are the peak season for collecting 'Mahua' flowers. The average price of Mahua flower is about rupees13 per kg in that area. This is generally used for extraction of oil. This oil (solid at ambient temperature) is used for the care of the skin, manufacture of soap or detergents, and as a vegetable butter. It can also be used as a fuel oil. The product is often used in sweets and chocolates under the name "illipe". The seed cakes obtained after extraction of oil also constitute very good fertilizer. The average price is about rupees 12 per Kg in the area. The average price at which the honey is sold is about Rs.65 per liter and most of the *honey* collected is sold in the local market or supplied to the local traders. Apart from consumption as a sweetener, honey is a medicinal product and used in various ayurvedic medicines and cosmetics. The valuable leaves are used for wrapping Bidis, popular smoke especially among poor natives. It is a nationalized NTFP and most of the produce is self-consumed for making Bidis. The overall trade happening is through the middlemen only. This is also used for leaf plate making. This is made by stitching the leaves together. This is also a nationalized NTFP and cannot be traded freely in the market but most of the trade from this area is illegal through an intermediary.

Loans Taken and Refunded

More than 40 percent of loans taken from the formal sources are repaid in the same year, as the loan amount was very small in most of the cases. Most of the loans taken are for consumptive use only. Commonly these people do not have access to the banking and financial facilities, so they fall prey to local moneylenders who charge interest rate as high as 300 percent. The other informal sources of lending include relatives and friends who are the main source of credit for most of the people.

Figure 2: Various sources of Loan



Source: Based on field survey

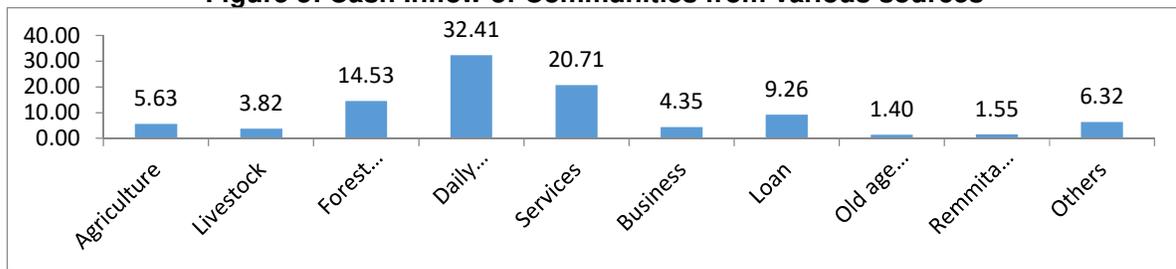
Sources of Cash in-flow

Daily wages come out to be the biggest source of cash inflow as in spite being the primary occupation; agriculture produce is not generating substantial income for most of the households.

Sources of Cash out-flow

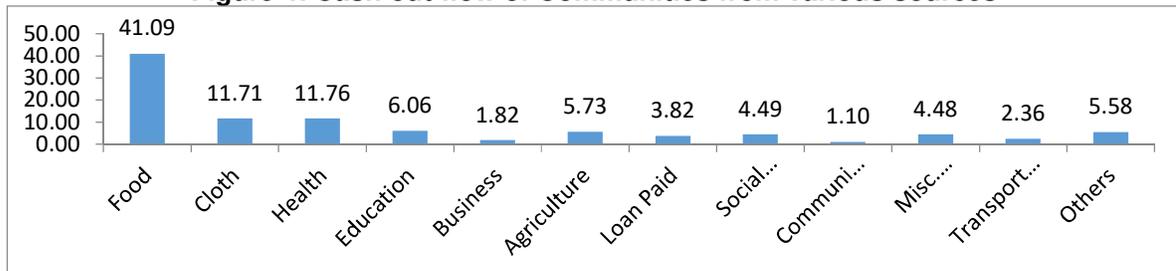
Food is the biggest factor for cash outflow for the communities as the tribal communities acquire most of the other things from their natural habitat and live with minimum requirements.

Figure 3: Cash Inflow of Communities from various sources



Source: Based on field survey

Figure 4: Cash out-flow of Communities from various sources



Source: Based on field survey

Challenges in existing Livelihoods

The *second objective* of the study is to examine the challenges faced by the tribal people in sustaining their livelihoods. The people of the study area responded to various issues on agriculture, agro-allied services and Non-Timber Forest Produce (NTFP). The result shows that limited source of water and irrigation facility is found mainly in Chadripahadi. 84 percent people expressed their views in favour of this followed by 68 percent of Tulasibani, 62 percent of Tingiria and 48 percent of Brundiposi. Very few people said they require undulated land pattern. Most of the people said that they have no awareness about new agricultural practices. 92 percent of respondent from Chadripahadi, 84 percent, 76 percent and 72 percent of people from Tulasibani, Brundiposi and Tingiria respectively had this opinion. Non-availability of better technology is also a challenge. 96 percent, 88 percent, 80 percent, 72 percent of household in Tulasibani, Tingiria, Chadripahadi and Brundiposi villages respectively had this opinion. Due to the distance between dwelling place and market people are facing difficulties to sell their product. The result shows that 100percent, 96percent, 92 percent and 80percent of households in Brundiposi, Tingiria, Tulasibani and Chadripahadi villages respectively consider this as a major problem. Moderate replies have been found from people of the four villages regarding Interference of Intermediaries i.e. 60 percent, 48 percent, 40 percent and 32 percent of households in Tulasibani, Tingiria, Brundiposi and Chadripahadi villages respectively.

In agri-allied issues, the result shows various challenges faced by the villagers of these four villages. It is found that 92 percent people of Brundiposi, 84 percent of Chadripahadi, 60 percent of Tingiria and 48 percent of Tulasibani village marked lack of infrastructure facility as a major hindrance. It is found that there is lack of water facility for irrigation as well as other requirement i.e. 92 percent, 84 percent, 84 percent and 76 percent of households in Chadripahadi, Brundiposi, Tingiria and Tulasibani villages respectively favoured this opinion. Some people replied that there is fighting of livestock and wild life during grazing. The result also shows that there is no awareness about animal diseases and feed fodder management. Most of the people have replied that there is no reach of veterinary doctors at the remote villages. Most of the people rear non-milked livestock. Most of the people don't have adequate knowledge on Market price of different commodities.

In Service sector, all the four villages are not getting local jobs easily. If at all they get any manual labour work but it is not provided regularly. Also, people are facing problems of very low wage rate. As they don't have technical skills, they are unable switch their job. They are unaware of various employment opportunities found in urban areas. In the Non-Timber Forest Produce (NTFP) sector, most of villages like Tingiria villagers are not getting sufficient availability of NTFP.

Other villagers also replied the same. People have replied that they have threat of wild animals in the Similipal reserve forest. Production of NTFP is more time consuming and most of them are seasonal. There is also restriction through different forest laws by the Forest department.

Table 01: Challenges faced by villagers (in percent of Household)

Agriculture	Tulasibani	Tingiria	Brundiposi	Chadripahadi
Limited source of water and irrigation	68	62	48	84
Undulated land pattern	40	44	36	44
No awareness about new practices	84	72	76	92
Non-availability of better technology	96	88	72	80
Distance from the market	92	96	100	80
More Interference of Intermediaries	60	48	40	32
Agri-allied	Tulasibani	Tingiria	Brundiposi	Chadripahadi
Lack of infrastructure	48	60	92	84
Lack of water facility	76	84	84	92
Fighting of Livestock and wild life during free grazing land	36	44	52	28
No awareness about animal Diseases and feed fodder management	52	60	48	44
Veterinary Doctor services do not reach at the remote villages	92	88	88	84
Lack of Knowledge on Market Price	92	84	76	80
Rearing of non-milked cattle	84	76	68	80
Services	Tulasibani	Tingiria	Brundiposi	Chadripahadi
Lack of local job	84	92	84	80
Irregularity of job	80	96	88	84
Low wage rate	92	88	96	92
Lack of technical skills	76	68	84	80
Unaware about the market	94	84	84	88
Non-Timber Forest Produce (NTFP)	Tulasibani	Tingiria	Brundiposi	Chadripahadi
Not available sufficiently	84	92	84	80
Threat of wild animals	92	88	82	92
More time consuming	80	76	88	80
Seasonal opportunity	72	72	84	84
Restrictions by Forest department	92	88	94	92

Source: Based on field survey

Livelihood Opportunity

The *third objective* of the study is to explore suitable livelihood opportunities for forest dependent tribal people at Similipal. Mostly they depend upon forest to earn their livelihood, but they don't get sufficient money from it. They also depend upon agricultural activity, poultry, daily wage labor etc. In order to improve the livelihood patterns of the forest dependents some suitable livelihood opportunities should be provided to them. Various suggestions are given by people with significant frequency. The people were asked about their problems and the solution to those problems according to their own understanding. Most of the people suggested that they need irrigation facility on priority basis followed by infrastructure facilities like transport or communication facility, electricity, school and health facility, local based employment opportunity and loan facilities. They also require training and capacity building in the field of agriculture, poultry, animal husbandry etc. which will help them to enhance their income. As it's a forest based area people are interested in the provision of Press Khali Machine through which they can produce better and more leaf-plates. Very few people showed their interest on MGNREGS work. If these opportunities would be created for the forest dependents, their wellbeing will attain sustainability from the socio-economic front.

Conclusion and Recommendation

As the situation at the Similipal Biosphere Reserve on which the tribal people depend upon for their livelihood seems to be challenging from sustainability front, people practice diversified

portfolios at the subsistence level to complete the cycle. The above issues associated with the existing livelihood as discussed above clearly reflect that there is a necessity to adopt a comprehensive strategy while selecting a livelihood to sustain as mentioned below;

- Filling the gaps in the existing livelihood- through extending technical services, value addition to the forest products and market led approach with collective action.
- Explore new livelihood opportunity which will complement to the existing one like; bee keeping, designing of handicraft products, production of medicinal products etc.
- Select completely new livelihood opportunity that has enough potential and low risk like; business led backyard poultry by introducing high yielding varieties.
- Skill development through vocational trainings to the local youths in selected trades who can be engaged in various industries or self-employed.

Following recommendations are drawn from the overall observations and analysis:

- Convergence of various Government sponsored schemes at the village level will play a crucial role in facilitating access of forest dependent tribal to the mainstream.
- The role of civil societies is crucial to empower the community and capacitate them in various livelihood activities in adopting better Package of Practices (PoP) to ensure increase in production.
- Effort should be made to popularize use of technology and enabling their access to information on market intelligence is a must.
- Optimum use of available resources and adoption of innovative value addition method are very essential.
- Sustainable use of forest resources and harvesting of NTFPs.
- Sensitization of the community by Government and private agencies to take the lead for holistic development of the household vis-à-vis villages.

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