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# **Evaluation of the Socioeconomic Status of Local Tribes in Achanakmar Amarkantak Biosphere Reserve of Mungeli District**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

Chhattisgarh is one of the tribal-state of India in which most of the tribes are concentrated in the dense forests of Achanakmar Amarkantak Biosphere Reserve (AABR). Tribal primarily depend upon agriculture, forest products, handcrafts, and medicinal plants for their existence. Traditionally, Gonds are agriculturalists, and Baigas are actively engaged in the medicinal aspects of plants to treat ailments. However, with time, the social, economic, and cultural life of the tribes in forest reserves has changed due to increased anthropogenic pressure on the wildlife, which has endangered their survival. These tribes often practice collecting forest products and selling them in

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the market for their livelihood. To address these issues, we have done a comprehensive study of the AABR falls under, Khudia and Lormi Region of Mungeli District of Chhattisgarh State. We have observed seven tribes viz., Gond, Baiga, Kanwar, Oraon, Muria, Bharia and Kol, among them the Gonds were dominant. We have included the type of family, assets, drinking water, house/land, livestock, toilet facility, availability of electricity and Fuel for Cooking for the evaluation of the socioeconomic profile of the study area. The outcome of the present research work will help to understand the socio-economic status of the indigenous tribes of AABR of Mungeli district. Further extension of present research work would be focused on the cultural practices, educational attainment, employment status, and access to healthcare facilities, which could be able to provide the ongoing socio-economic changes among the tribal communities, and support the effective implementation of tribal welfare schemes.

**Keywords:** *Socioeconomic status; local tribes; Achanakmar Amarkantak biosphere reserve; Mungeli; Lormi; Khudia; tribal welfare.*

## 1. INTRODUCTION

The tribes have learned to live in hostile environmental conditions and play a crucial role in managing and conserving nearby biodiversity for a long time with their rich culture, living tactics and rituals. Food and Agriculture Organization stated that the traditional knowledge of tribal people provides valuable insights towards eco-restoration. The Indigenous tribes in the Achanakmar-Amarkantak Biosphere Reserve (AABR) in Chhattisgarh are the Gond, Baiga, Kanwar, Oraon, Muria, Bharia, and Kol communities (Mollick et al., 2022). The Baiga tribe is particularly associated with the collection and processing of medicinal plants from the Achanakmar forest, for treatment of common ailments (Mahato et al., 2022). Achanakmar Wildlife Sanctuary has existed since 1975 under the Indian Wildlife Protection Act of 1972. Later, the AABR was established in 2005 which occupied Chhattisgarh and some regions of Madhya Pradesh. Later, ATR was declared in 2009 under AABR in the lap of the Maikal ranges. Prasad et al., (2022) quoted that the AABR has tropical moist deciduous vegetation that is enriched with a rich pool of germplasm.

Roychoudhury et al. (2019) mentioned that 27 communities are living in the core and buffer zones of AABR, among them, the Baigas are a primitive and dominant Dravidian, followed by Gonds. They also quoted that the population of Baiga has been dominant due to their high birth rate and immigration from different parts of the adjacent state. They stated that the Kols have been migrated to AABR from Jharkhand province and Oraons from Chhota Nagpur. However, we did not find the in-depth history of AABR tribes in detail. The tribal communities have evolved their livelihood approaches based on their ethnic knowledge and exist in adjacent proximity to the

biodiversity-rich landscape. Each tribal community has a unique culture and tradition with a particular type (Christen, 2015) of economy and associated work. Land and forest are their assets. Therefore, they have always maintained a close relationship with the land and forest. Their economy is highly subsistence and agro-based. Most importantly, with the march of time, the tribal community has been exposed to modernization and subsequent human development, which has enabled them to explore numerous means of livelihood (Das et al., 2020). The socioeconomic condition of any family or person depends on their occupation and income (Joshi et al., 2013). Thus, the socio-economic conditions of tribes in AABR reflect a complex interplay of traditional practices and modern challenges. Efforts to improve the socio-economic conditions of tribes in AABR require a multifaceted approach, focusing on sustainable development, education, healthcare, and the protection of their cultural heritage. Shylendra et al. (2023) mentioned that these challenges are crucial for empowering local tribal communities and ensuring their rights and livelihoods.

The socioeconomic conditions of the local tribes depend on two factors, they are economy and occupation (Lakshmi et al., 2019; Chakravarthi et al., 2017). The type of family (e.g., nuclear or joint), house, land availability, livestock diversity, availability of electricity, assets, drinking water facility, toilet facility, and fuel for cooking are some crucial aspects of measuring the socioeconomic profile of the local population at a base level. Many tribal people rely on agriculture, forest produce, and traditional crafts. Additionally, the forest provides essential resources, including wood, medicinal plants, and wild fruits, which are vital for their livelihoods. The main problem encountered limited access to formal employment opportunities often leads to

reliance on daily wage labor, particularly in agriculture or manual work in nearby towns. Efforts are ongoing to improve educational infrastructure. Afterward, healthcare access is poor, with reliance on traditional medicine and limited government health services. Last but not least, the tribal communities maintain rich cultural traditions, but they face challenges from modernization and loss of land, which threaten their identity and lifestyle. Thereby, the present study was conducted to evaluate the Socioeconomic Status of Local Tribes in AABR.

## 2. MATERIALS AND METHODS

The study area for the present research work was AABR falls under Khudia (22.47°N,81.55°E) and Lormi (22.35°N,81.78°) region of Mungeli District of Chhattisgarh State. The Socioeconomic Status of Local Tribes in AABR was evaluated from January 2024 to June 2024. The data were collected using questionnaires and personal interviews. A total of 150 villagers were selected for the personal interview and questionnaire as per the literacy level of respondents, among them 53 people (common residents) were interviewed who were engaged in marketing and stall putting in the local market, and the remaining 97 were interviewed based on only because they were common residents of the study area. The interviews were conducted in remote villages. The informants were questioned for their socioeconomic profiles as per the questionnaire prepared. We have selected five villages, viz., Khudiya, Kanchanpur, Karidogari, Aurapani, and Salgi, for the present research work.

Baseline socioeconomic profiling was preliminarily assessed based on the data, viz., Type of Family, Religion, House or Land, Livestock, Availability of electricity, Assets, Drinking water facility, Toilet, and Fuel for cooking. Further, the socioeconomic data related to the use of Non-Wood Forest Products (NWFP) and their marketing economics were evaluated at the primary level. The present research was included NWFP, namely Traditional medicines, Fruits, Vegetables, Beauty products, Dye, Mahua, handicrafts, and Others (e.g., Dhup Batti for puja, oils, plant-derived gums). All the data were processed, tabulated, and graphically summarized using MS Office.

## 3. RESULTS AND DISCUSSION

We have exhaustively gone through the evaluation of socioeconomic profiling of local

tribe's residents in AABR. These tribes face challenges, especially in the economic context, which impacts their sustainable existence. We have done studies in Khudiya, Kanchanpur, Karidogari, Aurapani, and Salgi villages and collected the socioeconomic data shown in Table 1. Analysis of gathered data revealed that tribals collect forest products for both self-consumption and marketing. Baseline socioeconomic profiling was initially assessed based on various parameters, including type of family, religion, ownership of house or land, livestock possession, availability of electricity, household assets, drinking water facilities, sanitation infrastructure, and cooking fuel sources. We have observed that the maximum family belongs to a Nuclear Family (NF) and recorded that Kanchanpur has 76 % of NF. Moreover, we have found that mobile and television were dominant assets and the Khudiya village population has maximum accessibility to the assets. Later, we have seen that almost every villager has access to drinking water. Afterwards, we noted that almost every villager has their own house/land. Then, we observed that poultry and goats were dominant in the study area, and few people had bullocks as livestock. After that, we have found that nearly every village has its own house/land. Furthermore, we recorded that almost every village has its own toilet facility, and Salgi has comparatively less accessibility to toilet facilities. Additionally, we have observed that Khudiya village has maximum access to LPG and noticed that the large population still uses wood for cooking. We have also found that the Hindu religion is the most dominant (above 80 %) in the study area. Data related to the aforementioned statements are graphically presented in Fig. 1 to Fig. 9. These data were based on the personal interviews and questionnaire surveys with 150 villagers based on their literacy levels. Among them, 53 individuals, primarily common residents and engaged in the marketing of NWFP, were interviewed. The remaining 97 were interviewed based on only because they were common residents of the study area. No similar study was conducted earlier, as per our best know and beliefs. However, other factors have been divulged. For instance, Literature viz., Sanyal et al. (2022), Singh et al. (2022), Rathia et al. (2018), Sinha et al. (2012), Prevot et al. (2014), Chakma et al. (2006), and Gautam et al. (2022) have been reported that the local inhabitants of AABR are actively engaged in farming, forest labor, selling forest products, agriculture, traditional medicine, and handicrafts (i.e., bamboo mats, baskets, jewelry, and decorative

**Table 1. Socioeconomic profiling of local tribes in AABR of Mungeli District**

Study area	Respondent	Type of Family		Religion			House/Land			Livestock				Availability of electricity		Assets					Drinking water Facility		Toilet		Fuel for cooking		
		NF	JF	Hindu	Christian	Other	Yes	No	Cow	Buffaloes	Bullocks	Goats	Poultry	Yes	No	Cycle	Bike	Mobile	Mixer	Refrigerator	Television	Yes	No	Yes	No	LPG	Wood
Khudiya	50	36	14	40	9	1	48	2	16	12	5	34	41	50	0	10	24	46	14	9	41	50	0	47	3	29	21
Kanchanpur	25	19	6	22	3	0	25	0	8	7	3	18	19	25	0	4	12	21	8	3	25	25	0	23	2	18	7
Karidogari	25	14	11	23	2	0	24	1	7	5	2	16	16	25	0	6	10	19	6	2	20	25	0	24	0	16	9
Aurapani	25	13	12	21	4	0	25	0	7	6	3	17	20	25	0	9	8	20	4	3	19	25	0	25	1	13	11
Salgi	25	10	15	25	0	0	23	2	6	5	2	19	17	24	1	6	7	16	7	2	17	25	0	20	5	11	14

kinds of stuff) as a major source of income. Additionally, they reported major areas of employment for tribal include Forest-based activities, daily wage work, collection of forest produce, mahua liquor business, handicrafts, and agriculture.

Additionally, socioeconomic data related to the utilization and market economics of NWFPs were evaluated at the primary level. The study

encompassed various NWFPs, including traditional medicines, fruits, vegetables, beauty products, dyes, Mahua seeds, handicrafts, and other products such as incense sticks (Dhup Batti) for religious rituals, oils, and plant-derived gums. The Socioeconomic Profiling of Local Tribes in AABR of Mungeli District in the context of market economics of NWFPs at the primary level are graphically represented in Fig. 10.

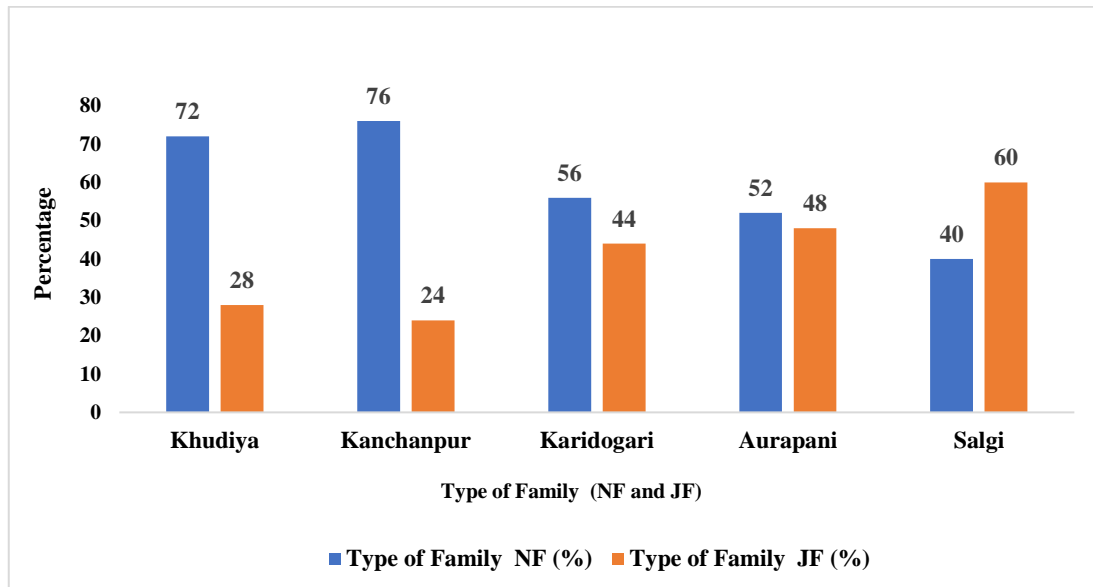


Fig. 1. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of type of family

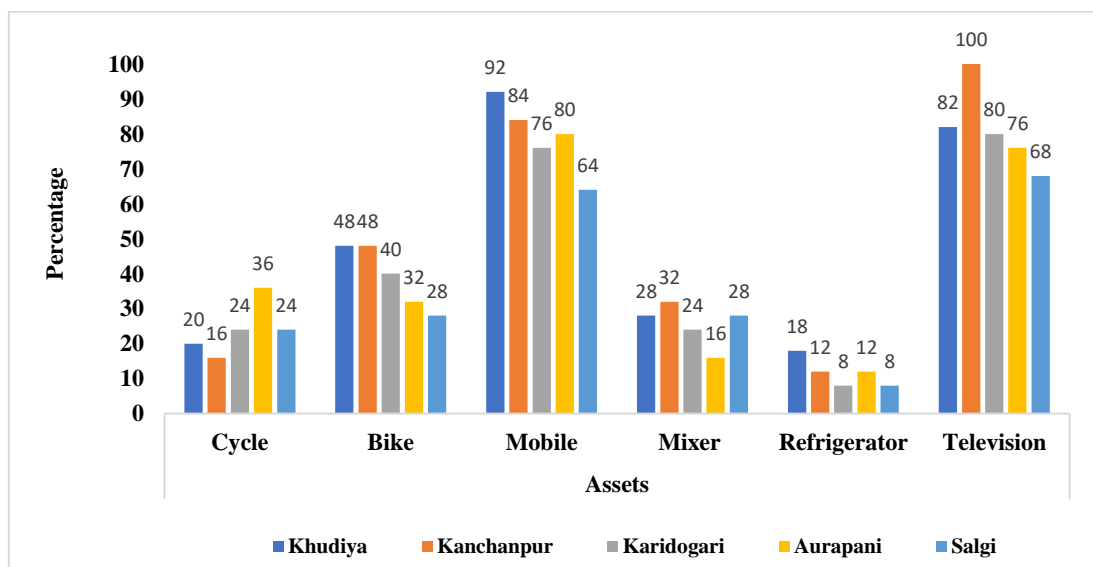


Fig. 2. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of assets

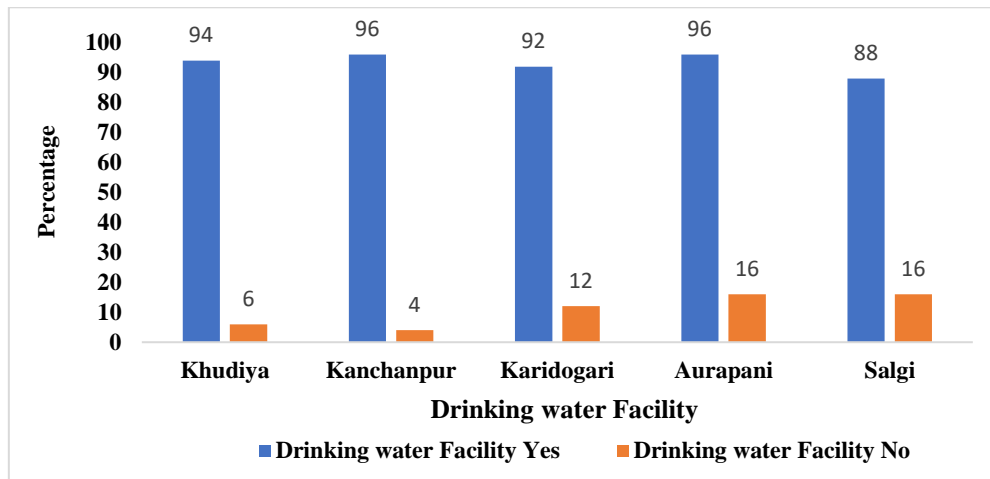


Fig. 3. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of drinking water facility

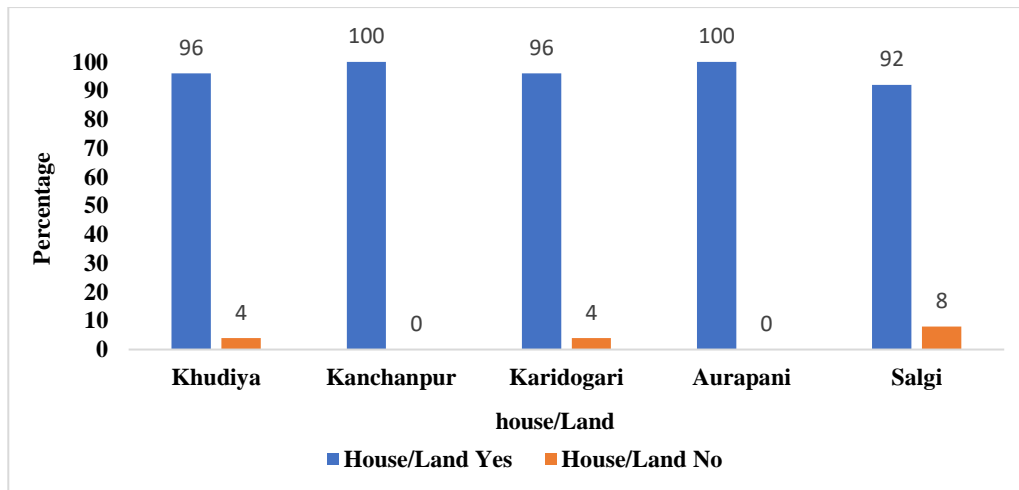


Fig. 4. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of own house and land

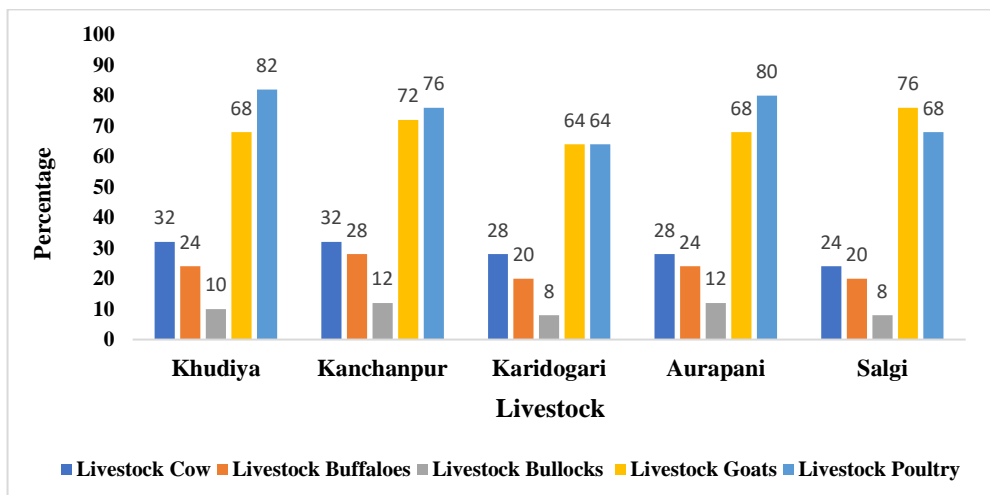
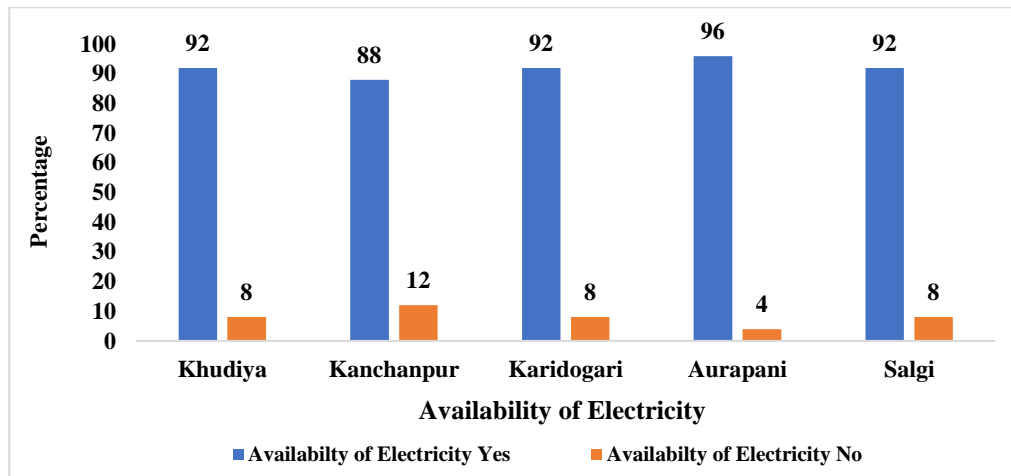
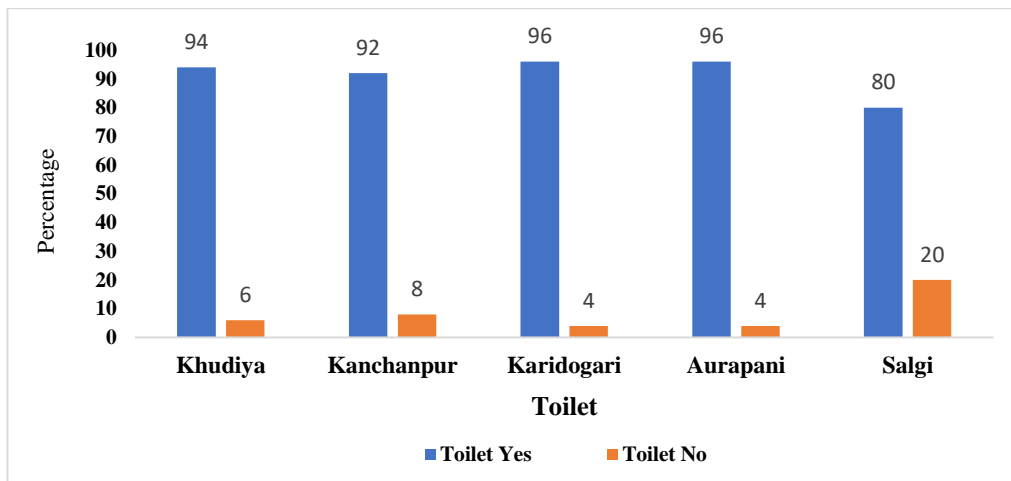


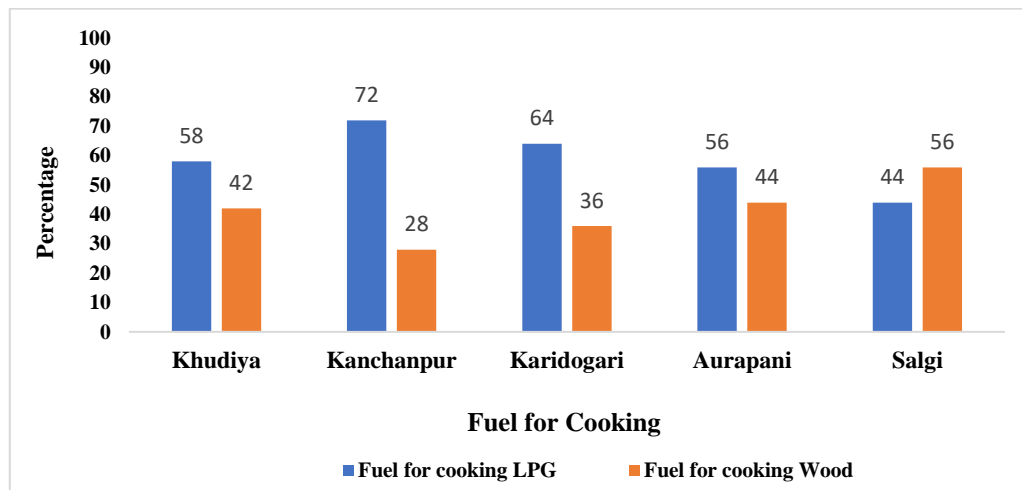
Fig. 5. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of livestock diversity



**Fig. 6. Socioeconomic profiling of local tribes in ABR of Mungeli District in context of availability of electricity**

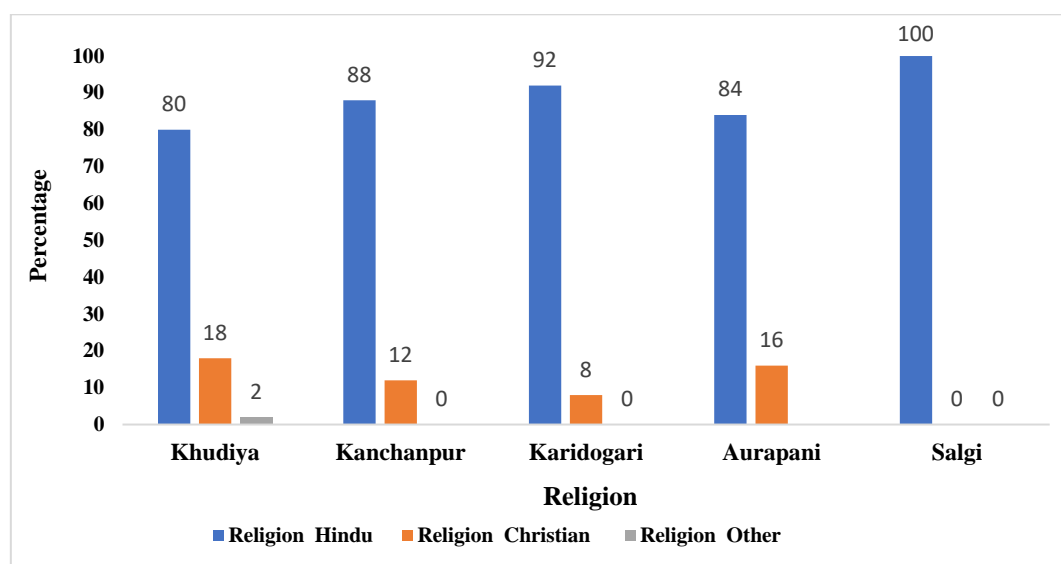


**Fig. 7. Socioeconomic profiling of local tribes in ABR of Mungeli District in context of toilet facility**

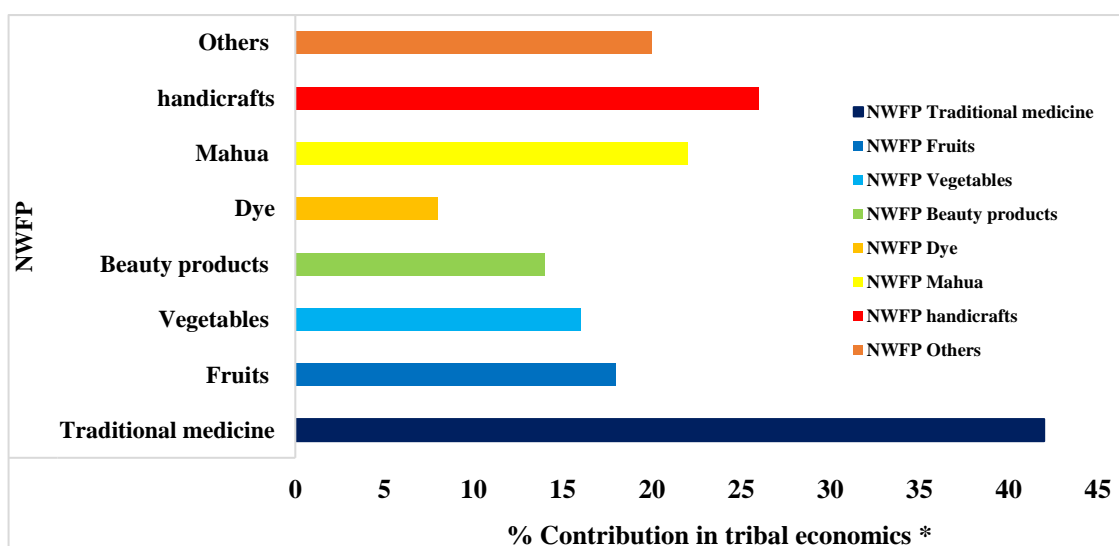


**Fig. 8. Socioeconomic profiling of local tribes in ABR of Mungeli District in context of fuel for cooking**





**Fig. 9. Socioeconomic profiling of local tribes in AABR of Mungeli District in context of religion occupancy**



**Fig. 10. Socioeconomic Profiling of Local Tribes in AABR of Mungeli District in context of market economics of NWFPs at primary level**

\*Percentage contribution was calculated with regard to 150 respondents. The respondents were involved in multiple NWFP marketing, and on the basis of that the % Contribution was calculated

The analysis of the percentage contribution of various NWFPs to tribal economics revealed that traditional medicine accounted for the highest share (42%), which underlines its critical role in the livelihood and economic activities of the respondents during the present research work. Further, the Handicrafts (26%) and Mahua (22%) also contribute to significant portions of the economy, which indicates their economic and cultural relevance within the community. Additionally, the fruits (18%) and vegetables

(16%) subsidised substantially, which reflects the dependence on edible NWFPs for income generation. The contribution of beauty products (14%) and dye (8%) was relatively lower but remained noteworthy in the overall economic structure. Furthermore, the other NWFPs collectively accounted for, 20% which demonstrates the diverse utilization of forest resources. However, the respondents in the present research work engaged in multiple NWFP marketing activities, therefore, the

percentage contributions were calculated accordingly.

The tribal communities constitute a significant segment of the Indian population, characterized by their distinct ecology, economy, society, and religious beliefs (Jaiswal et al., 2020). Thereby, their socioeconomic profiling of them could be a necessary part of their upliftment. The economy and livelihoods of tribal populations in Chhattisgarh primarily involve agricultural practices and the collection of forest resources, such as herbal products and high-value forest produce, including Sal butter (Paltasingh et al., 2014; Marchang et al., 2018). But, still, tribal communities encounter numerous challenges, including the exploitation of natural resources, threats to traditional livelihoods, the erosion of traditional knowledge, and issues related to tribal rights within conservation efforts (Nimisha et al., 2020; Venugopal et al., 2019; Singh et al., 2015). Furthermore, various opportunities exist for enhancing the socioeconomic status of tribes through government initiatives, including education, job-oriented vocational training programs, entrepreneurship, skill development workshops, and minimum wage (Alam et al., 2023; Das et al., 2019). Thus, the study concluded that more insight into diverse socioeconomic portfolios is required to be evaluated for effective planning of tribal welfare in terms of their linkage to modern lifestyle trends as well as ensuring their association with the forest ecosystem. Nevertheless, the Pradhan Mantri Adi Adarsh Gram Yojana, Schemes for Scheduled Tribes, Support to Tribal Research Institute scheme, Scheduled Tribes and Other Traditional Forest Residents, and Development of Particularly Vulnerable Tribal Groups (Act, 2006) are potent initiatives taken by the government for tribal welfare (Priyadarshini et al., 2019 & Mandi et al., 2020; Gupta et al., 2018; Minz et al., 2020). But, the effective implementation of such programs is still questionable. Thus, our research work will focus on the integration of tribal welfare program accessibility to tribes along with our existing research work. Singh et al. (2024) have divulged that the population density of seedlings, saplings, and trees was higher in the Mixed Sal Forest Closed Site, in contrast to the Pure Sal Forest Closed Site. Most recently, Bali et al. (2025) investigated the biodiversity, biogeographical features, and ethnobotanical worthiness of the AABR and glorified its perilous role in upholding ecological balance and its subsidiary role in the livelihoods of the local populations.

## 4. CONCLUSION

AABR includes one or more protected areas as well as surrounding territories that combine conservation efforts with sustainable use of natural resources. The forest serves tribal communities not only for their livelihood but also for their socio-cultural life. There is a close relationship exists between tribes and the forest ecosystem; therefore, they cannot survive in isolation. But their dependence on the forest was always overlooked. There was always a conflict between the local Adivasi's needs and the forest's preservation. Tribal communities have effectively utilized natural resources through communal practices and sustained land-use methods. Despite their rich cultural heritage and ecological knowledge, deforestation, changes in land use, and restricted access to forests present significant threats to their livelihoods. Therefore, the enhancement of the socio-economic status of the local tribal population will occur through sustainable practices in the production, harvesting, processing, and marketing of forest products, as well as through pilgrimage and ecotourism.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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