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Role of medicinal plants in improving livelihood of tribes of Dumka District, Jharkhand.

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ABSTRACT

The indigenous tribal populations of Dumka District, Jharkhand, have long relied on medicinal plants as an essential component of their healthcare systems and livelihood. These plants are integral to the health and economic well-being of the communities, providing traditional healing methods and a sustainable source of income through their sale. This study explores the role of medicinal plants in improving the livelihood of tribal communities in Dumka District, focusing on the varieties used, methods of collection and preparation, cultural and economic significance, and the challenges faced by these communities in leveraging the potential of medicinal plants. The research aims to provide insights into the sustainable use of these plants and the possibility of enhancing livelihood opportunities through their cultivation, preservation, and marketing.

Key Words - Livelihood, Tribal, Dumka, Medicinal plants, Well-being, Income.

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INTRODUCTION

Dumka District, located in the Santhal Pargana division of Jharkhand, is primarily inhabited by tribal communities such as the Santhals, Mahli, Soriya Pahadiya. These communities have historically relied on the rich biodiversity of their forests, which include a wide array of medicinal plants, to meet their healthcare needs. With limited access to modern healthcare facilities, these tribes have preserved an extensive knowledge of plant-based treatments, passed down through generations.

Medicinal plants play a crucial role not only in health maintenance but also in the livelihood of the tribes, who use them for daily remedies, rituals, and economic activities. The sale of these plants, both in their raw form and as processed products (oils, powders, etc.), provides tribal households with a significant source of income. This paper explores how these plants contribute to both the health and economic well-being of the tribes of Dumka, examining their potential as a livelihood-enhancing resource.

OBJECTIVES

- To identify the medicinal plants used by tribal communities in Dumka District.
- To assess the economic significance of these plants for tribal livelihoods.
- To understand the methods of collection, processing, and commercialization of medicinal plants.
- To explore the role of medicinal plants in traditional healthcare systems.
- To analyse the challenges and opportunities in the sustainable use of medicinal plants.

LITERATURE REVIEW

The use of medicinal plants in tribal and rural communities in India has been widely documented. A study by Jain (2011) emphasizes the vital role of traditional medicine and herbal remedies in the health systems of tribal populations.

In Jharkhand, medicinal plants are not only used for healthcare but also for cultural and spiritual practices (Ravi *et al*., 2014). These plants, which include species such as Neem (*Azadirachta indica*), Giloy (*Tinospora cordifolia*), and *Aloe vera*, are often collected from forests or cultivated in home gardens.

Samant *et al.* (2016) have documented the ethnobotanical knowledge of tribal populations, highlighting the unique relationship between the people and the plants they use. However, while the cultural and medicinal significance of these plants is well-understood, the economic potential of these resources, particularly in terms of enhancing livelihoods, has received less attention.

Solidaridad. (2022, May 6). Solidaridad is aiming to restore sustainability in the medicinal and aromatic plants (MAPs) and herbal medicine industry by adopting a market-driven, entrepreneurship-based strategy. In line with its long-term strategic plan, the organization operates across four key areas: training farmers in scientific techniques and best agricultural practices; helping them build strong, sustainable business models; promoting supportive and inclusive policy frameworks; and developing markets for eco-friendly, affordable products. Key crops involved in this initiative include Ashwagandha (*Withania somnifera*), Mint (*Mentha*), Lemongrass (*Cymbopogon citratus*), Tulsi (*Ocimum tenuiflorum*) and Black cumin (*Nigella sativa* L).

The study by Asigbaase *et al.* (2023) investigated ethnomedicinal practices among forest-fringe communities in Southwestern Ghana, identifying a rich diversity of plants used for healthcare and livelihoods. The research spotlights these species for both traditional medicinal importance and their economic contribution to local livelihoods. Neem (*Azadirachta indica*), Cheese wood (*Alstonia boonei*), African mahogany (*Khaya senegalensis*), Sahjan (*Moringa oleifera*), and Coconut (*Cocos nucifera*) emerge as key trees with high utilization and cultural value.

Dalir, Choobchian & Abbasi (2025) present strong empirical evidence confirming that medicinal plant cultivation, especially Cumin (*Cuminum cyminum*) and Jujube (*Ziziphus jujuba*) plays a pivotal role in elevating rural livelihoods through economic and multiple livelihood capitals. Their work reinforces a growing body of research advocating for sustainable production, infrastructure investment, farmer support, and conservation-conscious policies. Future research must continue expanding species scope, enhancing participatory frameworks, and addressing the dual challenges of environmental change and value-chain integration.

Angmo, K., Adhikari, B. S., & Rawat, G. S. (2025), commonly documented and likely high-priority species are Himalayan Thyme (*Thymus linearis*) and Atis or Ativisha (*Aconitum heterophyllum*), based on other Ladakhi ethnobotanical surveys.

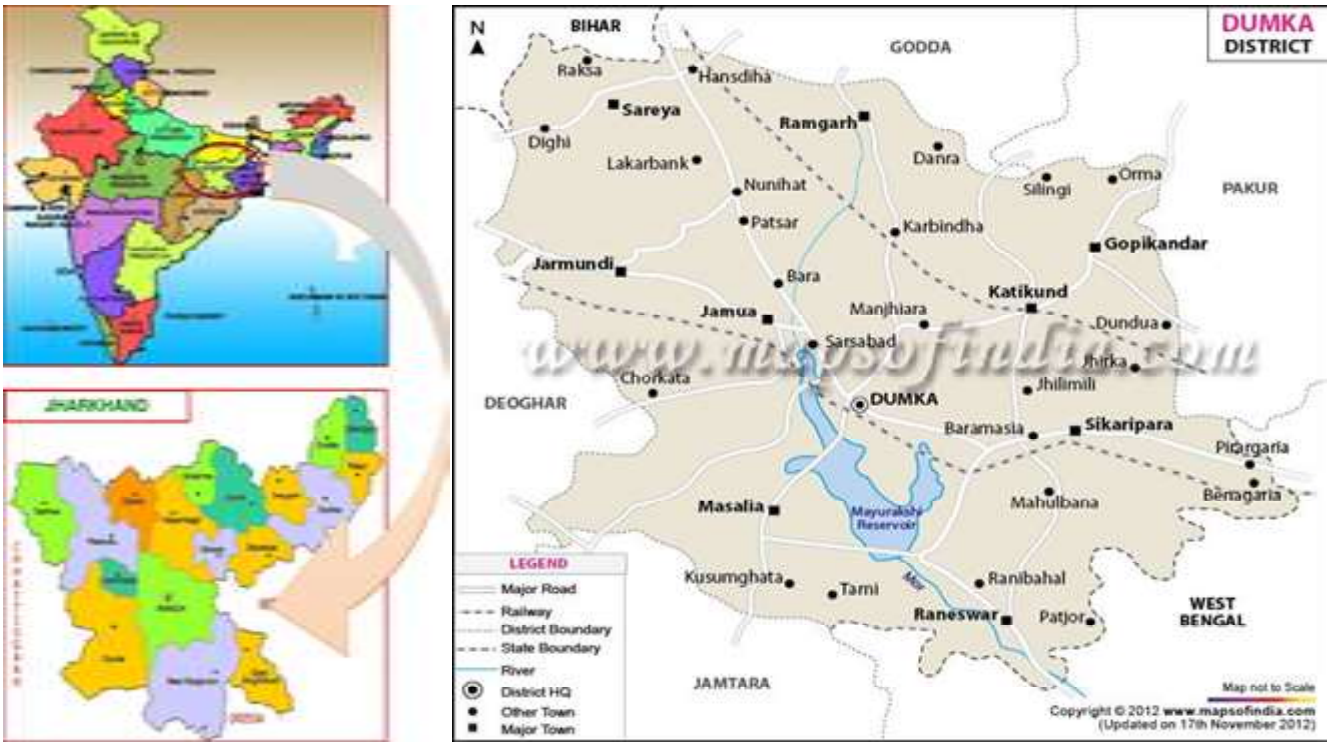
MATERIALS & METHODS

Study Area

Jharkhand, a forest and mineral rich state, lies between latitude 22°00' and 24°37' N and longitude 83°15' and 87°01' E. It has an area of 79,714 km^2 which constitutes 2.42% of the geographical area of India. Jharkhand has a tropical climate with annual rainfall of about 900 mm and the temperature varies between 4°C to 47°C. (Verma & Paul, 2019)

This study used a combination of qualitative and quantitative methods, including field surveys and participant observation, to collect data from tribal communities in Dumka District.

Sampling: The research was conducted in five tribal-dominated village of two blocks e.g.-Dumka and Gopikandar block of Dumka district. The villages was Rampur, Kusumdih, Baghmara, Hetkoraia (Dumka block of Dumka district) and Ranga mission village (Gopikandar block of Dumka district). A total of 30 tribal households were surveyed, and 5 key informants (tribal healers) were interviewed.



Source: https://www.mapsofindia.com/maps/jharkhand/districts/dumka.htm

Data Collection:

- Interviews: Structured interviews were conducted with tribal herbalists, healers, and community members to document the variety and uses of medicinal plants.
- Focus Group Discussions: These discussions explored the cultural significance, economic use, and challenges related to medicinal plants.
- Market Surveys: Observations were made in local markets to assess the commercialization of medicinal plants.
- Data Analysis: Descriptive statistics were used to analyse the frequency of medicinal plant usage, while qualitative data from FGDs and interviews were analysed using thematic coding.

RESULTS & DISCUSSION

Medicinal Plants Used by Tribal Communities:

The following medicinal plants were commonly used by the tribes in Dumka District:

Table 1 - List of plants used for Medicinal Plants in Improving Livelihood by the Tribes of Dumka District, Jharkhand.

Sl. No	Local Name/ Santhali Name	Botanical Name	Family	Parts Used	Medicinal Used
01.	Adrak/ Aadhe	*Zingiber officinale*	Zingiberaceae	Rhizome	Cough and digestive issues.
02.	Akwan/ Akawana	*Calotropis gigantea*	Apocynaceae	Leaves/ flowers/ Latex	Used for treating ache, toothache and snake bites.
03.	Aloe vera	*Aloe barbadensis*	Asphodelaceae	Gel part	used for treating burns, wounds, and skin conditions.
04.	Amaltash/ Judua	*Cassia fistula*	Fabaceae	Leaves/ flower bud/ Fruit pulp	Heal wounds, improve digestion, in skin diseases,
05.	Amrood/ Sapari	*Psidium guajava*	Myrtaceae	Leaves /Fruits	In Diarrhoea, Pain relief, Diabetes, Improve digestive health and boost immunity.

06.	Bael/ Cinja	*Aegle marmelos*	Rutaceae	Leaves/ fruits	Improve digestive health and boost immunity.
07.	Bhringraj	*Eclipta alba*	Asteraceae	Leaves/ Roots/Juices	In Hair care and liver problem.
08.	Brahmi/ Rote Adaa	*Bacopa monnieri*	Plantaginaceae	Leaves	Used for improving memory.
09.	China Saag	*Talinum fruticosum*	Portulaceae	Leaves	Improve digestive health.
10.	Chirota/ Chiryata	*Swertia chirata*	Gentianaceae	Whole part	In high blood pressure, diabetes, purification of blood.
11.	Gamhar	*Gmelina arborea*	Lamiaceae	Root/ Bark/ Leaves/ fruit	Used in treating fever, diarrhoea, headache, burning sensation.
12.	Giloy	*Tinospora cordifolia*	Menispermaceae	All part	used to boost immunity, treat fevers, diabetes and detoxify the body
13.	Haldi/ Sasang	*Curcuma longa*	Zingiberaceae	rhizome	Skin infection, arthritis.
14.	Kachnar/ Sinj adda	*Bauhinia variegata*	Fabaceae	All part	Skin problem, in thyroid, in digestion,
15.	Kanak champa/ Machkunda	*Pterospermum acerifolium*	Malvaceae	Flowers/leaves	In headache, ulcers, wounds, plate making, Scabies.
16.	Karanj/karanj	*Pongamia pinnata*	Fabaceae	Root/ Flower/ Leaves/ bark/ seed	In improving gut health, constipation, fungal infection
17	Mahua/ Matkom	*Madhuca longifolia*	Sapotaceae	Flowers/ Bark/ Leaves/seed	Nasal drop for sinusitis, diarrhoea, skin disease, eczema, Wound healing.
18.	Bitter leaf/ Hadha sakam	*Vernonia amygdalina*	Asteraceae	leaves	In diabetes and stomach ache
19.	Muli/Mula	*Raphanus sativus*	Brassicaceae	Leaves/ Seed/roots	In lowering blood pressure, in good digestion and cough.
20.	Neem/Nim	*Azadirachta indica*	Meliaceae	Leaves/ bark	Used in local health remedies for skin diseases and fever.
21.	Papita/Papita	*Carica papaya*	Caricaceae	Leaves/ Latex/Seed/ fruit/flowers	In skin problem, fever, malaria, cough and cold, respiratory problems.
22.	Ramphal	*Annona reticulata*	Annonaceae	Roots or kand mool	Rich in antioxidant, purifying blood.
23.	Sahjan/Munga	*Moringa oleifera*	Moringaceae	Almost all part	In typhoid, malaria, maintain sugar and blood pressure.
24.	Sarifa/ Madargom	*Annona squamosa*	Annonaceae	Leaves/ Bark/ Unripen fruit	In maintain sugar and blood pressure, toothache, diarrhoea

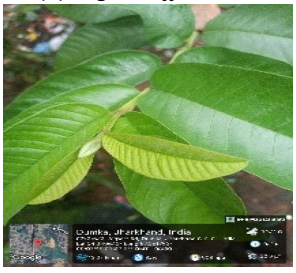
These plants, collected from local forests or cultivated, are either consumed as raw plants, made into powders, or processed into oils and tinctures.

(a)Zingiber officinale

(b)Calotropis gigantea

(c)Aloe barbadensis

(d)Cassia fistula



(e) Psidium guajava

(f) Aegle marmelos

(g) Eclipta alba

(h) Bacopa monnieri


(i)Talinum fruticosum


(j)Gmelina arborea


(k)Tinospora cordifolia


(l)Stevia rebaudiana

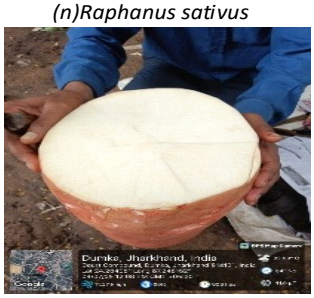

(m)Moringa oleifera


(n)Raphanus sativus


(o)Madhuca longifolia


(p)Azadirachta indica


(q)Carica papaya


(r)Annona reticulata


(s)Annona squamosa


(t)Pterospermum acerifolium


(u)Pongamia pinnata


(v)Punam Dorthy Hembrom selling oil and powder made from medicinal plants in the market for her livelihood.


(w) Me talking to Punam to collect information for documentation


(x) Some oils and powder forms of medicinal plants.


(y) Gathering data from Joyel Hembrom


(z) collecting photographs of plants

Figure 1- Some selected plants used for Medicinal Plants in Improving Livelihood of Tribes of Dumka District, Jharkhand.

ECONOMIC SIGNIFICANCE:

- Medicinal plants are sold in local markets, with products like Giloy and Neem fetching good prices due to their medicinal and cosmetic applications.
- Tribal women are especially involved in the collection, processing, and sale of medicinal plants. (Asigbaase et al., 2023) Selling herbal products offers them a significant economic opportunity, particularly as these products are in

demand not only locally but also in nearby urban centres.

- The commercialization of these plants has become a supplementary source of income, especially during off-seasons when other agricultural activities are less productive.
- There is potential for income generation from value-added products like herbal soaps, oils, and teas, which are gaining popularity in both local and national markets.

HEALTHCARE SYSTEM:

- Tribal communities in Dumka rely heavily on medicinal plants as their primary healthcare option due to the inaccessibility of modern healthcare facilities.
- Traditional healers, or Vaidyas, are highly respected members of the community and play a crucial role in healthcare delivery. These healers have an extensive knowledge of medicinal plants and their uses.
- The healing practices are deeply integrated into the tribal culture, with many plants being used not only for medicinal purposes but also for spiritual and religious rituals.

SUSTAINABILITY AND PRESERVATION:

- Over-exploitation of wild medicinal plants, especially in forest areas, is a growing concern. There is a risk of depletion of certain species due to unsustainable harvesting practices.
- However, some tribes are beginning to cultivate these plants in home gardens or community-managed agroforestry systems, which can contribute to the sustainable use and conservation of medicinal plants.
- Efforts to promote the cultivation of medicinal plants through government and NGO programs have seen moderate success in increasing awareness and promoting sustainable practices.

CHALLENGES FACED BY TRIBAL COMMUNITIES:

- Lack of Access to Markets: Many tribal sellers are dependent on middlemen who exploit them by offering low prices for medicinal plants.
- Climate Change: Changing weather patterns have affected the growth cycles of certain medicinal plants, leading to shortages and increased competition for resources.
- Lack of Knowledge on Commercialization: While tribal communities have extensive knowledge of medicinal plants' therapeutic properties, they lack information on value addition and efficient marketing strategies.
- Legal and Regulatory Issues: The unregulated trade of medicinal plants in some areas has led to concerns about the illegal collection of plants from protected forests, which may lead to environmental degradation.

CONCLUSION

Medicinal plants play a crucial role in the livelihoods of the tribal communities in Dumka District, Jharkhand, contributing significantly to both health and economic well-being. The sustainable harvesting and commercialization of these plants have the potential to enhance income generation, especially for women, while preserving traditional knowledge systems. However, challenges such as market access, climate change, and unsustainable harvesting practices need to be addressed.

To promote the sustainable use of medicinal plants and enhance the livelihoods of tribal communities, it is essential to:

- Support the development of organized market channels and value-added products.
- Provide training on sustainable cultivation practices and agroforestry.
- Establish legal frameworks to regulate the trade of medicinal plants and ensure fair prices for tribal collectors.

Future research should focus on the development of sustainable models for the cultivation, processing, and commercialization of medicinal plants, while also considering their cultural and ecological significance.

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