



Barriers Hindering Tribal Farm Women's Access to Agri-Allied Information

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HIGHLIGHTS

- Domestic chores and high drudgery limit tribal farm women's access to agricultural information and training.
- Long distances to markets and poor transport hinder women's exposure to agricultural innovations.
- The high cost and complexity of digital tools reduced effective communication and information access.
- Inflexible training schedules and male-dominated environments deter women's participation in extension programs.
- Lack of formal education and awareness restricts the adoption of modern agricultural practices and ICT tools.

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ABSTRACT

Tribal farm women play a crucial role in agriculture, household maintenance, and resource management while upholding cultural and ecological practices. However, limited access to agricultural information impedes inclusive development. To examine these challenges, an ex-post facto study was conducted in Odisha to identify the constraints they encountered. A sample of 240 respondents from two districts was selected through multi-stage random sampling, with data collected via semi-structured interviews. Key socio-personal issues included dominance of domestic work (63.55) and increased drudgery (56.63). Under extension and training, lack of resources (62.97) and unsuitable programme timing (59.41) were prominent. Marketing challenges involved distant markets (72.53) and poor transport (56.44), while communication barriers included high cost (73.24) and tool usability issues (59.39). Tackling these challenges through a holistic, solution-focused approach is essential to improve tribal women farmers' access to agricultural information and enhance their overall informational reach.

INTRODUCTION

In agrarian economies such as India, agriculture forms the backbone of livelihoods, and women play an indispensable role in the production of staple food crops. According to the Census of India (2011), 47.20 per cent of male workers were categorized as "other workers," whereas 55.21 per cent of female workers were engaged in agriculture, highlighting the significant contribution of women in this sector. Specifically in Odisha, 61.8 per cent of the total workforce was involved in agricultural activities, with women constituting 64.4 per cent. This figure increases to 76.9 per cent among rural women (National Sample Survey Office, 2024), reflecting the gendered dimension of agricultural engagement in the

state. Odisha is distinguished by its tribal diversity, being home to 62 tribal communities that constitute 22.1 per cent of the state's population. Notably, 94.5 per cent of this tribal population resides in rural areas, living in close proximity to nature (Nayak, 2015; Palo et al., 2020), who have been historically excluded from mainstream development. In tribal communities, women comprise nearly half the population and serve as the foundation of the agricultural workforce. They undertake strenuous tasks in agriculture, animal husbandry, and domestic spheres, often working long hours even during pregnancy (Dagar & Upadhyay, 2022). Tribal women undertake diverse roles including caregiving, agricultural labour, livestock rearing, water collection, and food preparation (Gioli et al., 2019; Javed et al., 2024). Their limited integration into

formal knowledge systems and market structures, coupled with restricted access to productive resources, significantly impedes the socio-economic progress of tribal communities (Panda, 2021). Although tribal women play a pivotal role in ensuring food security and sustaining agrarian livelihoods, their efforts remain largely undervalued and thus facing deeper layers of marginalization than their male counterparts, despite their multifaceted contributions to domestic and economic spheres. One of the critical barriers to enhancing their productivity is the lack of access to timely and relevant agricultural information (Ansari & Sunetha, 2014). Access to knowledge is fundamental for agricultural innovation and sustainable development (Jat et al., 2021). However, insufficient awareness regarding improved inputs, modern technologies, and recommended practices continue to hinder productivity in developing regions (Adebisi & Martins, 2020; Magruder, 2018; Lecoutere et al., 2023). Tribal farm women have specific informational needs related to crop disease management, high-yield varieties, fertilizer application, improved implements, value addition to forest products, and animal husbandry (Ansari & Sunetha, 2014). Nevertheless, their primary sources of information are informal, including family members, friends, and community leaders, rather than formal agricultural extension systems (Sharma & Singh, 2016). Their communication patterns are typically open and participatory, with knowledge-sharing occurring predominantly among women through horizontal channels. Hence, improving access to agricultural information for tribal women is essential for informed decision-making, enhanced productivity, and sustainable livelihoods. It also contributes to their socio-economic empowerment and overall community development (Das, 2022). Against this backdrop, an exploratory study was undertaken to examine the challenges faced by tribal women in Odisha in accessing agricultural and allied sector information pertinent to their community-based practices.

METHODOLOGY

The investigation was carried out in the two districts of Odisha- 'Mayurbhanj' and 'Keonjhar' since both of them are designated "Scheduled Areas under Article 244" (Fifth Schedule) of the Constitution of India along with the fact that these two districts had most number of tribal women populations (Census of India, 2011) along with the significant numbers in cultivated area with cropping intensity (Directorate of Agriculture and Food Production, 2020). Two blocks were randomly chosen from each district, followed by the random selection of four villages per block, resulting in eight villages in total. The respondents were farm women and the criteria involved for the selection was that they should be involved in agricultural and allied activities for at least 3 years or more. Total of 240 respondents (120 from each district) were selected randomly for the study by the researcher. The questionnaire was pretested on 10 per cent of the sample size and, although initially in English, it was explained to farmers in the local language (Odia) for clarity. Feedback from this testing phase helped refine the questionnaire before the final interview schedule was created. Data collection occurred through interviews in participants' homes, fostering open and honest responses (Jayasingh & Mishra, 2024). This process spanned from September 2023 to August 2024.

Many methodologies advocated for constraint analysis (Gupta et al., 2020), but Henry Garrett's ranking technique was employed to gauge the problems encountered by the farmer respondents by the orders of merit provided by them, which were later transformed into rank by using a suitable formula.

RESULTS

Socio-personal constraints

Tribal farm women play a vital role in India's agriculture but remain underrepresented. Socio-economic barriers restrict their access to crucial agricultural information, necessitating targeted interventions for inclusive development and improved productivity in tribal regions. Addressing the socio-economic constraints faced by tribal farm women is essential for inclusive agricultural

Table 1. Constraints associated with respondents

S.No.	Statements	Mean	Rank
Socio-personal constraints			
1.	Lack of self-motivation	37.33	VII
2.	Lack of schooling years and higher studies	52.14	III
3.	More social taboos, superstitions & traditions	48.77	IV
4.	More fear of social security	47.50	V
5.	Domestic work dominates over farming	63.55	I
6.	Lack of decision-making capabilities	44.09	VI
7.	Facing increased drudgery in farm operations	56.63	II
Extension and training constraints			
1.	Male domination in the training environment	48.92	IV
2.	Improper communication of information from workers	54.88	III
3.	Unsuitability of programme timings for tribal women	59.41	II
4.	Technologies are not gender-neutral	45.63	V
5.	No involvement of farm women in the demonstration	35.75	VII
6.	Lack of resources and facilities	62.97	I
7.	Physically unfit to attend the training	42.46	VI
Marketing constraints			
1.	High fluctuation in demands of produce	52.41	III
2.	Inefficient arrangement for marketing & sale	47.02	V
3.	Long distance of the market	72.53	I
4.	Lack of transportation facilities	56.44	II
5.	Lack of organized and regular market	48.12	IV
6.	Shortage of raw materials	34.02	VII
7.	Poor condition of storage facilities	39.47	VI
Communication constraints			
1.	Lack of awareness regarding upgraded tools	48.46	III
2.	Difficulty in using and understanding communication tools	59.39	II
3.	Insufficient training and exposure to communication tools	44.89	V
4.	High cost of communication tools like mobile, computers etc.	73.24	I
5.	Poor infrastructure and interrupted power supply	45.57	IV
6.	Non availability of internet	43.92	VI
7.	Insufficient service centres for communication tools in the village	34.53	VII

development in the tribal areas. The result shown in Table 1 shows that the highest-ranked constraint is 'Domestic work dominates over farming' (63.55), followed by 'Drudgery in various farming operations is more' (56.63) and 'Lack of schooling years and higher studies' (52.14) at second and third rank, respectively.

Extension and training constraints

Extension and training enable tribal farm women to identify and address their needs, assess resources, and enhance farming practices, fostering skill development, knowledge dissemination, and improved livelihoods for sustainable agricultural growth. However, tribal farm women often face unique challenges that hinder their access to such services, thereby limiting their access to vital information in the farming sector. The issue 'Lack of resources and facilities' with the mean score of 62.97 was the top most followed by 'Unsuitability of programme timings for tribal women' (59.41) and 'Improper communication of information from workers' (54.88), which were second and third placed respectively.

Marketing constraints

Marketing enhances tribal farm women's access to agricultural knowledge by fostering stakeholder engagement, group participation, and economic capacity. It supports training, ICT adoption, and institutional networks, facilitating informed decisions, knowledge exchange, and sustainable agricultural practices, thereby strengthening their empowerment and livelihoods. The top three constraints ranked as first, second and third were found to be 'Long distance of the market' (72.53), 'lack of transportation facilities' (56.44) and 'High fluctuation in the demand for produce' (52.41) respectively.

Communication constraints

Effective communication is essential for tribal farm women to access agricultural knowledge on crop management, fertilizers, and implements. Tailored dissemination strategies improve productivity, enhance efficiency, and support informed decision-making for sustainable farming practices (Chandravadia et al., 2018). The communication constraints experienced by the respondents were 'High cost of communication tools like mobile, computers, etc.' (73.24) as the topmost constraints in communication followed by 'Difficulty in using and understanding communication tools' at second (59.39) and 'Lack of awareness regarding upgraded tools' at third (48.46). The other issues were ranked in order up to VII as the last accordingly based on the perception of seriousness by the respondents.

DISCUSSION

Tribal women play a crucial role in agriculture and related sectors, working extensive hours despite facing discrimination. They engage in farming and forest product collection, significantly contributing to household income, particularly in economically disadvantaged families. However, domestic responsibilities hinder their access to agricultural knowledge. This imbalance hinders their access to resources and limits their opportunities for skill development (Suman Kalyani et al., 2011; Shamna et al., 2018;

Raghunathan et al., 2019). The time spent on arduous tasks such as weeding, harvesting, and post-harvest handling reduces the time available for attending training sessions or extension programs. This scarcity of time, coupled with household responsibilities, creates a barrier to accessing knowledge and resources that could improve their farming practices (Tiwari et al., 2023). Limited formal education restricts tribal farm women's access to essential agricultural information, hindering their utilization of ICT tools, extension services, and modern techniques which downtowns productivity and decision-making. Education is crucial in enhancing their knowledge, skills, and confidence, facilitating informed choices and improving socio-economic development within the agricultural sector (Naik & Dasaratharamaiah, 2019; Binjha, 2020; Megerssa et al., 2020).

The absence of resources leads to reduced awareness, minimal skill development, and continued dependence on traditional, less productive farming methods (Aryal & Kattel, 2019; Ramanji et al., 2023). Tribal farm women's access to agricultural and allied sector information conflicts with their daily responsibilities, like household chores, childcare, and farming tasks. Adapting training schedules to their availability is crucial for inclusive agricultural development (Shamna et al., 2018; Srikumar & Saranya, 2019). Improper communication by extension workers leads to misunderstandings, misinformation, or a lack of awareness among tribal farm women. Use of unfamiliar languages, technical jargon, or ineffective delivery methods creates barriers, limiting their access to crucial agricultural and allied sector information, ultimately affecting productivity, income, and sustainable farming practices (Odini, 2014; Dhruw et al., 2020).

The deficiency of the transport network isolates tribal farm women from the reach of training centers, markets, and extension services, limiting their access to agricultural information. Without reliable transport, attending workshops, meeting experts, or accessing modern farming resources becomes difficult, keeping them dependent on traditional, less productive farming methods (Suman Kalyani et al., 2011; Das et al., 2014; Srikumar & Saranya, 2019). The uncertainty over the fluctuations observed in demand trends discourage tribal farm women from actively seeking agricultural information. Without stable markets, they may see no value in new techniques. Limited profitability also restricts access to ICT tools, training, and advisory services, further isolating them from vital agricultural and allied sectors (Raghunathan et al., 2019).

High communication costs limit tribal farm women's access to crucial agricultural information. This restricted access hinders the adoption of modern farm technologies, affecting productivity and economic growth. Lack of awareness about schemes and market prices further marginalizes them (Gireesh et al., 2019; Dhruw et al., 2020). Lack of ICT skills, low literacy, and insufficient regional language content limit their ability to use communication tools effectively. This restricts their knowledge of modern farming, developmental programs, and income enhancement opportunities (Patel et al., 2023; Bhilavekar et al., 2025). Limited awareness of modern tools prevents tribal farm women from accessing vital agricultural information. Their unfamiliarity with new technologies hampers knowledge application, reducing productivity. Relying on traditional tools, they miss opportunities to ease labour and improve

efficiency. Lack of skills and knowledge further restricts their participation in agricultural advancements (Shamna, et al., 2018; Tiwari et al., 2023). With most farm women uneducated and living in rural areas, they struggle to use ICTs for learning new technologies. Suggested solutions include subsidizing mobile devices, offering affordable communication plans, improving rural infrastructure like electricity and internet, and establishing community centers for information sharing, discussions, and access to agricultural resources for improved access to farm-related information for tribal farm women. The above-mentioned findings were in line with those of Rebekka & Saravanan (2015); Mittal & Mehar (2016); Jena et al., (2023).

CONCLUSION

The study emphasises the different challenges encountered by women in agriculture when trying to obtain information related to farming and associated activities, which are classified into socio-psychological, extension and training, marketing, and communication obstacles. The results indicate that domestic duties, the burdens of agricultural work, low literacy levels, and insufficient decision-making authority considerably impede the progress of tribal women in farming. Furthermore, insufficient extension services, training programs predominantly led by men, remote markets, inadequate storage facilities, and restricted access to digital tools continue to hinder their involvement in agricultural progress. To tackle these challenges, it is essential to implement policy measures that include gender-inclusive training, enhanced rural infrastructure, self-help groups, and affordable access to communication tools. Strengthening information networks for women in agriculture is essential for improving their productivity, achieving economic independence, and promoting their overall well-being.

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