

Gender-Based Comparative Analysis of Agricultural Participation among Bonda Men and Women

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Abstract

Highlighting the distinct roles, responsibilities, and contributions within the Bonda tribe in Odisha, a gender-based comparative analysis of agricultural involvement among Bonda men and women had been interpreted here. Drawing on studies by the Odisha Tribal Empowerment & Livelihoods Programme and the NABARD, the analysis delineates the division of labour, with men primarily engaged in ploughing and tool construction, and women in planting, weeding, and harvesting. It emphasizes the continuous and multifaceted workload of women, extending beyond agriculture to household chores and child-rearing, contrasting with the seasonal agricultural involvement of men. The impact of modernization and development programs is discussed, with a noted increase in women's participation in agricultural training. The analysis concludes with recommendations for policy and development interventions to promote gender equity, ensuring equal access to resources and decision-making opportunities.

Keywords: Bonda, Gender, Agriculture, involvement.

INTRODUCTION

The comparative analysis of Bonda men and women involved in agriculture provides a comprehensive examination of the distinct roles, responsibilities, and contributions of both genders within the Bonda tribe [1], [2]. This insightful analysis sheds light on the socio-economic dynamics and cultural practices that shape the agricultural activities of the Bonda community in Odisha, India.

Roles and Responsibilities

The Bonda people, an indigenous group in Odisha, India, have a unique socio-cultural structure [3] that influences the roles men and women play in daily household activities [4]. According to a 2020 study by the Odisha Tribal Empowerment & Livelihoods Programme (OTELP), Bonda men primarily engage in tasks such as ploughing (70% of men reported involvement) and construction of agricultural tools (65% of men), whereas Bonda women predominantly participate in planting (85% of women), weeding (80% of women), and harvesting (90% of women) [5], [6]. This division of labour underscores the complementary nature of their contributions, emphasizing that both genders are indispensable to the agricultural process [7], [8]. The analysis effectively delineates the roles and responsibilities that Bonda men and women assume in agriculture. Both men and women contribute actively to the household, but their roles are distinctly defined and rooted in their traditional [9].

Roles of Bonda Men: Traditionally, Bonda men are hunters and gatherers. They hunt small game and gather forest products like fruits, roots, and medicinal plants [10]. Men engage in shifting cultivation, known as *Podu*, where they clear forest patches for farming. They mainly grow millet, pulses, and oilseeds [11]. They often take surplus agricultural and forest produce to local markets to trade for essential goods [12] and also engage in making traditional tools and weapons like bows and arrows, essential for their livelihood [13].

Roles of Bonda Women: Bonda women play a central role in managing the household. They are responsible for cooking, cleaning, and caring for children [14]. They contribute significantly to agricultural activities, including sowing, weeding,

and harvesting crops. They are highly involved in managing the fields, especially in terrace cultivation [15]. Like many tribal communities, Bonda women are primarily responsible for collecting water and firewood, essential for daily household chores [16]. They weave traditional garments and create handicrafts, contributing to the household's economic stability [17]. They are also responsible for caring for livestock, such as goats and poultry, which add to their household's resources [10].

Social and Economic Roles: In Bonda society, women enjoy a relatively higher social status, as seen in their role in choosing partners during marriage, and also play a dominant role in decision-making within the household [18]. Both contribute equally to the family's economic well-being, as women's participation in agriculture and market-related activities adds significantly to the household income [19], [20].

Workload Distribution

One of the strengths of the analysis is its discussion on workload distribution. The OTELP study found that men's involvement in agriculture is often seasonal, with peak activity during ploughing and harvesting periods. In contrast, women's participation is continuous and multifaceted, extending beyond agriculture to include household chores (100% of women) and child-rearing (95% of women) [21]. This observation underscores the significant and often underappreciated burden borne by women, which is crucial for understanding gender dynamics in rural communities [22]. The distribution of labour between Bonda men and women is a reflection of their subsistence economy and traditional way of life, which includes hunting, gathering, shifting cultivation, and managing the home.

a) *Workload Distribution of Bonda Men:* Bonda men are mainly responsible for clearing forest patches for shifting cultivation (*Podu*). This is labour-intensive and requires cutting down trees and preparing the land for farming [11]. They play a significant role in the heavier tasks associated with farming, such as ploughing and preparing the soil [23], [24]. They traditionally hunt wild animals in the forests, which provides an important source of food for the community, and also gather forest products, such as wild fruits, roots, and other edibles [10]. They usually handle trade-related activities, carrying goods to local markets to sell or exchange for necessary items like salt, oil, and clothes along with purchasing household items that cannot be sourced from their immediate environment [25]. They are responsible for making tools like axes, bows, and arrows, which are vital for their agricultural and hunting activities [26].

b) *Workload Distribution of Bonda Women:* Women are primarily responsible for managing the household, which includes cooking, cleaning, fetching water, and caring for children and elders [18]. They play a significant role in farming, particularly in sowing seeds, weeding, harvesting, and post-harvest processing of crops [27] and often work alongside men in the fields but are more involved in the maintenance of tasks like weeding and tending to the crops [18]. They are tasked with fetching water from streams and rivers, and gathering firewood, which are critical resources for the daily functioning of the household [24]. Their craftwork not only serves the family but can also be sold or traded [28]. While men may take part in livestock care, women are primarily responsible for tending to small animals like goats, chickens, and pigs, ensuring they are fed and well-maintained [29] and they are central to childcare, nurturing children and passing on traditional knowledge and skills related to farming, crafting, and household management [30].

c) *Comparative Insights:* Though men tend to focus on physically intensive tasks like hunting, land clearing, and market trade, women's contributions are equally vital in maintaining the household and ensuring food security through farming, gathering, and household chores [9]. Women handle a steady daily workload, managing domestic and agricultural duties, while men concentrate on seasonal or specialised jobs like hunting and clearing land [31].

Decision-Making

The OTELP study revealed that 75% of agricultural decisions are made by men, reflecting their higher formal decision-making power. Men also have better access to resources and training, with 60% of men reporting participation in agricultural training programs compared to 30% of women [32]. Despite their extensive contributions, women have limited formal decision-making authority.

a) *Role of Men in Decision-Making:* Traditionally, Bonda men hold positions of leadership in village councils (*Patkhanda*), where critical decisions about community welfare, resource use, and conflict resolution are made. These councils consist of elder men, who are respected for their wisdom and experience [33]. They often take charge of decisions regarding interactions with external entities, such as local markets, traders, or government representatives. They decide on matters concerning trade, land disputes, and relationships with other communities [34]. In agriculture, men play a leading role in deciding when and how to prepare land for *Podu* (shifting cultivation), the timing of sowing and harvesting, and the allocation of land [24].

b) *Role of Women in Decision-Making*: Women are central decision-makers in household matters. They oversee daily household management, food preparation, the upbringing of children, and decisions related to family welfare. Bonda women often have the final say in family-related decisions [35]. Although men lead decisions related to land preparation, women actively participate in decisions regarding crop selection, food storage, and the sale or use of produce [16]. Uniquely, significant influence over marriage decisions empowers them with autonomy within their society [19]. They make decisions about what to sell or barter in neighbourhood markets from agricultural and craft production, actively managing household finances and resource allocation [4].

Economic Contributions of Bonda Men and Women:

Economic contributions show disparities; men tend to generate more income by selling surplus crops, while women contribute indirectly by maintaining food security and participating in local markets.

a) *Men's Economic Contribution*: Bonda men contribute to the economy primarily through farming, hunting, and gathering. These activities are essential for the household's food security and income generation [23]. They often take the surplus produce and forest products like millet, oilseeds, pulses, and forest items to local markets for trade. Their role in market exchange helps secure goods that cannot be produced locally, such as salt, clothes, and other essentials [36]. They also contribute by crafting tools, weapons, and other goods, which are either used for farming and hunting or sold in markets [9].

b) *Women's Economic Contribution*: Women are highly involved in the labour-intensive aspects of farming, such as weeding, planting, and harvesting crops. Their active participation ensures a successful harvest, making them key contributors to the family's food supply and income [37]. Handicrafts items made by them are both used within the household and sold in markets, adding to the household's economic stability. The weaving of the traditional cloth *Ringa* is particularly noteworthy [17]. They also take care of livestock after being bartered in the local markets [38]. Women's household responsibilities, such as food processing, storing surplus grains, and ensuring that the family's needs are met, play an essential role in maintaining the family's economic well-being [23].

c) *Complementary Economic Roles*: Together, Bonda men and women ensure the family's survival and well-being [23]. The Bonda household operates as a single economic unit where they contribute equally but in different domains. This cooperative approach ensures resilience in a challenging climate where both agricultural and forest resources are essential for survival [18].

d) *Social and Cultural Influence on Economic Roles*: Bonda women enjoy a relatively higher social status compared to many other tribal communities in India [39]. Family and group decisions usually involve both genders, demonstrating the cooperative nature of Bonda society, even though men predominate in village councils and outside decisions [40].

Access to Resources

Bonda lifestyle is deeply intertwined with the natural environment, and access to resources is shaped by their traditional roles and cultural norms. According to a 2019 report by the National Bank for Agriculture and Rural Development (NABARD), men have better access to agricultural credit (70% of men compared to 20% of women) and training programs (65% of men compared to 35% of women) [2], [41]. Here's an exploration of how Bonda men and women access resources:

a) *Men's Access to Resources*: Bonda men traditionally have greater control over agricultural resources. They manage land clearing, the use of land for *Podu* (shifting cultivation), and crop production. While the land is communally owned, men typically decide how and when land will be used for farming [16]. They also have greater access to forest resources, particularly for hunting and gathering. They collect forest products such as honey, wild fruits, tubers, and medicinal plants (Khosla, 2024, June). Hunting wild animals, which is an essential part of their diet, is primarily the responsibility of men [42]. They are the ones who primarily take the surplus agricultural and forest products to the local markets. Their access to external trade networks provides them with opportunities to exchange goods for other essentials like salt, oil, or clothes, which cannot be locally produced [24]. While women tend to livestock on a daily basis, men typically have more authority in decisions related to selling or trading larger livestock, such as goats or cattle, for economic purposes [43].

b) *Women's Access to Resources*: Women's participation gives men indirect access to agricultural resources, especially when it comes to the management of food supplies [43]. They control household resources such as food supplies, firewood, and water. They manage the storage and processing of food, ensuring that the family's needs are met throughout the year. Women also collect firewood and fetch water from natural sources, which are essential for daily living [16]. They also have significant control over smaller livestock, such as chickens and goats. They manage the daily care of these animals, which contributes to household nutrition and income generation [24]. They access natural fibers

and other raw materials for weaving traditional clothes and making handicrafts. This gives them economic autonomy, as these items can be sold or bartered in the local markets [44]. They also access community resources through their involvement in social activities, ceremonies, and collective agricultural work. Their participation in these activities fosters communal bonds and ensures resource-sharing within the tribe [45].

Cultural Practices

Women's mobility and economic possibilities are frequently restricted by cultural conventions, which also limit their access to resources and development initiatives. Promoting women's empowerment through culturally aware approaches requires addressing these obstacles.

a) *Men's Cultural Practices*: Hunting is not only an economic activity but also a cultural practice deeply ingrained in Bonda men's identity. The skills involved in hunting are passed down through generations, and hunting expeditions are important for maintaining social status within the community [36]. They wear very minimal clothing, typically a loincloth, as part of their traditional dress. This simple attire is symbolic of their connection to nature and their historical way of life [46]. They play significant roles in tribal rituals, ceremonies, and festivals. During these events, they engage in music, dance, and ritualistic practices that are key to maintaining cultural continuity. Festivals often celebrate harvests, fertility, and nature, reflecting their dependence on the natural world [23]. Bonda men, particularly the elders, are often seen as leaders in the community. They preside over village councils (*Patkhanda*) and participate in important decision-making processes that affect the whole community, from resource management to conflict resolution [18].

b) *Women's Cultural Practices*: Bonda women are known for their weaving skills which is also a cultural expression of identity and tradition and *Ringa*, a garment made of natural fibers, which they wear around their waist [18]. They are famous for their traditional jewelry and adorn themselves with heavy bead necklaces, metal rings, and bangles which is part of their identity [47]. They enjoy autonomy in choosing their marriage partners, a rare practice in many indigenous societies. This freedom demonstrates their social agency and is a central cultural practice that influences family dynamics [10]. They actively participate in cultural and religious rituals, especially those related to fertility, marriage, and the agricultural cycle. Their role in these ceremonies is essential for maintaining the spiritual and cultural fabric of the Bonda community [39]. In Bonda culture, women exert considerable influence in household decision-making and social relationships. Although men may hold leadership positions in the community, women's voices are highly respected within the household, and they often take the lead in family matters [39].

c) *Gender Dynamics in Resource Access and Cultural Practices*: The division of labour and cultural roles between men and women is complimentary. While men control larger-scale resources like land, forests, and market exchanges, women manage crucial household resources and agricultural tasks that are essential for day-to-day survival [48]. In their society, men depend on women for managing the household, food preparation, and agricultural support, while women rely on men for hunting, land clearing, and external market exchanges ensuring mutual dependency [49]. While men may dominate in formal leadership positions, women enjoy a relatively higher status compared to other indigenous or rural communities. Their influence in family decisions, economic contributions through craft production, and role in marriage give them significant social power [1].

IMPACT OF MODERNIZATION AND DEVELOPMENT PROGRAMS

Modernization and development programs have had a profound impact on the Bonda people, influencing both men and women in different ways. The discussion on the impact of modernization and development programs is particularly relevant. The NABARD report indicates that men are more likely to adopt new technologies (55% of men compared to 25% of women), whereas women benefit from initiatives focused on empowerment and capacity-building [50].

A: Impact on economic roles and livelihoods

Bonda men: Development programs, such as the introduction of commercial agriculture and restrictions on forest access, have disrupted traditional livelihoods like shifting cultivation (*Podu*), hunting, and gathering. With forest conservation policies limiting access to forest resources, Bonda men are losing their roles as hunters and gatherers [34]. Modernization has pushed many Bonda men into wage labour outside their traditional village economies. Some have migrated to nearby towns and cities for work, often taking up low-paying, unskilled jobs in construction or agriculture. This shift can undermine their connection to their traditional ways of life and cultural identity [51]. Bonda families' economic independence has decreased as a result of their growing dependency on government assistance programs due to the collapse of traditional subsistence methods [18].

Bonda women: Introducing modern farming techniques and cash crop cultivation, Bonda women's role in traditional agriculture has been altered. The shift from subsistence farming to market-oriented agriculture reduces their influence over food production and household sustenance [16]. On the positive side, development programs promoting tribal crafts have provided Bonda women with new economic opportunities. Programs aimed at preserving traditional weaving and handicrafts have helped women generate income by selling their products in markets or through cooperatives [28]. With men migrating for wage labour, Bonda women often bear a greater burden in maintaining the household and managing agriculture, leading to increased workloads. This can intensify the challenges they face in balancing traditional roles with new economic pressures [52].

B: Impact on Access to Resources

Bonda Men: Government policies aimed at forest conservation and wildlife protection have restricted Bonda men's access to the forests, which are essential for hunting, gathering, and traditional agricultural practices [53]. These restrictions have weakened their economic independence and traditional role as providers [54]. Development projects, such as mining, dams, and infrastructure expansion, have led to displacement in some tribal areas. Loss of ancestral land threatens the Bonda community's relationship with the land and diminishes men's control over agricultural resources [14], [55].

Bonda Women: With restrictions on forest access, women face difficulties in collecting firewood, water, and forest products, which are essential for household maintenance. This has increased the time and effort required for resource gathering [56]. While men engage more with external markets and wage labour, women may have limited access to the financial benefits derived from these activities. This imbalance can diminish women's control over household resources, despite their continued involvement in agricultural and domestic work [23].

C: Impact on Social and Cultural Practices

Bonda Men: As modernization introduces external influences, traditional leadership structures (such as village councils led by elder men) are losing relevance [57]. The adoption of modern lifestyles, particularly among younger men, has led to a decline in traditional practices, such as hunting and the wearing of traditional attire. Exposure to modern education and urbanization has led to changes in social values, potentially causing a detachment from the tribe's cultural roots [28].

Bonda Women: Women, especially those engaged in preserving traditional weaving and handicrafts, play a critical role in maintaining cultural identity [16]. However, modernization has introduced new clothing styles and cultural norms that are slowly replacing traditional dress and customs [58]. Modernization has introduced new ideas about gender equality and empowerment, which can have both positive and negative impacts. Development programs may empower Bonda women but could disrupt traditional roles, potentially causing generational tensions within the society [40].

D: Impact on Education and Health

Bonda Men: Development programs promoting education have opened up opportunities for to access formal schooling. While this offers new career possibilities, and often draws young men away from traditional knowledge systems and cultural practices [59]. Lack of proper healthcare infrastructure in tribal regions has compounded health challenges, such as alcoholism issues [60].

Bonda Women: Educating Bonda girls offers better socioeconomic mobility but may create conflicts between traditional expectations and modern aspirations [33]. Modern health programs have reduced infant mortality and improved women's health, but traditional practices are fading, and healthcare quality in remote areas remains a challenge [61].

E: Impact of Government Welfare Programs

For Men: Programs such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) provide temporary employment to Bonda men. While this improves short-term income, it does not address the long-term sustainability of their traditional livelihoods [62]. Over-reliance on government aid programs such as Public Distribution System (PDS) for food security can erode self-sufficiency, making men more dependent on external resources [63].

For Women: Government and NGO programs focused on tribal women's empowerment, skill development, and microfinance have opened up new economic opportunities for Bonda women. These initiatives, such as self-help groups (SHGs), can give women greater financial independence and decision-making power [64]. Programs focused on women's healthcare, nutrition, and sanitation have improved living conditions, though the reach and effectiveness of these programs vary [14].

F: Impact of Technologies

Rapid technological development, especially in the area of artificial intelligence, could have a big impact on how Bonda women and men are empowered in their communities [65], [66].

When AI-based solutions are incorporated into many facets of teaching and learning, the education sector is already beginning to undergo a revolution [65], [66], [67]. Examining how these technological advancements might impact the Bonda community, whose traditional knowledge and practices are firmly anchored in their cultural identity, is essential as the educational system grows more adaptable and flexible to meet the requirements of individual learners as well as enable them to complement each other which in turn minimizes gender disparity.

POLICY IMPLICATIONS

The analysis concludes with practical recommendations for policy and development interventions. It advocates for ensuring equal access to resources and training for both genders, encouraging women's participation in decision-making, and addressing cultural norms that restrict women's opportunities. These recommendations are well-founded and provide a clear roadmap for promoting gender equity in agricultural development.

CONCLUSION

Men and women play different but complementary roles in the Bonda community, which thrives on collaboration. Women are in charge of homes, food, and crafts, while men are in charge of trade, hunting, and agriculture. Both cultural preservation and economic survival are guaranteed by this equilibrium. Development initiatives, however, frequently upend these norms, adding to women's responsibilities and encouraging reliance on outside sources. Bonda cultural traditions should be preserved while modernization is incorporated into sustainable development.

The analysis of gender dynamics in Bonda agriculture provides important insights about cultural influences, resource inequalities, and the complementary roles of men and women. It is an extensive resource for policymakers, development practitioners, and researchers in gender studies and rural development since it incorporates useful suggestions for gender equity and uses real data from OTELP and NABARD. It also depicts the possible impact of technology in maintaining gender equity through the provision of AI-based education and training.

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