# **Profiling Innovative Farm Women in Coastal Odisha: Socio Demographic-Economic-Communication Perspectives**

# **ABSTRACT:**

In Indian society, women have a multi-dimensional role. A significant proportion of women in India participate in agricultural activities, serving as cultivators, supervisors, or labourers in the farming sector. A comprehensive investigation was carried out to evaluate the socio-economic characteristics of women engaged in agriculture within the coastal districts of Odisha for the year 2023-24, emphasising their contributions to agricultural networking and the dissemination of information. A random sampling technique was utilised to choose 240 participants from Ganjam district, noted for having the highest proportion of female agricultural labourers. Data collection was conducted via household surveys in the years 2023-24, focussing on various factors including age, education, caste, family structure, family size, marital status, farming experience, type of housing, social engagement, and cosmopolitanism. The results reveal that a substantial majority of participants (65.83%) are situated in the productive age range of 30-50 years, with a noteworthy percentage (70%) identified as part of the General caste category. The levels of education exhibited considerable variation, with 40.83% achieving a high school education, underscoring the significance of literacy in making agricultural decisions. The analysis further examined economic parameters, indicating that 48.33% of the participants belong to the medium-income category. Furthermore, the evaluation of communication and extension participation revealed that 49.17% of individuals had a moderate level of communication resources, yet exposure to mass media and involvement in extension activities were notably limited. The results highlight the necessity for enhanced access to agricultural communication resources and services that are responsive to gender considerations. This investigation enhances comprehension of the socio-economic dynamics surrounding coastal farm women and their contributions to agricultural development, highlighting the significance of improved networking and information sharing.

Keywords: Agriculture; farm women; Odisha; socio-economic attributes.

**INTRODUCTION**

Agriculture serves as a fundamental pillar of the Indian economy. A significant portion of the population in India relies on agriculture as their primary source of income. Agriculture plays a crucial role in the Indian economy, accounting for approximately 70 percent of the total GDP and offering employment to more than 60 percent of the population. Women in rural areas engage in agricultural practices and associated activities. They account for 75 percent of the workforce necessary for operations. Approximately 36 million women participate in agricultural activities as primary labourers, encompassing tasks from planting to harvesting and storing produce in bins and bags.

The coastal districts of Odisha, India, showcase a distinctive socio-economic environment, especially regarding the roles and networks of women engaged in agriculture. This area consists of seven districts, representing 16% of the state's land area and housing 33% of its inhabitants (Kumar et al., 2019). A considerable segment of the population in these districts depends on agriculture as their primary source of income. Nevertheless, the total work participation ratio in these districts falls short of the state average (37.9% compared to 43.2%), with merely 25.8% involved in agriculture, in contrast to the state average of 31.5%. The Female Agricultural Work Participation Ratio (FAWPR) stands at 13.4%, reflecting a significant difference of 9.2% compared to the state average of 22.6% (Kumar et al., 2019). Regardless of these statistics, women are integral to agricultural practices, frequently engaging in demanding labour tasks.

Additionally, they engage in activities beyond the farm, such as the processing and marketing of agricultural products. Women hold an important position in agricultural practices and management, primarily participating as cultivators, assisting cultivators, or working as agricultural labourers. They engage in various aspects of agricultural advancement and related sectors, encompassing crop production, livestock management, horticulture, post-harvest processes, agro and social forestry, fishing, and more. The emergence of Information and Communication Technologies (ICTs) has started to impact the lives of rural women in Odisha, presenting possible pathways for social transformation and enhanced access to resources (Satapathy, 2014). Nonetheless, obstacles remain, such as constrained decision-making authority and limited access to information, which are intensified by the effects of climate change (United Nations Environment Programme, 2019). Grasping the socio-economic profiles and networking structures of these farm women is crucial for formulating specific interventions that improve their livelihoods and resilience. Therefore, this study aims to evaluate the socio-economic conditions of women engaged in agricultural activities within the coastal districts of Odisha.

Chowdhury and Bose (2014) found that education, farm income, transportation, size of holding, communication items and social participation have positively affected the access to farm information by the farm women. Haldar (2014) found that the majority of rural people had low level of personal cosmopoliteness followed by medium and high level of personal cosmopoliteness. Jeamponk and Thipsaeng (2014) found that most of the respondents had high level of farming experience followed by medium and low level of farming experience. Manjunatha and Gangadhar (2018) found that the literacy rate of Jenukuruba women is low. They are deprived of acquiring an education due to the various social, personal, and economic factors that are directly related to them not getting outside jobs. Only a few Jenukuruba women have land ownership or house ownership. Most of the Jenukuruba women have to work more in agriculture but have comparatively less decision-making power than their male counterparts. However, the decision-making role of men is superior in most of the variables. According to Patel and Sharma (2020), literacy levels among tribal farm women in India are significantly lower compared to their coastal counterparts. In tribal districts of Odisha and Jharkhand, more than 60% of farm women have only primary education or are illiterate which limits their ability to access formal agricultural extension services and market information. In contrast, coastal women, particularly in Kerala and Tamil Nadu, have higher literacy rates, with many women having completed secondary education, which enhances their ability to engage in market-oriented farming. According to Meena et al. (2021), farm women in tribal districts primarily engage in subsistence farming, with limited participation in market-oriented agriculture. Their income levels are generally lower than those of coastal women, who often diversify their income sources through fishing, aquaculture, and cash crop cultivation. Bello et al. (2024) reported that in coastal Africa, extension services are often male-dominated and not tailored to the needs of women farmers, reducing their effectiveness.

**MATERIAL AND METHODS**

The district “Ganjam” was selected randomly out of 7 coastal districts of Odisha. Furthermore, Ganjam district exhibits the highest proportion of female agricultural workers within its farming community (Kumar et al., 2019). A random sampling design was employed to choose the participants for the investigation. For this study, two coastal districts were chosen at random, both exhibiting comparable agro-climatic zones. From the chosen districts, two blocks were identified, and from each block, two villages were randomly selected. An evaluation of the socio-economic status of the respondents was carried out in 2023-24 through a household survey that examined factors such as social status, age, education, family type, and average family size, focussing specifically on the farm women involved in agricultural activities. A total of 240 households were chosen for the analysis.

**RESULT AND DISCUSSION**

**Socio-demographic profile**

**Age**: By examining and categorising the age data of the respondents, three distinct categories have been established. The findings presented in Table 1 indicate that a significant portion of participants (65.83%) fell within the middle age range of 30 to 50 years, as they are more actively engaged in labour-intensive agricultural practices while managing both household and farm responsibilities. This was followed by younger participants (under 30 years) at 20.00% and older participants (over 50 years) at 14.17%. The data reveals that a significant portion of the respondents falls within their productive years, corroborating earlier studies that indicate a predominance of middle-aged individuals in agricultural practices within coastal areas (Jena & Kanungo, 2022).

**Caste**: The study reveals that 70.00% of the respondents belong to the General (GEN) category, while 30.00% are from the Other Backward Classes (OBC). No participants were identified from the Scheduled Caste (SC) or Scheduled Tribe (ST) groups. Recent studies have observed a similar stratification based on caste within agricultural communities (Murali, 2021).

**Education**: Table 1 revealed that the majority of respondents (40.83%) have received higher school education, followed by 30.00% with middle school education, 17.50% who are graduates or above, 10.00% with primary education, and 1.67% who are illiterate. Education plays a crucial role in the adoption of innovative agricultural practices (Begho et al., 2022).

**Family Type**: Table 1 revealed that the majority (62.50%) of the respondents belong to nuclear family followed by (37.50%) joint family as the respondents are getting nuclear homes due to urbanization and industrialization and have better status similar to the findings of Sharma (2022).

**Family size:** Table 1 indicates that the largest proportion of respondents (56.67%) belong to medium-sized families consisting of 5-8 members, followed by those with small families (up to 4 members) at 29.17%, and finally, respondents from large families (more than 8 members) at 14.16%. The results indicate a shift in the family size of the respondents over time, with a growing preference for medium-sized families. This trend aligns with the latest demographic changes observed in rural India (Preethi and Channal, 2022).

**Marital status**: The information presented in Table 1 indicates that a significant portion of participants (60.00%) were married, followed by unmarried individuals (29.17%) and widows (10.83%). There were no reports of divorce among the respondents. The institution of marriage is crucial for social and economic stability, impacting decisions related to agriculture (Yadav et al., 2021). It can be inferred that the respondents, despite their diverse geographic backgrounds, are balancing household responsibilities, family, and children alongside their farming activities.

**House type**: A significant percentage of participants (48.33%) inhabit semi-pucca dwellings, whereas 36.67% live in pucca houses, and 15.00% in kutcha structures. The classification of housing indicates economic stability and availability of financial resources, aligning with the observations made by Rao and Biswas (2022). These results suggest that the individuals in the coastal district exhibit a more favourable housing pattern.

**Farming experience**: The experience of farming plays a vital role in examining the socio-economic conditions of women in agriculture, as it can greatly affect numerous facets of their lives and professional endeavours. This analysis offers a deeper understanding of the influences of time, skill enhancement, and evolving roles on individuals' social and economic standing. Table 1 clearly indicates that a significant portion (65.83%) possesses over five years of farming experience, whereas 27.50% have between three to five years, and merely 6.67% have three years or less of experience. There is a positive correlation between experience and farming efficiency, as well as the adoption of enhanced techniques (Patra et al., 2023).

**Social participation**: Table 1 clearly indicates that a majority of respondents (65.00%) demonstrate a medium level of social participation, while 27.50% show low participation, and only 7.50% display high participation. This indicates a reasonable level of involvement in community-oriented agricultural projects (Patel, 2024). The coastal respondents, possessing higher education and farming experiences, are likely to exhibit greater social participation, attributed to their established networks and enhanced resource availability.

**Cosmopoliteness**: It shows the outward orientation of an individual. It is important for an individual to be cosmopolite to have the maximum degree of established networks. An insightful analysis of Table 1 indicated that a considerable percentage (55.00%) of participants are classified within the medium cosmopoliteness category, with 38.33% in the low category, and merely 6.67% in the high category. The concept of cosmopoliteness is associated with the exposure to a variety of agricultural knowledge systems (Krishna & Rao, 2023).

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| **Table 1 Socio profile of the respondents (n=240)** | | | |
| **Sl. No.** | **Variable** | **Categories** | **Coastal *f* (%)** |
| 1. | Age | Young (<30)  Middle-aged (30-50)  Old (>50) | 24 (20.00)  79 (65.83)  17 (14.17) |
| 2. | Category (Caste) | SC  ST  OBC  GEN | 0 (0.00)  0 (0.00)  36 (30.00)  84 (70.00) |
| 3. | Education | Illiterate (Cannot read and write)  Primary school  Middle school  Higher school  Graduate or above | 2 (1.67)  12 (10.00)  36 (30.00)  49 (40.83)  21 (17.50) |
| 4. | Family type | Nuclear  joint | 75 (62.50)  45 (37.50) |
| 5. | Family size | Small (≤4 members)  Medium (5 – 8 members)  Large (>8 members) | 35 (29.17)  68 (56.67)  17 (14.16) |
| 6. | Marital status | Unmarried  Married  Divorce  Widow | 35 (29.17)  72 (60.00)  0 (0.00)  13 (10.83) |
| 7. | House type | Kutcha  Semi Pucca  Pucca | 18 (15.00)  58 (48.33)  44 (36.67) |
| 8. | Farming experience | ≤ 3 years  years  >5years | 8 (6.67)  33 (27.50)  79 (65.83) |
| 9. | Social participation | Low (<1.54)  Medium (1.55-9.12)  High (>9.12) | 33 (27.50)  78 (65.00)  9 (7.50) |
| 10. | Cosmopoliteness | Low (<7.76)  Medium (7.77-17.96)  High (>17.96) | 46 (38.33)  66 (55.00)  8 (6.67) |

**Socio economic profile of the respondents**

**Annual income**: The livelihood and communication patterns of rural farm women are notably affected from the income. A person's income plays a crucial role in the decision-making process. Accessing the annual income of these farmwomen poses challenges due to the absence of record-keeping. The investigator has undertaken thorough enquiries to evaluate the income of the respondents, categorising it into three distinct levels: low, medium, and high. The findings indicate that a considerable portion of respondents (48.33%) falls within the "medium" income level, while (37.50%) are classified as “low” income, and (14.17%) as “high” income. This may be attributed to respondents from coastal regions having multiple income sources beyond agriculture, such as fishing. The data clearly illustrates that those from coastal areas enjoy enhanced livelihoods, better access to education, and additional resources, all of which are vital for improved communication and networking.

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| **Table 2 Socio economic** **profile of the respondents (n=240)** | | | |
| **Sl. No.** | **Variable** | **Categories** | **Coastal *f* (%)** |
| 1. | Annual income | Low (up to Rs 1,43,689)  Medium (1.43,689-2,83,428)  High (more than 2,83,428) | 17 (14.17)  58 (48.33)  45 (37.50) |

Garph .1 **Annual income of the respondents**

**Communication profile of the respondents**

**Communication material possession**: Table 3 indicates that almost half of the participants (49.17%) reported a medium level of communication material possession, while (44.16%) had a low level, and merely (6.67%) exhibited high levels of communication materials. This indicates that a considerable number of women in agriculture face restrictions in accessing both printed and digital communication tools, potentially obstructing their capacity to obtain and apply agricultural knowledge. Comparable investigations suggest that restricted access to communication resources adversely impacts agricultural decision-making and the adoption of technology (Meena et al., 2021).

**Mass media exposure**: An insightful analysis of Table 3 indicates that a significant 49.17% of participants experienced a medium level of exposure, with a near equal 48.33% reporting a low level, and a mere 2.50% indicating a high level of mass media exposure. The limited interaction with mass media channels could be attributed to various factors, including digital illiteracy, inadequate infrastructure, or time constraints arising from household and agricultural duties. Recent findings emphasise that mass media is essential for spreading agricultural innovations; however, rural women frequently encounter barriers in utilising mass communication resources (Kumari & Singh, 2022).

**Extension participation**: Regarding involvement in extension activities, 50.83% of the respondents indicated a medium level of participation, while 39.17% reported low engagement, and only 10.00% were highly active in extension programs. The observed lower engagement in extension services by coastal farm women indicates potential obstacles, including mobility limitations, insufficiently tailored extension methods for women, or cultural barriers. Prior investigations highlight that extension services tailored to gender considerations can greatly improve the involvement of women in agricultural training and the adoption of technology (Chaudhary et al., 2023).

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| **Table 3 Communication profile** **of the respondents (n=240)** | | | |
| **Sl. No.** | **Variable** | **Categories** | **Coastal *f* (%)** |
| 1. | Communication material possession | Low (<1.38)  Medium (1.39-4.92)  High (>4.92) | 53 (44.16)  59 (49.17)  8 (6.67) |
| 2. | Mass media exposure | Low (<11.99)  Medium (12.00-20.93)  High (>20.93) | 58 (48.33)  59 (49.17)  3 (2.50) |
| 3. | Extension participation | Low (<5.92)  Medium (5.93-15.92)  High (>15.92) | 47 (39.17)  61 (50.83)  12 (10.00) |

**Graph. 2: Communication profile** **of the respondents**

**CONCLUSION**

The socio-demographic, economic, and communication profiles of coastal farm women show how agricultural and household changes affect them. Most responders are 30–50 years old, indicating their labour-intensive farming. A large majority (70%) is General, with notable presence of higher education (40.83%). Nuclear families (62.50%), especially medium-sized ones, predominate. 60 percent of respondents are married and live in semi-pucca dwellings, indicating moderate economic stability. 65.83% of farmers have more than five years of experience, affecting their decisions. Social involvement is medium (65%), while cosmopoliteness is low. With 48.33% medium-income, financial diversification is evident. Lack of communication tools and mass media exposure suggests stronger information dissemination tactics are needed to promote agricultural innovation uptake.   
The study's findings will help policymakers and extension workers understand farm women's socioeconomic situation in Ganjam district, Odisha, and develop better extension strategies and action plans for coastal farm women.

**DISCLAIMER (ARTIFICIAL INTELLIGENCE)**

Author(s) hereby declares 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.

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