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Participation level of male and female labours in agricultural activities

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Abstract

Agriculture remains the backbone of many economies in worldwide, providing livelihoods for millions of people. However, the agricultural sector is also characterized by significant gender disparities, with men and women often having different roles, responsibilities, and levels of participation. Despite their crucial contributions to agricultural production, women often face significant barriers to equal participation, including limited access to land, credit, and technology. This article aims to explore the current state of male and female labor participation in agricultural activities, highlighting the challenges, opportunities, and implications for promoting greater gender equality in the sector. A total of 300 respondents were randomly selected from the three villages. Data was collected through personal interviews method using a self-structured interview schedule. Suitable statistical tools were used to analyze the data.

Keywords: Agriculture, labor, male-female participation, rural livelihoods, productivity

Introduction

Agriculture is the backbone of many economies worldwide, providing livelihoods for millions of people, particularly in rural areas. The sector is a significant contributor to the global food supply, accounting for approximately 25% of the world's GDP. However, despite its importance, the agricultural sector is also characterized by significant gender disparities, with men and women often having different roles, responsibilities, and levels of participation.

In many developing countries, women play a vital role in agricultural production, contributing up to 70% of the labor force (FAO, 2011) [3]. However, despite their crucial contributions, women often face significant barriers to equal participation, including limited access to land, credit, and technology. This not only affects their ability to participate in agricultural activities but also perpetuates the cycle of poverty and inequality.

The participation level of male and female labors in agricultural activities is a critical issue that requires attention from policymakers, researchers, and practitioners. Understanding the dynamics of male and female labor participation in agriculture is essential for promoting greater gender equality, improving agricultural productivity, and reducing poverty.

Research has shown that women's participation in agriculture is often limited to traditional roles such as planting, weeding, and harvesting, while men dominate decision-making positions and control over resources. This division of labor not only perpetuates gender stereotypes but also affects women's ability to access markets, credit, and other resources.

Furthermore, the lack of recognition of women's contributions to agriculture is a significant challenge. Women's work in agriculture is often invisible, and their contributions are not adequately valued or compensated. This not only affects their economic empowerment but also perpetuates the cycle of poverty and inequality.

In recent years, there has been a growing recognition of the importance of promoting gender equality in agriculture. Initiatives such as the United Nations' Sustainable Development Goals (SDGs) and the African Union's Agenda 2063 have highlighted the need to promote gender equality and women's empowerment in agriculture.

In this article, we aim to explore the current state of male and female labor participation in agricultural activities, highlighting the challenges, opportunities, and implications for promoting greater gender equality in the sector.

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We will examine the existing literature on the topic, highlighting the key findings, trends, and gaps in research. We will also discuss the policy and practical implications of promoting gender equality in agriculture, highlighting the need for a more inclusive and equitable approach to agricultural development.

Objective

1. To analyze and compare the participation levels of male and female labors in agricultural activities.
2. To assess the impact of gender disparities in agricultural labor participation.

Methodology

The present study was conducted in three villages, namely Mandihal, Magalagatti, and Timmapur, located in Dharwad district of Karnataka State, India, under the DST project "Strengthening Livelihood Systems of Rural Community through On-Farm and Off-Farm Innovations" during the year 2024-25. A total of 300 respondents were randomly selected from the three villages.

Data was collected through personal interviews method using a self-structured interview schedule. The respondents were interviewed in person to gather information on their participation in agricultural activities. The collected data was tabulated, analyzed, and interpreted in light of the study objectives. Inferences were drawn based on the analysis to address the research questions.

Results and Discussion

Table 1 indicates the profile of selected households in Mandihal, Mangalagatti, and Timmapur provides insights into the age distribution, family types, education levels, occupation, and landholdings within these communities.

In terms of age distribution, the majority of respondents are in the middle-age group (36-50 years), with percentages ranging from 42 percent to 46 percent across the villages. Younger respondents (18-35 years) make up 33% to 36%, while older individuals (above 51 years) account for 18 percent to 24 percent of respondents.

Regarding family type, the trend shows a dominance of nuclear families, with percentages ranging from 77 percent to 86 percent, while joint families make up 14 percent to 23 percent.

In terms of caste distribution, OBC households are the highest in Mandihal (26%), Mangalagatti (29%), and Timmapur (22%). SC and ST households are consistent at 20 percent each across the villages, while households classified under "Others" vary from 31 percent to 38 percent. The results are in line with the results of (Agarwal 2014) [1].

When considering education levels, a large proportion of respondents across all villages are either illiterate or have only completed primary school (29%-39% and 31%-37%, respectively). The proportion of respondents with higher

education, such as high school (19%-24%) and degree (2%-4%), remains quite low.

For occupation, agricultural laborers are the most common, especially in Mangalagatti (55%) and Mandihal (42%). Agriculture is another prominent occupation, especially in Mandihal (35%) and Timmapur (31%). A smaller proportion of people are involved in non-agricultural labor or service/business sectors.

The data on landholdings indicates that small landholders (1-5 acres) make up the majority in all three villages (63%-74%), followed by landless households (13%-22%). The proportion of marginal and large landholders is relatively small, with marginal holdings ranging from 7% to 12 percent and large holdings from 3 percent to 6 percent.

Income levels show that most households fall in the middle-income bracket (Rs 31,075.36 - Rs 95,209), with percentages ranging from 52 percent to 54 percent. Low-income households make up about 25 percent to 32 percent, while high-income households are the least common, ranging from 15 percent to 21 percent.

Finally, when it comes to domestic animals, cow ownership is the most widespread, particularly in Timmapur (36%). Bullock ownership is more common in Timmapur (23%) and Mandihal (19%), while buffalo ownership ranges from 12 percent to 16 percent. A notable percentage of households in Mangalagatti (39%) do not own any animals, whereas only 11 percent in Timmapur report the same. The result of the study is parallel with study conducted by Kumar and Quisumbing (2015) [4].

On the whole, the data reveals that the majority of respondents are middle-aged, with a dominance of nuclear families. OBC households are the highest in all three villages. Education levels are relatively low, with a large proportion of respondents being illiterate or having only completed primary school. Agricultural laborers are the most common occupation, followed by agriculture. Small landholders make up the majority, and most households fall in the middle-income bracket. Cow ownership is the most widespread, particularly in Timmapur.

Table 2 shows gender disparities in access to manual agricultural technologies in the selected villages of Dharwad Taluka. For preparatory tillage, Plough/Tractor plough and Harrow/Disc Harrow are typically operated by men, who are involved in the initial soil preparation. For manuring, the use of wooden/plastic baskets or plastic buckets is primarily performed by women, reflecting their role in manual labor for gathering and transporting materials. Similarly, sowing is also a shared activity, with both men and women using hand sowing methods or seeders.

When it comes to weeding and inter-cultivation, men generally use implements like sickles and cultivators, while women also use the Kurupi (a hand tool for weeding), sickles, and other tools for cultivating and maintaining crops. Additionally, spades, pickaxes, and axes are typically handled by men, suggesting a gendered division of labor in the more physically demanding tasks.

Table 1: Profile of Selected Households

N=300

Sl. No	Particulars	Mandihal (n=100)	Mangalagatti (n=100)	Timmapur (n=100)
Age of the Respondent				
1	Young (18 - 35 Yrs)	33.00	36.00	34.00
2	Middle age (36-50 yrs)	43.00	46.00	42.00
3	Old age (>51 yrs)	24.00	18.00	24.00
Family Type				
1	Nuclear	77.00	86.00	77.00
2	Joint	23.00	14.00	23.00
Households by Caste				
1	SC	20.00	20.00	20.00
2	ST	20.00	20.00	20.00
3	OBC	26.00	29.00	22.00
4	Others	34.00	31.00	38.00
Education				
1	Illiterate	29.00	32.00	39.00
2	Primary school	34.00	37.00	31.00
3	High school	24.00	21.00	19.00
4	PUC	10.00	6.00	9.00
5	Degree	3.00	4.00	2.00
Households by Occupation				
1	Agriculture	35.00	29.00	31.00
2	Agri- Labor	42.00	55.00	44.00
3	Non-Agri- Labour	11.00	18.00	15.00
4	Service/Business	12.00	8.00	10.00
Households According to Landholdings				
1	Landless	22.00	13.00	18.00
2	Small(1-5 acres)	63.00	74.00	69.00
3	Marginal(5-10 acres)	12.00	9.00	7.00
4	Large(>10 acres)	3.00	4.00	6.00
Income Level				
1	Low(<Rs 31075.36)	25.00	28.00	32.00
2	Middle (Rs 31075.36 -RS 95209)	54.00	52.00	53.00
3	High (>Rs 95209)	21.00	20.00	15.00
Domestic Animals				
1	Bullock	19.00	14.00	23.00
2	Cow	30.00	27.00	36.00
3	Buffalow	16.00	12.00	21.00
4	Goat/Sheep/Hen	6.00	8.00	9.00
5	No animals	29.00	39.00	11.00

For harvesting, women and men both use sickles, with women playing a central role in the harvesting process. In threshing and processing, men predominantly use tools like

the chaff cutter and wooden rake, while tasks like storage and marketing involve men using gunny bags for storing and transporting harvested crops.

Table 2: Gender Disparities in Access to Manual Agricultural Technologies

N=300

Sl. No	Purpose for which it is used	Name of the technology/implement	User of technology		
			Men	Women	Both
1	Land Preparation	Harrow/Disc Harrow	√		
		Plough/Tractor plough	√		
2	Manuring	Wooden/plastic basket/plastic bucket			√
3	Sowing	Hand sowing , Seeder			√
4	Weeding and inter-cultivation	Sickle, Cultivator			√
		Kurupi			√
		Spade, Pickaxe, Axe	√		
5	Harvesting	Sickle			√
6	Threshing& processing	Chaff cutter, Wooden rake	√		
		Hanging cum cleaner grader			√
7	Storage & marketing	Gunny bags	√		

Table 3: Gender Disparities in Access to Animal-Drawn Implements

Purpose for which it is used	Name of the technology/implement	User of technology		
		Men	Women	Both
Preparatory tillage	Harrow, Plough	√		
Sowing	Seeder			√
Weeding and intercultivation	Cultivator, Harrow	√		
Threshing& processing	Roller			
Marketing& Transportation	Bullock cart	√		

N=300

Gender disparities in access to animal-drawn implements in the selected villages are used for a variety of agricultural tasks, with specific tools assigned based on gender was depicted in Table 3.

For preparatory tillage, tools such as the Harrow and Plough are primarily operated by men, reflecting their role in the heavier tasks of land preparation. In contrast, for sowing, the Seeder is a tool used by both men and women, indicating a shared responsibility in planting crops. The results are on par with results of Mishra *et al.* (2017) [5].

When it comes to weeding and inter-cultivation, men typically use animal-drawn implements such as the Cultivator and Harrow. These tools help in maintaining the crops, breaking soil, and ensuring proper growth during the growing season.

For threshing and processing, the Roller is utilized by men, a task that involves the use of animals to flatten and separate grain from the stalks.

Finally, for marketing and transportation, the Bullock cart is predominantly used by men, facilitating the transportation of goods and produce to markets or storage areas.

Table 4 reveals the data on gender participation in agricultural activities across three villages—Mandihal, Mangalagatti, and Timmapur—reveal varying levels of involvement for both men and women in different tasks.

Mandihal, women are exclusively involved in activities such as removing stalks/cleaning (20% women exclusive) and weeding (100% women exclusive). For transportation of manure, topdressing of fertilizer, and sowing, there is significant male involvement, with men having exclusive participation (83%, 9%, and 53%, respectively). In gathering and heaping, men dominate the activity (88% men exclusive), while women hold a minor role (12%).

In Mangalagatti, removing stalks/cleaning also sees

considerable participation from women (26% women exclusive), while men dominate the task (63% men exclusive). Transportation of manure is primarily done by men (72% men exclusive), with women having some participation (16% women exclusive). For topdressing of fertilizer and sowing, both men and women are involved, with women having a slight dominance in the latter (46% women exclusive in sowing). Weeding is exclusively performed by women (100% women exclusive), and for gathering and heaping, men dominate the activity (73% men exclusive).

In Timmapur, removing stalks/cleaning is largely dominated by men (71% men exclusive), with women holding a smaller role (14% women exclusive). Transportation manure sees men as the primary participants (65% men exclusive), though women also take part (19%). Topdressing of fertilizer has more balanced involvement, with women slightly outnumbering men (41% women exclusive). Sowing is again a male-dominated activity (49% men exclusive), while weeding remains an entirely female task (100% women exclusive). In gathering and heaping, men have a larger role (69% men exclusive). The result of the study contradictory with the findings of the study conducted by Renu (2023) [6].

Overall, the data highlights that women have exclusive participation in weeding across all regions. However, removing stalks/cleaning and gathering and heaping are more male-dominated in Mandihal and Mangalagatti, with women playing a secondary role. Activities like sowing and topdressing of fertilizer show mixed or slightly dominated participation, with men often taking the lead. Gender roles vary significantly by region and activity, with clear patterns of male dominance in tasks involving heavier or more technical labor.

Table 4: Gender-wise Participation of the selected respondents in Agricultural Activities

N=300

Activity	Gender participation														
	Mandihal (n=100)					Mangalagatti(n=100)					Timmapur(n=100)				
	WE	WD	ME	MD	EP	WE	WD	ME	MD	EP	WE	WD	ME	MD	EP
Removing of stalks/cleaning	20.00	5.00	-	-	75.00	26.00	11.00	-	-	63.00	14.00	15.00	-	-	71.00
Transportation of manure	-	-	83.00	3.00	14.00	-	-	72.00	12.00	16.00	-	-	65.00	19.00	16.00
Topdressing of fertilizer	50.00	32.00	9.00	4.00	1.00	52.00	31.00	4.00	3.00	10.00	41.00	29.00	10.00	9.00	9.00
Sowing	-	-	28.00	53.00	19.00	-	-	21.00	46.00	33.00	-	-	25.00	49.00	26.00
Weeding	100.00	-	-	-	-	100.00	-	-	-	-	100.00	-	-	-	-
Gathering & heaping	-	-	88.00	12.00	-	-	-	73.00	21.00	6.00	-	-	69.00	26.00	5.00

WE: Women Exclusive, **WD:** Women Dominating, **ME:** Men Exclusive, **MD:** Men Dominating, **EP:** Equal participation

Conclusion

The study on the participation level of male and female labors in agricultural activities in Mandihal, Mangalagatti, and Timmapur villages of Dharwad district, Karnataka, provides valuable insights into the existing gender disparities in agricultural labor participation. The findings reveal that women play a crucial role in agricultural

activities, but their contributions are often undervalued and unrecognized.

The study highlights the need to promote gender equality in agriculture by addressing the existing social, economic, and cultural barriers that prevent women from participating equally in agricultural decision-making and labor participation. The findings also emphasize the importance of

providing women with access to land, credit, technology, and extension services to enhance their productivity and income.

To bridge the existing gender gap in agriculture, policymakers and development practitioners must prioritize the needs of women farmers and laborers. This can be achieved by implementing targeted interventions, such as training programs, credit facilities, and technology transfer, specifically designed to benefit women in agriculture. By promoting gender equality in agriculture, we can enhance agricultural productivity, improve rural livelihoods, and contribute to the overall development of rural communities.

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