



## EXPLORING THE ROLE OF WOMEN IN AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT

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### Abstract

The twin objectives of Agricultural Extension (disseminating knowledge and best practices) and Rural Development (improving livelihoods and social infrastructure) cannot be achieved without the full participation and targeted support of women. Far from being passive recipients, women in the developing world are central to agricultural production, processing, and household food security. Recognizing and amplifying their roles in extension and development is not merely an issue of equity, but a strategic necessity for enhancing global food security, improving nutritional outcomes, and fostering sustainable community growth. Globally, women comprise, on average, 43% of the agricultural labor force, a share that often exceeds 50% in certain regions of Africa and Asia. Women are heavily involved in labor-intensive tasks such as weeding, transplanting, harvesting, and seed selection. They often specialize in subsistence and high-value horticulture (fruits and vegetables), directly impacting family nutrition. They dominate post-harvest activities, including processing, storage, and marketing of food, which directly influences market access and income generation. Women are the primary managers of household budgets and nutritional choices, making them crucial drivers of demand for sustainable and nutritious farming practices. Despite this immense contribution, women face systemic barriers, often referred to as the “gender gap.” They typically have limited access to land ownership, credit, modern inputs, and, critically, agricultural information and training provided by traditional extension services. This gap severely limits their productivity and their ability to drive innovation.

### Keywords:

Women, Agricultural, Extension, Rural, Development

### Introduction

Historically, agricultural extension was male-centric, focusing primarily on cash crops and male farmers. Modern gender-sensitive extension models acknowledge that women are vital clients, effective



communicators, and necessary agents of change. Information delivered only to men often fails to reach women effectively due to cultural norms that limit their public interaction or control over inputs. (KAVYASHREE, 2001)

Women's information needs are often different, focusing on food crops, small livestock, post-harvest handling, and nutrition. Specific, tailored training on these topics directly improves household outcomes. The most effective way to reach female farmers is through female extension agents.

Women can more easily overcome cultural and social barriers to interact with female farmers in rural households. They serve as powerful role models, encouraging other women to take on leadership roles and adopt new technologies. They are often better equipped to understand the practical challenges and daily constraints faced by female farmers.

The successful integration of women into agricultural extension directly fuels holistic rural development across multiple dimensions. When women gain knowledge and control over resources, they are more likely to invest in crops that enhance dietary diversity. Studies consistently show a strong link between women's empowerment in agriculture and better child nutrition and lower rates of food insecurity. Access to technology and markets allows women to commercialize their small-scale enterprises, increasing household income and leading to greater investments in children's education and health. (KALYAN, 2011)

Women often form strong social networks. Extension programs that leverage women's groups (e.g., self-help groups) enhance collective action, leading to better resource management and greater community resilience to climate and economic shocks. By providing women with specialized knowledge and income-generating skills, extension challenges traditional gender norms, fostering greater recognition of women's economic contributions and encouraging more equitable intra-household decision-making.

Women play a pivotal role in agriculture and rural development worldwide, yet their contributions are often underrecognized. In many developing countries, women are actively involved in crop cultivation, livestock management, post-harvest processing, and household food security. Agricultural extension services, which aim to educate and support farmers with knowledge, technology, and resources, are crucial for improving productivity and livelihoods. When women are actively included in extension programs, the benefits extend not only to their households but also to entire communities, promoting sustainable rural development.



Globally, women constitute a significant portion of the agricultural workforce, particularly in smallholder farming. Women are involved in planting, weeding, harvesting, and processing crops, often managing kitchen gardens and small-scale farms that contribute to household nutrition and income. (KALRA, 2010)

Women care for poultry, goats, and dairy animals, contributing to protein intake and household income. Women handle food processing, storage, and marketing, adding value to agricultural produce.

Women often manage water, fuel, and soil fertility at the household level, making critical decisions that influence farm productivity. Despite their substantial contributions, women face challenges such as limited access to land, credit, technology, and extension services.

Agricultural extension involves the dissemination of knowledge, training, and innovations to farmers to improve productivity, sustainability, and livelihoods. Women farmers are more likely to adopt practices related to nutrition, food security, and small-scale enterprises when trained through extension programs. Participation in extension programs enhances women's confidence, leadership skills, and influence in household and community decision-making. Women are often more receptive to sustainable farming techniques such as organic farming, integrated pest management, and water conservation. (WANKHADE, 2010)

## Literature Review

HUSSAIN et al. (2009): When women are educated in agricultural practices, they share knowledge within their communities, creating a multiplier effect that benefits rural development. Gender norms may restrict women's mobility or participation in training programs.

USMAN et al. (2001): Women often lack access to land, credit, inputs, and modern technologies, limiting the effectiveness of extension programs. In many regions, extension staff are predominantly male, which can make women farmers less comfortable participating in training sessions.

JAYASHREE et al. (2001): Balancing farm work, household responsibilities, and childcare limits women's availability to attend extension programs. Developing training programs tailored to women's needs, schedules, and learning styles can increase participation.

JAYAWARDANA et al. (2007): Female officers can better communicate with women farmers, overcoming cultural barriers and encouraging engagement. Providing women with credit, inputs, and low-cost technologies empowers them to apply extension knowledge effectively.

JENNIFER et al. (2006): Organizing women's farmer groups, cooperatives, and peer learning networks facilitates knowledge sharing and collective action. Governments and NGOs can create policies that prioritize women's inclusion in agricultural training, land rights, and rural development initiatives.

## RESEARCH METHODOLOGY:

### Sample Size

A total of 200 respondents were chosen from jaipur district of Rajasthan .

### Data Analysis

### Regional Distribution of Respondents

Table No.- 1 Regional Distribution of Respondents

S. No.	Area Name	No. of Respondents
1.	jaipur district of Rajasthan	200
	<b>Total</b>	<b>200</b>

### Analysis -

The above table shows the regional details of the respondents. For the study, a total of 200 respondents of jaipur district of Rajasthan were selected.

### Age

Table no. 2

Age-wise Classification of Selected respondents

S.No.	Age-Group	respondents	
		No.	Percentage
1.	20-30	54	27
2.	31-40	116	58
3.	above 40	30	15
	<b>Total</b>	<b>200</b>	<b>100</b>

### Analysis:

It is clear from above Table no. 2 that out of total 200 respondents, the age group between 20-30 years were 54 (27 percent) and No. of respondents with age group 31-40 years were 116 (58 percent). On the other hand, there were 30 respondents with age higher than 40.

#### Interpretation-

The above chart shows the age percentage of respondents in jaipur district of Rajasthan . According to which, the percentage of respondents in the age group of 20-30 years is 54 and the percentage of age group 31-40 years is 116 While there were 15% respondents in the age-group of above 40.

**Table no. 3**

#### Gender Classification of Selected respondents

S.No.	Gender	respondents	
		No.	Percentage
1.	Male	134	67
2.	Female	66	33
	<b>Total</b>	<b>200</b>	<b>100</b>

#### Analysis:

It is clear from above Table no. 3 that out of total 200 respondents from jaipur district of Rajasthan , 134 were male and 66 were females.

#### Interpretation-

The above chart shows the gender percentage of selected respondents in jaipur district of Rajasthan . According to which, the percentage of male respondents is 67 and the female ones is 33.

**Table 4**

#### Analysis of respondents on the basis of working in their respective organization

S. No.	Since how many years have you been working with this organization?	No.	Percentage
1.	0-5 Yrs.	32	16
2.	5-10 Yrs.	94	47

3.	10-15 Yrs.	46	23
5.	More than 15 Yrs.	28	14
	<b>Total</b>	<b>200</b>	<b>100</b>

**Analysis:**

From above table no. 4, it is clear that out of total 200 selected respondents from jaipur district of Rajasthan , 32 were working in their current organizations from last 0-5 years. There were 94 and 46 respondents respectively who were working in their respective firms from last 5-10 and 10-15 years. On the other hand, there were only 28 respondents who were working in their respective forms from more than 15 years.

**Interpretation-**

The above chart shows the analysis of respondents on the basis of working in their respective organization. According to which, majority of the respondents i.e. 47% were working in their corresponding organizations from last 5-10 years. On the other hand, minority of the respondents i.e. 14% were working in their corresponding firms from last more than 15 years.

**Table 5****Analysis of respondents on the basis of impact of Women in Agricultural Extension and Rural Development**

S. No.	Do you think that there is a positive impact of Women in Agricultural Extension and Rural Development?	No.	Percentage
1.	Agree	48	24
2.	Strongly Agree	66	33
3.	Disagree	46	23
5.	Strongly Disagree	34	17
5.	Neutral	6	3
	<b>Total</b>	<b>100</b>	<b>100</b>

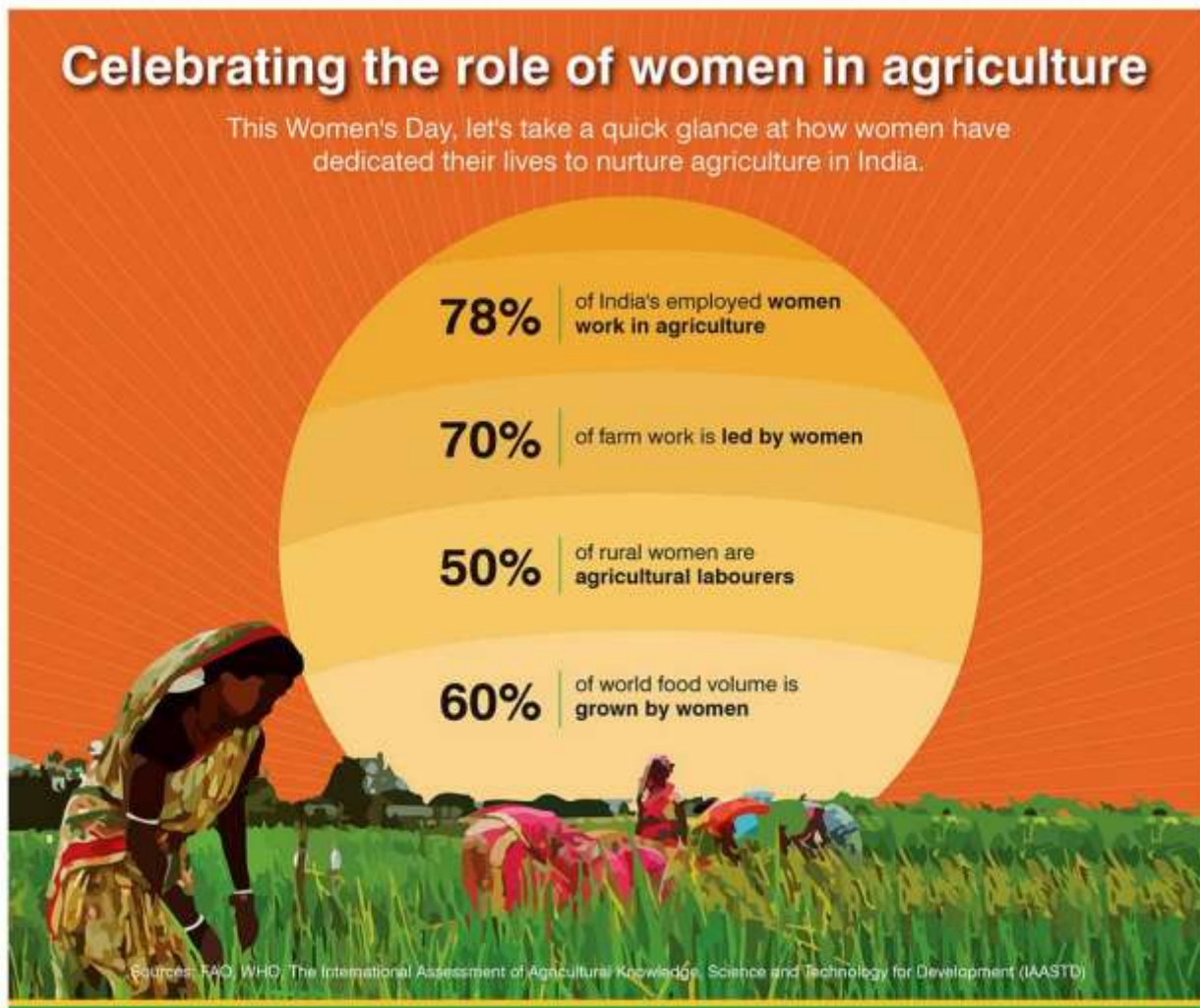
**Analysis:**



From above table no. 5, it is clear that out of total 200 respondents from jaipur district of Rajasthan , 48 respondents agreed that there is a positive impact of Women in Agricultural Extension and Rural Development while 66 respondents were strongly agreed with this statement. On the other hand, 46 and 34 respondents were 'Disagree' and 'Strongly Disagree' respectively about the there is a positive impact of Women in Agricultural Extension and Rural Development. While 6 respondents were neutral about this feedback.

### **Role of Women in Agricultural Extension and Rural Development**

Women are central to agricultural productivity and rural development, yet their potential is often underutilized due to social, economic, and cultural barriers. Inclusive agricultural extension programs that recognize and address women's unique challenges can enhance their skills, productivity, and decision-making power. By empowering women, extension services contribute not only to individual livelihoods but also to broader rural development, sustainable agriculture, and food security. Ensuring women's full participation is essential for building resilient, equitable, and thriving rural communities.



Women's role in agriculture is fundamental, multifaceted, and globally indispensable, yet it remains persistently undervalued and under-resourced. They are not merely supplemental laborers but are primary producers, food processors, and crucial drivers of household food security and nutrition. Acknowledging and empowering women in this sector is not just a matter of social equity; it is a strategic necessity for addressing global challenges related to hunger, poverty, and climate change.

Women perform the majority of labor-intensive tasks for subsistence and food crops, including planting, weeding, transplanting, and harvesting. While men often focus on cash crops and land preparation (ploughing), women manage the crops that directly feed the family. They are typically responsible for tending small livestock (poultry, goats), as well as milking, feeding, and cleaning larger animals, making them essential to the production of dairy and animal protein.



Women dominate the crucial post-harvest stages, including processing, storage, and marketing of farm produce. Their knowledge of traditional preservation and processing techniques is vital for reducing food loss and adding value to products. Women often act as the custodians of traditional knowledge, selecting, saving, and managing seeds for heirloom and local varieties. This role is crucial for maintaining agrobiodiversity and building resilience against changing environmental conditions.

When women earn income or gain control over resources, they are significantly more likely to invest in food and children's health and education. Female-managed farms often prioritize the cultivation of diverse, nutrient-rich crops (vegetables, legumes) over single cash crops, directly improving dietary diversity and reducing child malnutrition.

Women's dedication to subsistence farming ensures a consistent food supply throughout the year, acting as a critical buffer against famine and seasonal food shortages. Despite their pivotal role, women face persistent structural and cultural barriers that limit their productivity—a situation often termed the “gender gap” in agriculture.

Women often have limited or no formal land ownership rights, leading to insecurity and an inability to use land as collateral for loans. They also face restricted access to credit, fertilizer, quality seeds, and modern machinery. Agricultural extension services have historically been male-centric, focusing on men and cash crops. This results in women having less access to vital information regarding climate-resilient farming techniques, market prices, and new technologies.

The burden of agricultural labor is compounded by extensive unpaid care work (fetching water, collecting firewood, childcare), leading to severe time poverty and limiting their ability to attend training or participate in community decision-making. Closing the gender gap in agriculture could dramatically increase global productivity. The Food and Agriculture Organization (FAO) estimates that if women farmers had the same access to resources as men, they could increase yields on their farms by 20–30%, potentially lifting 100 to 150 million people out of hunger. Deploying more female extension agents and developing training programs specifically focused on women's crops and post-harvest needs. Providing women with access to appropriate, time-saving technologies (e.g., small-scale irrigation pumps, mechanized processors) that reduce the intensity of manual labor.

Women are the silent engine of global agriculture. Their intrinsic knowledge, labor, and dedication are the bedrock of household and regional food security. Sustainable development and the pursuit of a world free from hunger demand a comprehensive and deliberate effort to dismantle the barriers women



face, recognizing their immense potential as not just farmers, but as agri-entrepreneurs and ecological leaders.

Women are deeply involved in all stages of crop production, from sowing and planting to weeding and harvesting. They often manage small-scale and subsistence farming operations, which are critical for household nutrition and local markets.

Women are responsible for caring for livestock such as poultry, goats, and dairy animals. This contributes to household protein intake, income generation, and food security. Women play a key role in processing, storage, and marketing of agricultural produce. They add value through activities such as milling, drying, and packaging, often ensuring that food products reach local markets efficiently.

Women manage resources such as water, fuel, and soil fertility at the household and community level. Their knowledge of sustainable farming practices helps conserve biodiversity and maintain ecosystem balance.

Women's involvement in agriculture directly impacts household food security. They prioritize nutritious crops, kitchen gardens, and food preparation, improving family health and well-being.

Many women do not own land, which restricts their ability to make decisions about cultivation, invest in improvements, or access credit. Without financial resources, women struggle to purchase quality seeds, fertilizers, and equipment. Women often lack exposure to modern farming techniques, machinery, and extension services due to social and cultural barriers.

Women often juggle farm work with household chores, child care, and community responsibilities, limiting their capacity to engage in labor-intensive or commercial agriculture. In some regions, societal norms restrict women's mobility, decision-making power, and participation in markets or training programs.

Ensuring women have legal rights to own, inherit, or lease land empowers them to make decisions and invest in agriculture. Providing women with access to credit, loans, and microfinance enables them to purchase inputs, invest in technologies, and expand farm operations. Agricultural extension services tailored to women, along with training in modern techniques and sustainable practices, improve productivity and knowledge. Providing women with low-cost machinery, irrigation systems, and mobile-based advisory services reduces labor burdens and enhances efficiency. Governments and NGOs can



develop policies and programs that promote women's participation in agriculture, decision-making, and rural development initiatives.

Women are indispensable to agriculture, contributing significantly to crop production, livestock management, post-harvest activities, and household nutrition. However, their potential is often constrained by socio-economic, cultural, and institutional barriers. Addressing these challenges through access to land, credit, technology, training, and supportive policies can empower women, enhance agricultural productivity, and promote sustainable rural development. Recognizing and investing in women's role in agriculture is not only a matter of gender equity but also a crucial step toward achieving food security and economic resilience globally.

### Conclusion

The role of women in agricultural extension and rural development is indisputable and pivotal. Ignoring their needs cripples productivity; empowering them transforms communities. A progressive development agenda must, therefore, mandate a comprehensive shift toward gender-responsive extension systems. This includes hiring and supporting female extension agents, developing locally relevant training modules, and utilizing participatory methods that build on women's existing knowledge and social capital. By strategically investing in women, societies do not just uplift half the population; they unlock the full potential of the agricultural sector to feed the world sustainably and achieve genuine, inclusive rural prosperity.

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