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## WOMEN IN INDIAN AGRICULTURE: PARTICIPATION, CONTRIBUTION AND CHALLENGES

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**W**omen in India play a crucial role in the country's predominant economic sector, agriculture (Thakur, 2023). With 70% of the population residing in rural areas and 60% relying on agriculture as their primary income source, women's contributions to this domain are substantial. Historically, women have been the bedrock of household farming enterprises, with a deep-rooted connection to agriculture that dates to the domestication of crops, as highlighted by Bharat Ratna Dr. M S Swaminathan, renowned scientist and 'Father of Green revolution' in India. Globally, more than a quarter of farmers are women who actively engage in farming activities, process agricultural products, and manage domestic and reproductive duties. In India, women significantly contribute to food production, both in terms of value and volume, dedicating more hours to farming than men. According to the Census of India (2011), 65% of all women workers are engaged in agriculture, compared to 49% of male workers. Moreover, women make up ~30% of cultivators and ~47% of agricultural labourers. Women form the backbone of the rural economy, representing approximately 50% of agricultural and livestock workers, with a substantial 84% of rural women engaged in these roles (Patra *et al.*, 2018).

Globally, women constitute about 43% of the agricultural labor force (Patil and Babus, 2018), with the majority located in developing nations like India. Beyond farming, women lead efforts to conserve essential resources such as land, water, flora, and fauna. They enhance soil health through organic recycling, promote crop resilience via genetic diversity, and maintain varietal diversity for better agricultural security. Approximately four-fifths of economically active Indian women work in agriculture, playing a pivotal role in sustaining the agricultural and rural economies, ensuring food security, and conserving vital natural resources for future generations (Swamikannan and Jeyalakshmi, 2015). Women are integral

to various agricultural sectors, comprising nearly 50% of the world's adult population and a third of the labour force. Despite their significant contributions, women in agriculture often receive lower wages than men and face barriers in accessing agricultural assets and services. The farming image often leans towards males, overshadowing women's substantial contributions. Engaged in arduous field and domestic tasks, women in agriculture are frequently undervalued and earn lower wages than men. They also face barriers in accessing agricultural assets and services compared to men. To enhance productivity, profitability, and sustainability in farming, it's imperative to integrate technology and resources effectively with gender perspectives. This inclusive approach allows both men and women to actively contribute towards achieving agricultural goals (Brahmanand *et al.*, 2000).

### **The Significance of Women in Agriculture and Allied Sectors**

In India, 74% of the female workforce is dedicated to agriculture related chores. Rural women are integral to every stage of crop production, right from soil preparation, sowing, irrigation, weeding, nutrient application, harvesting to post-harvest activities. They engage in labour-intensive tasks such as sowing, transplanting, irrigation, fertilizing, plant protection, weeding, harvesting, threshing, picking, winnowing, collecting cotton sticks, seed separation, storage, and more (Lal and Khurana, 2011). The National Commission for Women (NCW) notes that women perform 60-80% of the work in agriculture, including food production, planting, weeding, harvesting, and post-harvest processing. While they contribute to staple crop production like rice, wheat, and maize, their primary contributions are seen in the production of legumes and vegetables. Additionally, rural women in India are deeply involved in livestock activities, including cleaning animal sheds, collecting farmyard manure, gathering fodder, watering livestock, making dung cakes, milking, processing milk, and preparing ghee. Women are responsible for an estimated 70% of the farm work in livestock, a key subsistence activity that meets household food needs and supplements farm income (Patra *et al.*, 2018). They earn supplementary income through the sale of milk and other livestock products. Women predominantly manage all aspects of livestock, excluding grazing. Poultry farming is another significant aspect of the rural economy where women play vital roles at the household level (Lal and Khurana, 2011). Income from poultry farming has been steadily increasing, with women earning additional income from the sale of eggs and poultry meat. Additionally, rural women engage in activities such as mushroom cultivation, sheep/goat rearing, and vegetable gardening, enriching the agricultural landscape (Patra *et al.*, 2018).

## Women Leaders in Indian Agriculture

The contributions of women agriculturists and activists have been pivotal in advancing Indian agriculture. Several women leaders have been vocal and addressed the critical issues such as land rights, livestock management, seed technology, organic farming, and entrepreneurship and they have paved the way for a more inclusive and prosperous agricultural sector in India. The contribution of renowned women leaders honoured by Government of India (GOI) is discussed below.

- 1. Rajkumari Devi:** She is an agri-entrepreneur, also called as ‘Potato Queen’ of Bihar. She was awarded by Padma Shri in 2019 for her contribution in potato cultivation and campaign through SHG (Mahila Sabla Sangh) which inspired thousands of farmers, particularly women. She was pioneer in Bihar to adopt advanced agricultural practices, such as using high-quality fertilizers and seeds, and selling her produce directly to consumers. Additionally, she initiated a women's cooperative to support and encourage rural women who aspire to start their own businesses.
- 2. Kamala Pujari:** She is a social activist who hails from Odisha. She learnt the fundamentals of traditional farming and sustainability from ‘MS Swaminathan Research Foundation’ in Jetport and got inspired. She organised farmers in communities and cooperatives and empowered women farmers in sustainable methods of cultivation and marketing their goods and thereby, helped them to increase their incomes. She has been awarded by National Prize for Innovation in Agriculture and Padma Shri in 2019.
- 3. Madurai Chinna Pillai:** She is a distinguished social worker and a trailblazer in the field of microfinance from Tamil Nadu state. Ms. Pillai, who had suffered the brunt of rural poverty in her childhood, founded ‘Kalanjiam Community Banking Program’ in the early 1990s with goal of economic empowerment of rural women through creation of self-help groups (SHGs). The Pillai's model promotes financial inclusion by enabling women to pool their savings and access credit without the need for traditional collateral which facilitated numerous women to start and expand small businesses, and reduced dependency on exploitative moneylenders, thereby improved their economic status. The success of the Kalanjiam model has led to its replication in various parts of India, benefiting over half a million women across different states. She has been also actively involved in promoting education, healthcare, and social justice among rural communities.

In recognition of her transformative impact on rural society and upliftment of marginalized communities in India, Chinna Pillai was awarded the Padma Shri in 2019.

- 4. Saalumarada Thimmakka:** She was an Indian environmentalist and social activist from Karnataka state. She was dedicated to tree planting and environmental conservation. Starting in the 1960s as a quarry labourer, she and her husband planted thousands of trees along the roads near their village to provide shade for travellers. Ms. Thimmakka was popular as ‘Tree Mother’ of India and received numerous accolades, including the Padma Shri in 2019, for her contributions to the environment. Beyond tree planting, she promoted organic farming and rainwater harvesting. She founded the ‘Saalumarada Thimmakka International Foundation’ to continue her environmental conservation work and support education and health initiatives in rural communities.
- 5. Jamuna Tudu:** Ms. Jamuna Tudu is known as the ‘Lady Tarzan of Jharkhand’. She is an Indian environmentalist and social activist who has devoted her life to protecting forests and wildlife. She founded the ‘Van Suraksha Samiti’ (Forest Protection Committee) to combat illegal logging and poaching in her village. Her efforts have garnered numerous accolades, including the ‘Indira Gandhi Paryavaran Puraskar’ in 2019, Padma Shri in 2020, and she has been placed in the list of ‘Top 100 Influential Women in the World – 2020’ by the BBC. Beyond environmental conservation, she is a strong advocate for women's rights and gender equality. She empowers women through education and training, and campaigns against child marriage and gender-based violence. Her unwavering commitment to conservation and social justice serves as an inspiration to many.
- 6. Rahibai Soma Popere:** She is a tribal farmer from the Mahadeo Koli community in Ahmednagar district, renowned for her contributions in agro-biodiversity, landrace conservation, and innovative paddy cultivation techniques. Known as the ‘Seed Mother,’ she has helped farmers revert to native crop varieties and established the ‘Kalsubai Parisar Biyanee Savardhan Samiti’ in Ahmednagar district. Rahibai has also formed farmer groups and cooperatives to assist in marketing their products and increasing their incomes. She received the Nari Shakti Puraskar in 2019, and the Padma Shri in 2020 for her contributions to agriculture and to inspire and support farmers, especially women, through her advocacy and initiatives.

- 7. Ms. Trinity Saioo:** She is a Meghalayan farmer and social activist dedicated to empowering women farmers and promoting sustainable agriculture by conservation of traditional varieties/seeds. She has organized training sessions and workshops to help women develop their skills and confidence, and founded the ‘Sawmlyngdoh Women Farmers’ Cooperative’ to aid in marketing their products and increasing their earnings. For her contributions she has been recognised by the ‘National Youth Award’ in 2018 and the ‘Nari Shakti Puraskar’ in 2020, and Padma Shri in 2020.
- 8. Tulsi Gowda:** She is a conservationist and environmental activist from Karnataka state and dedicated her life to preserving the Western Ghats biodiversity in South India. For her extensive knowledge of plant and herb species she is called as ‘Encyclopedia of Forests’. She has been instrumental in organizing and leading protests against infrastructure projects that threaten the ecosystem and the livelihoods of indigenous communities. Over the past six decades, she has planted over 30,000 saplings, significantly contributing to environmental conservation. For her remarkable contributions to social work she was awarded by Indira Priyadarshini Vrikshamitra Awards in 1986, Rajyotsava Award in 1999 and Padma Shri in 2020. Her legacy is a testament to the impact of grassroots environmentalism.
- 9. Pappammal:** She is an organic farmer from Tamil Nadu and worked in association with Tamil Nadu Agricultural University (TNAU). Her straightforward approach has led to significant success, and at over 100 years old, she remains active in agricultural events. For her contributions in organic farming, she received the Padma Shri in 2021. Pappammal continues to inspire with her dedication and resilience.
- 10. Basanti Devi:** She belongs to Pithoragarh, surrounded by nature, she became alarmed by the threat to the Kosi River due to deforestation in 2003. Motivated to act, Basanti rallied women from nearby villages over 20 years to protect and replant trees, ultimately saving the river and its surrounding forests. Today, the ‘Save Kosi Movement’ continues as a testament to community-driven conservation efforts. Basanti Devi, aged 64, received the Nari Shakti Puraskaar in 2016 and the Padma Shri in 2022 for her environmental advocacy.
- 11. Sosamma Iype:** She is an animal conservationist from Niranam, Kerala, was honoured with the Padma Shri in 2022 for her efforts in preserving the native cow breed ‘Vechur’. Leading the conservation since 1988, she co-founded the ‘Vechur Conservation Trust’ in

1989 with just eight cows. Under her leadership, the movement expanded as numerous organizations joined in to save the breed. Affectionately known as 'Vechur Amma', she is revered for her lifelong dedication to the preservation of Vechur cows.

**12. Kamachi Chellammal:** She hails from South Andaman and popularly known as 'Nariyal Amma' honoured by Padma Shri award in 2024 for her outstanding contribution to organic coconut plantation. She adopted to retain soil health. Chellammal's method of soil mulching with organic materials like bark and leaves, conserve soil moisture and reduces weeds, crucial for healthy coconut plantations. She uses Integrated Pest Management (IPM) with 'trap plants' to disrupt pest mating cycles naturally. Additionally, she practices multi-species cropping on her 10-acre farm, planting diverse crops to enhance revenue and offset low coconut prices. Chellammal's approach encourages organic farming among other farmers.

**13. Yanung Jamoh Lego:** She hails from Arunachal Pradesh, known for reviving the Adi community's traditional healing practices. She is a former deputy director of the state agriculture department and renowned herbalist is celebrated for her lifesaving treatments and advocacy for traditional healing. She founded the 'Indigenous Herbal Heritage' in 2009 to promote medicinal plant cultivation and knowledge, educating over 100,000 people and planting about 5,000 medicinal plants annually. Lego's contributions have earned her multiple accolades, including the SRISTI Samman Award in 2007, Arunachal Pradesh State Award in 2019, and Padma Shri in 2024.

### Challenges Encountered by Indian Women in Agriculture

- 1. Access to Land:** Women in agriculture face limited land ownership, with only about 11% holding land titles, often as small or marginal farmers. This restricts their ability to utilize livelihood assets and obtain credit. Despite recent legislation to enhance women's inheritance rights, the impact remains minimal (Patra *et al.*, 2018).
- 2. Access to Water:** Although women are recognized as crucial water managers, their roles are often limited to domestic use. Gender disparities in water access hinder agricultural productivity and economic growth. Reliable water sources improve production, employment, and income, making it essential to address these constraints (Van Koppen, 1998; Namara *et al.*, 2010).

- 3. Decision-Making:** Women's involvement in agricultural decision-making is minimal, with men predominantly making crucial decisions. Obstacles such as low self-confidence, limited knowledge, perceived subordination, inadequate access to technology, illiteracy, and lack of farm-related information hinder their participation. Enhancing women's decision-making roles is vital for sustainable agricultural development (Chayal *et al.*, 2013).
- 4. Access to Credit and Agricultural Inputs:** Women farmers face financial challenges and limited access to credit, capital, and agricultural inputs. This restricts their ability to improve productivity and quality of life. Access to credit is crucial for investments in equipment, working capital, and improved seeds (Owolabi *et al.*, 2011).
- 5. Access to Technology and Extension Services:** Women in agriculture lack information about modern technologies, with only 5% benefiting from extension services. Excluded from knowledge dissemination, they are often considered secondary workers. This gender gap in extension services hinders their potential in agriculture (Patra *et al.*, 2018; NRCWA).
- 6. Access to Education:** High illiteracy rates and school dropouts among women in agriculture pose challenges in accessing loans and micro-credit schemes. Education is crucial for understanding and adopting improved agricultural technologies. Educated women farmers can make critical decisions, enhancing productivity and income (Das, 2012).

## Conclusion

Women have long played a crucial role in agriculture, yet their contributions often go unrecognized. Despite their significant input, they face numerous challenges and remain underappreciated as farmers. Addressing gender inequality is vital for national development. Recognizing women's efforts and providing access to education, land, credit, modern technologies, and agricultural innovations can attract more women to agriculture, thereby reducing poverty. Expanding access to financial services and government schemes can boost productivity, ensure food security, and enhance economic prosperity which is essential for achieving sustainable and economically viable agriculture.

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