



Sowing Equality: Gender Inclusiveness in Sustainable Agriculture

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INTRODUCTION

Agriculture continues to be the main source of income for millions of individuals worldwide, especially in developing nations. In this industry, women have a vital yet often underappreciated function along the entire value chain of agriculture. From planting seeds to reaping harvests, and from processing fruits to selling them, women make important contributions to food and nutritional security. Nevertheless, in spite of their important contributions, agricultural women frequently confront entrenched systemic obstacles. These encompass restricted access to land ownership, farming inputs, financial credit, technology, extension services, education, and involvement in decision-making at household and institutional levels.

Under the umbrella of sustainable development, it is increasingly recognized that sustainably attaining agriculture is impossible without the mitigation of gender inequality. Empowering women in agriculture results in greater agricultural productivity, improved household food security, better nutrition, and more resilient and equitable farming systems.



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The Contribution of Women to Agriculture

Women are an integral component of the agricultural labor force globally, accounting for about 43% of the overall agricultural labor force. In many developing countries, including India, this proportion is even higher in rural areas. States like Jharkhand, Odisha, Bihar, Chhattisgarh, and West Bengal have a very heavy participation of women in regular farming activities.

Women's efforts in farming cover a broad spectrum of essential activities:

Seed Selection and Planting: Women are mostly involved in selecting high-quality seeds according to traditional practices and planting them carefully for maximal crop yield. **Weeding, Irrigation, and Transplanting:** These time-consuming activities are mostly performed by women, manually most of the times, requiring heavy time and physical labor. **Harvesting and Threshing:** Women participate directly in harvesting crops at the appropriate maturity stage and then threshing them with traditional or innovative implements.

Livestock Management: Women are responsible for managing livestock such as feeding, milking, cleaning the shed, and attending to animal health activities vital for integrated farming systems.

Post-Harvest Processing and Storage: Women are involved in activities such as drying, cleaning, grading, and storing food grains and other fruits, keeping food quality as well as household food availability assured throughout the year.

Even as they have their many roles, women are sometimes seen as "helpers" or "assistants" and not as official "farmers." This lack of recognition not only devalues their efforts but also bars them from a number of benefits and schemes geared towards agricultural progress.

Gender Gaps in Agriculture

In spite of their central function in farming, agricultural women still experience a myriad of gender-based gaps that limit their complete involvement and potential in the industry. The following are the major gaps:

1. Limited Access to Land

Fewer than 13% of women in India hold legally registered ownership of agricultural land, although a vast majority work on family farms. Without official land ownership or joint titles, women cannot use land as collateral for loans or become eligible for government welfare and agricultural subsidy schemes. This considerably handicaps their financial autonomy and decision-making ability.

2. Limited Access to Credit

Women farmers also experience problems accessing institutional credit because of a compounded set of factors, such as lack of property ownership, limited financial capability, and discriminatory lending. Exclusion from formal finance causes them to draw on informal credit sources, which tend to be exploitative.

3. Exclusion from Extension and Training Services

Extension programs in agriculture are male-dominated and traditionally oriented, and women are often excluded from training events and field demonstrations. This causes an enormous knowledge gap, particularly in new technology adoption, enhanced crop management practices, climate-smart agriculture, and mechanization.

4. Technological Exclusion

Agricultural equipment and machinery are usually made with reference to male body ergonomics and so are hard, unsafe, or uncomfortable for women to use. Such gender-insensitive design enhances women's physical burden and inhibits mechanization.

5. Restricted Access to Markets

Cultural norms, security issues, and mobility limitations frequently restrict the ability of women to participate directly in markets. Consequently, they are restricted in selling crops, determining prices, or participating in marketing groups and decision forums.

Why Gender Inclusiveness Is Important for Sustainable Agriculture

Reaching sustainable agriculture is unattainable without actively involving women and overcoming gender gaps. Gender inclusiveness delivers quantifiable improvements in various aspects:

Increased Productivity

Evidence indicates that with equal access to land, inputs, and services, women's agricultural production could increase by 20–30% overall. This could decrease global hunger by as much as 17%.

Enhanced Climate Resilience

Women have traditional knowledge and tend to use sustainable methods like composting,

diversification of crops, and collection of rainwater. Their participation in climate-resilient planning adds to the adaptive capacity of a community for climate change.

Improved Nutrition and Food Security

Women are concerned with household nutrition, food preparation, and child well-being. When they are empowered in agricultural decision-making, they are able to deliver more varied diets and better health benefits for families.

Socially Inclusive Economic Growth

Gender-inclusive agricultural systems assist in poverty reduction in rural areas by making sure that women and men gain equally from economic opportunities, ensuring social equity and household welfare.

Pathways to Gender-Inclusive Sustainable Agriculture

Gender equality in farming can only be achieved through multi-level, systemic changes. The following strategies provide a blueprint to transform agriculture into an inclusive and sustainable sector:

1. Land Rights Legal Reforms

- Push for mutual land titles for couples to guarantee common ownership.
- Streamline legal processes and inform rural women about land rights and property registration.

2. Customized Agricultural Extension Services

- Hire and train additional women extension officers to reach more female farmers.
- Organize women-focused Farmer Field Schools (FFS) for experiential learning.
- Employ ICT tools and audio-visual materials in local languages to enhance accessibility.

3. Gender-Friendly Technologies

- Develop and market farm equipment that is ergonomically suited for women's use.
- Implement labor-saving devices for key operations such as weeding, transplanting, harvesting, and threshing.

4. Enhanced Access to Credit and Inputs

Empower Women Self-Help Groups (SHGs) and Farmer Producer Organizations (FPOs) to access microcredit, subsidies, and inputs. Provide seed

kit, compost unit, and livestock distribution via women's cooperatives.

5. Capacity Development and Education

Provide basic literacy and vocational education with emphasis on agriculture and agribusiness to rural women. Empower women with digital agriculture, such as mobile-based advisory services, weather, and e-marketing applications.

6. Market Linkages and Women Focused Cooperatives

Develop women-owned producer companies, processing units, and value chain collectives. Facilitate access to direct markets via rural haats, government procurement, and online platforms such as e-NAM and e-commerce websites.

Best Practices in the Field

Spotlighting excellent models and field-level innovations by women offers great lessons on how gender-sensitive agriculture can be applied and replicated. The following case studies reflect effective, grassroots-led strategies across India:

Mahila Kisan Sashaktikaran Pariyojana (MKSP) – India

Mahila Kisan Sashaktikaran Pariyojana (MKSP), which is a flagship program under the National Rural Livelihood Mission (NRLM), is designed to empower Indian women farmers. The program concentrates on encouraging agroecological interventions, diversification of livelihoods, and sustainable agricultural practices. Women are trained in organic farming, natural resource management, and climate-resilient agriculture through MKSP. The program also focuses on reinforcing the identity of women as 'farmers' and their access to entitlements, technology, and decision-making spaces.

Deccan Development Society (DDS), Telangana

Deccan Development Society, which is headquartered in Telangana, is a grassroots movement that works among marginalized Dalit women farmers. DDS has established all-women farming groups at the community level that are focused on food sovereignty, organic production, and nutrition security. The women have joint control of seed banks, operate biogas units, and promote millet-based sustainable agriculture. By

restoring degraded land and restoring traditional crops, DDS promotes ecological sustainability and strengthens women's agency within agricultural systems. The model has become the gold standard for community-driven, women-led development.

Women SHGs of Jharkhand in Vegetable Farming

In Jharkhand, tribal women Self-Help Groups (SHGs) promoted by the Jharkhand State Livelihood Promotion Society (JSLPS) are pathfinders of climate-smart horticulture. These SHGs have been able to successfully implement off-season vegetable production with high-tech approaches in the form of drip irrigation, low tunnels, and polyhouse. The intervention has resulted in notable increases in family income, nutrition, and women's involvement in agri-entrepreneurship. The success stories of these tribal communities showcase the transformative power of connecting women's groups with technology, training, and markets.

Challenges to Gender Inclusiveness in Agriculture

While some advances have been made, a number of structural and socio-cultural constraints still prevent full women's participation in agriculture. The major challenges are:

Patriarchal Norms: Traditional gender norms limit the mobility, decision-making space, and access to opportunities for women beyond the household.

Data and Policy Invisibility: Women are usually not included in government collection activities of official agricultural data, including censuses and surveys. Consequently, their work does not get counted and continues to be less acknowledged in policy processes.

Limited Representation in Institutions: Women are still grossly underrepresented in agricultural cooperatives, water user associations, and the boards of Farmer Producer Organizations (FPOs).

Digital Divide: Rural women have lower access to mobile phones, the internet, and digital literacy training, which restricts their capacity to

take advantage of digital agricultural services and information.

Policy Recommendations for Gender-Inclusive Agriculture

To build an enabling environment for women in agriculture, the following policy interventions should be implemented and mainstreamed:

Mainstream Gender Budgeting

Gender-sensitive planning and budgeting should be a part of all agricultural and rural development schemes. Specific funds should be provided for women's empowerment items.

Mandate Representation

At least 33% representation of women in FPOs, watershed committees, and the body of village-level agricultural planning should be ensured through policies. This will bring them more voice and influence into decision-making bodies.

Integrate Gender Targets into Flagship Programs

National programs like PM-KISAN, PM Fasal Bima Yojana (PMFBY), and Soil Health Mission need to include specific gender-based targets and disaggregated beneficiary data to achieve inclusiveness.

Strengthen Data Collection Systems

The government agencies need to enhance gender-disaggregated data collection and monitoring systems to inform evidence-based planning, monitor progress, and ensure accountability. Promote partnerships with corporate social responsibility (CSR) wings, agri-tech firms, and NGOs to enhance women-led agribusiness incubation, capacity building, and online access.

CONCLUSION

Planting seeds of gender equality in farming is not just an issue of social justice—it is a strategic necessity for attaining sustainability, resilience, and food security. Women farmers are guardians of indigenous knowledge of farming, biodiversity, and community food systems. Women farmers are key drivers for conserving natural resources, taking up climate-resilient

agriculture practices, and enhancing household nutrition and income.

For agriculture to flourish in the 21st century, gender equality has to be put at the center of all policy, innovation, and investment. Empower women and farming systems become more productive, equitable, and sustainable. In short when women do well, agriculture prospers, and so does the planet.

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