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WOMEN AND AGRICULTURAL PARTICIPATION IN TAMIL NADU: A THEORETICAL AND EMPIRICAL ANALYSIS

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ABSTRACT----------
Women's participation in agriculture in Tamil Nadu represents both a vital contribution to rural livelihoods and a site of systemic marginalization. Despite accounting for nearly half of the agricultural workforce, women remain largely invisible in institutional frameworks that equate farming with land ownership – a domain dominated by men. This study employs a theoretical and analytical approach to examine women's roles in Tamil Nadu's agrarian economy, drawing on feminist political economy, empowerment theory, and intersectionality. Secondary data from the Census of India, National Sample Survey, and state agricultural policy reports are combined with case studies on self-help groups, millet revival movements, and Dalit women agricultural workers. Findings reveal key contradictions: women's labour is visible but unrecognized, participation is high yet empowerment remains limited, and technological modernization often exacerbates exclusion. While welfare schemes and collective action initiatives provide some opportunities for agency, structural barriers in land rights, wage equity, and access to technology persist. The paper argues for a gender-just agrarian framework that integrates land reforms, recognition of unpaid labour, gender-sensitive technology, intersectional policy interventions, and climate-resilient strategies. Such reforms are essential not only for women's empowerment but also for ensuring the sustainability of Tamil Nadu's agrarian transformation.

KEYWORDS: *Women farmers, Tamil Nadu, Agricultural participation, Feminist political economy, Gender justice.----------*

INTRODUCTION

Agriculture has historically been the backbone of the Indian economy, and Tamil Nadu, one of India's southern states, is no exception. The state's agricultural sector has long been a site of both economic sustenance and social transformation. Within this sphere, women play a crucial yet often underappreciated role. Women in Tamil Nadu participate extensively in agricultural operations—ranging from sowing, transplanting, and weeding to post-harvest processing and livestock management. Despite their pervasive involvement, their contributions remain structurally invisible, largely because agriculture is socially and institutionally perceived as "male-dominated" (Agarwal, 1994; Kelkar, 2009).

This article offers a theoretical analysis of women's agricultural participation in Tamil Nadu, situating their roles within broader debates on gender, development, and agrarian transformation. By employing frameworks such as feminist political economy, empowerment theory, and intersectionality, it highlights how women's contributions to agriculture are shaped by class, caste, patriarchy, and policy regimes. Furthermore, it examines how globalization, climate change, and technological innovations have altered women's participation and agency in Tamil Nadu's agrarian economy.

The feminist political economy approach critiques how women's labour is undervalued in agriculture due to male-centric ownership of land and resources (Boserup, 1970). In Tamil Nadu, women are predominantly employed in labour-intensive tasks such as transplanting and weeding, yet they are excluded from land ownership and agricultural decision-making.

The empowerment and capabilities framework (Sen, 1999; Kabeer, 1999) emphasizes access to resources, agency, and achievements. Women in Tamil Nadu lack land rights, institutional credit, and access to extension services, which limits their ability to act as autonomous farmers. Although Self Help Groups (SHGs) in Tamil Nadu have created spaces for financial independence and collective action (Swaminathan, 2010), structural barriers to empowerment remain.

Intersectionality (Crenshaw, 1989) further reveals that women's agricultural participation is not uniform. Dalit and landless women face caste-based discrimination in addition to gender bias, resulting in lower wages and

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precarious working conditions (Kapadia, 1993). Thus, class and caste divisions compound gender inequalities in rural Tamil Nadu.

The feminization of agriculture—a phenomenon linked to male out-migration—has increased women's visibility in agricultural work (Deere, 2005). However, this has not translated into empowerment, as women continue to face wage disparities, lack of recognition as "farmers," and exclusion from agricultural schemes (Ramesh Kumar et al. 2020). Technological changes, such as mechanization, have displaced women from tasks like transplanting and weeding, reflecting gendered technological exclusion (Kelkar, 2009).

Moreover, climate change poses serious challenges. Tamil Nadu is prone to droughts and water scarcity, intensifying women's workload in both agricultural production and household management (Chakraborty, 2014). Women's traditional knowledge of crop diversity and water management is valuable for climate adaptation, but policy frameworks rarely integrate these perspectives.

Women in Tamil Nadu are central to agricultural labour, yet their roles remain underrecognized and undervalued due to patriarchal norms, caste hierarchies, and gender-blind policies (Sivakumar & Usha, 2012). A gender-sensitive agrarian framework is necessary—one that secures women's land rights, ensures equitable access to technology and credit, and recognizes their unpaid and invisible contributions (Sivakumar & Manimekalai, 2021). Theoretical approaches such as feminist political economy, empowerment theory, and intersectionality reveal that addressing structural inequalities is crucial for achieving both gender justice and sustainable agricultural development in Tamil Nadu.

WOMEN'S PARTICIPATION IN TAMIL NADU AGRICULTURE: CONTEXTUAL OVERVIEW

Tamil Nadu has a diverse agro-climatic landscape, producing a wide variety of crops including paddy, millets, pulses, sugarcane, cotton, and groundnut (Government of Tamil Nadu, 2020). Within this agricultural framework, women contribute significantly to every stage of production. According to National Sample Survey (NSS) data and agricultural labour reports, women constitute nearly 40–50% of the agricultural labour force in Tamil Nadu, although their participation varies depending on crop patterns and regional dynamics (NSSO, 2014; Rajeswari, 2018).

Traditionally, women's involvement has been concentrated in labour-intensive operations such as sowing, transplanting, weeding, harvesting, and threshing. In addition, women play a major role in livestock rearing, dairy farming, sericulture, and horticulture, all of which contribute to household subsistence as well as the rural economy (Agarwal, 1994; Kelkar, 2009). Despite this extensive engagement, women's contributions remain structurally invisible, as official statistics often define "farmers" in terms of land ownership—a domain overwhelmingly dominated by men due to patriarchal inheritance practices (Agarwal, 1994).

The undervaluation of women's agricultural contributions stems from deep-rooted gender norms. Women's agricultural work is often categorized as "family labour" or "supplementary labour," despite the fact that rural households in Tamil Nadu rely heavily on women's earnings from agricultural wages (Kapadia, 1993). The absence of land rights further marginalizes women from agricultural decision-making, as land ownership confers legitimacy in accessing institutional credit, subsidies, and agricultural extension services (Swaminathan, 2010). Thus, while women sustain the agricultural economy, they remain socially and institutionally excluded from recognition as independent farmers.

A distinct phenomenon in Tamil Nadu is the feminization of agricultural labour. As men increasingly migrate to urban areas and industrial jobs, women have taken on greater responsibilities in rural agriculture (Deere, 2005). While this has increased their visibility in farm operations, it has not necessarily translated into empowerment. Instead, women's workloads have intensified, as they are expected to manage agricultural labour in addition to domestic responsibilities (Kelkar, 2009). This feminization is therefore less about empowerment and more about the feminization of agricultural distress (Chakraborty, 2014).

Further, gender disparities persist in terms of wages and working conditions. Studies indicate that women agricultural labourers in Tamil Nadu are often paid 20–30% less than their male counterparts for similar tasks (Rajeswari, 2018). Such wage discrimination, combined with seasonal unemployment, reinforces women's economic vulnerability. Caste dynamics compound these inequalities: Dalit women agricultural workers often face the harshest forms of wage exploitation, lack of job security, and caste-based exclusion from irrigation networks (Kapadia, 1993).

Moreover, technological shifts in Tamil Nadu agriculture—particularly the adoption of mechanized harvesters and transplanting machines—have disproportionately displaced women, as these technologies substitute for labour-intensive tasks traditionally performed by them (Kelkar, 2009). At the same time, women are rarely trained to operate machinery or access modern inputs, further marginalizing them within the evolving agrarian economy.

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Women's participation in Tamil Nadu agriculture is paradoxical: they are indispensable contributors yet remain institutionally invisible. While feminization has increased their labour participation, structural barriers such as lack of land ownership, wage inequality, and technological exclusion continue to deny them recognition as full-fledged farmers (Sivakumar & Usha, 2013). Addressing these challenges requires gender-sensitive policies that acknowledge and institutionalize women's roles, ensuring equity in access to resources, decision-making, and benefits of agricultural development.

THEORETICAL FRAMEWORKS

A theoretical analysis of women's agricultural participation in Tamil Nadu necessitates drawing upon multiple frameworks that illuminate the interplay of gender, economy, and social structure. While women are central to agricultural production in the state, their roles are often overlooked in dominant narratives of agrarian development. By engaging with feminist political economy, empowerment and capabilities approaches, intersectionality, and debates on the feminization of agriculture, one can gain a comprehensive understanding of how women's agricultural contributions are shaped and constrained by broader socio-economic processes.

1. Feminist Political Economy

The feminist political economy framework critiques the androcentric bias of mainstream economics, especially the persistent invisibilisation of women's labour. Conventional agrarian studies often privilege land ownership, market transactions, and capital investment, thereby sidelining women who primarily engage as wage labourers, subsistence producers, or unpaid family workers (Boserup, 1970; Agarwal, 1994). In Tamil Nadu, this lens underscores how women's contributions are undervalued because agricultural identity is tied to land titles, which are overwhelmingly concentrated in men's hands.

Women's work is often classified as "supplementary" or "family labour," even though their labour is indispensable to farm productivity (Kelkar, 2009). For example, transplanting, weeding, and harvesting—tasks heavily dependent on women's skills—are routinely dismissed as unskilled work, thereby justifying lower wages (Rajeswari, 2018). This reflects what feminist political economists identify as the "devaluation of reproductive and subsistence labour," wherein women's contributions are seen as natural extensions of their gender roles rather than productive economic activities (Mies, 1986).

The capitalist transformation of agriculture in Tamil Nadu has further marginalized women. Mechanization, expansion of cash crops, and agribusiness contracts have privileged male farmers while displacing women labourers. For instance, the introduction of mechanical paddy transplanters has reduced demand for female transplanting labour, once a major source of income for rural women (Chakraborty, 2014). Likewise, agribusiness contracts for sugarcane and cotton are negotiated primarily with male landholders, excluding women from access to credit, subsidies, and extension services (Agarwal, 2018). The feminist political economy approach thus helps to analyse the structural exploitation and invisibilisation of women farmers within Tamil Nadu's agrarian economy.

2. Empowerment and Capabilities Approach

The capability approach developed by Amartya Sen (1999), along with Naila Kabeer's (1999) conception of empowerment, offers another lens to understand women's agricultural participation. Empowerment entails expanding women's access to resources, enhancing their agency in decision-making, and achieving improvements in well-being. However, Tamil Nadu's women farmers often lack these enabling conditions.

First, access to land titles remains restricted, with only a small fraction of women holding agricultural land (Agarwal, 1994). Without ownership, women are denied institutional credit, crop insurance, and state subsidies, undermining their capacity to make autonomous farming decisions. Second, women are often excluded from agricultural extension services and training, which predominantly target male farmers. This exclusion perpetuates technological illiteracy and dependence on male family members (Swaminathan, 2010). Third, women's limited presence in local governance structures such as cooperative societies and farmer producer organizations curtails their bargaining power in markets.

Despite these structural barriers, Tamil Nadu has witnessed positive developments through self-help groups, microfinance networks, and livelihood schemes. Initiatives like the Mahalir Thittam and Pudhu Vaazhvu Project have facilitated collective leasing of land, group farming, and financial literacy (Deshmukh-Ranadive, 2005). These interventions enhance women's economic agency, albeit unevenly. Many SHGs remain confined to microcredit activities rather than transforming property rights or labour relations. In other words, empowerment in practice often operates within the bounds of financial inclusion rather than challenging patriarchal control over agricultural resources (Sivakumar & Usha, 2011).

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Thus, while the empowerment and capabilities framework reveals women's agency, it also highlights the limits of empowerment without structural reform. True empowerment requires not only collective action and microfinance but also secure land rights, wage equity, and institutional recognition of women as farmers.

3. Intersectionality

The concept of intersectionality, introduced by Kimberlé Crenshaw (1989), emphasizes how gender intersects with caste, class, and other social categories to produce layered forms of marginalization. In Tamil Nadu, intersectionality is crucial to analysing agricultural participation, as women's experiences vary dramatically across caste and class lines.

Dalit and landless women constitute a significant portion of Tamil Nadu's agricultural wage labour force (Kapadia, 1993). These women often face lower wages, bonded labour practices, and caste-based exclusion from irrigation networks and common lands. For instance, studies in Villupuram and Cuddalore districts show that Dalit women workers not only endure wage discrimination but also sexual harassment and social segregation in workplaces dominated by caste-Hindu landlords (Chakraborty, 2014). Their agricultural participation is thus marked by both economic exploitation and caste oppression.

By contrast, women from dominant landholding castes may enjoy greater security but still remain constrained by patriarchal control over land, household decision-making, and mobility. Even when women inherit land, it is often managed by male relatives, reflecting deep-seated cultural norms around male authority in farming (Agarwal, 1994). Intersectionality, therefore, highlights that women's agricultural participation in Tamil Nadu is not homogenous but differentiated by caste, class, and regional contexts.

Regional variations also play a role. Women in the Cauvery delta, where irrigated paddy cultivation predominates, are engaged intensively in transplanting and harvesting. In contrast, women in drought-prone districts such as Ramanathapuram and Dharmapuri focus on dryland farming of millets and groundnut, which involves different labour dynamics (Rajeswari, 2018). Intersectionality thus captures the multiple and overlapping factors that structure women's agricultural participation.

4. Feminization of Agriculture Debate

Another important framework is the debate on the feminization of agriculture. This term refers to the increasing visibility of women in agricultural labour, often as a result of male migration to non-farm sectors (Deere, 2005). In Tamil Nadu, industrialization, urban employment, and overseas migration have drawn men away from agriculture, leaving women to shoulder greater responsibilities in farming.

While this shift has increased women's participation in agricultural tasks, it does not necessarily imply empowerment. Scholars caution that feminization often signifies the feminization of distress, as women bear heavier workloads without corresponding recognition, rights, or remuneration (Kelkar, 2009). For instance, women who manage farms in their husbands' absence rarely have their names on land titles, limiting their access to credit, crop insurance, and government subsidies (Swaminathan, 2010).

Moreover, feminization intersects with technological exclusion. As agriculture modernizes, women are often displaced by machinery rather than integrated into new roles. For example, mechanical harvesters have drastically reduced demand for manual harvesting labour, historically dominated by women (Chakraborty, 2014). Women seldom receive training to operate machinery or access to agri-tech platforms, reinforcing their marginalization within the agrarian economy.

Thus, the feminization debate in Tamil Nadu highlights a paradox: women's increased labour participation is not accompanied by increased rights or institutional recognition. Without structural reforms, feminization risks entrenching gender inequality rather than alleviating it.

Theoretical frameworks provide critical insights into women's agricultural participation in Tamil Nadu. Feminist political economy exposes how women's labour is undervalued and displaced by capitalist transformations. The empowerment and capabilities approach shows both the potential and limits of financial inclusion strategies like SHGs. Intersectionality highlights how caste, class, and regional variations shape women's differentiated experiences in agriculture. Finally, the feminization debate underscores the paradox of visibility without empowerment.

Together, these frameworks reveal that women's agricultural participation in Tamil Nadu is marked by structural inequalities that persist despite their indispensable contributions. Addressing these requires gender-sensitive

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agrarian reforms that secure women's land rights, ensure equitable wages, and provide institutional recognition as farmers. Only then can women move from being invisible labourers to empowered agents of agrarian transformation.

METHODOLOGY

This study adopts a qualitative and analytical research design, combining secondary data analysis with theoretical interpretation to examine women's agricultural participation in Tamil Nadu. The methodology is structured around three key components.

First, a review of secondary data sources—including National Sample Survey (NSS) reports, Census of India data, Tamil Nadu government agricultural policy notes, and International Labour Organization (ILO) statistics—provides a macro-level understanding of women's participation patterns, wage disparities, and land ownership trends.

Second, the research integrates case study analysis drawn from published field-based studies in districts such as Madurai, Thanjavur, Dharmapuri, Villupuram, and Cuddalore. These case studies, documented in peer-reviewed journals, NGO reports, and state project evaluations, illuminate the lived experiences of women farmers, SHG members, and Dalit agricultural laborers.

Third, a theoretical framework approach—drawing on feminist political economy, empowerment theory, and intersectionality—guides the critical analysis of gendered structures in agriculture. These frameworks help interrogate how class, caste, patriarchy, and policy regimes shape women's agricultural roles.

Overall, the methodology is interdisciplinary, combining empirical evidence with theoretical critique to highlight contradictions and propose pathways toward a gender-just agrarian transformation in Tamil Nadu.

KEY DIMENSIONS OF WOMEN'S AGRICULTURAL PARTICIPATION IN TAMIL NADU

Women are indispensable actors in Tamil Nadu's agrarian economy, yet their roles are shaped by multiple structural inequalities. Understanding women's participation requires analyzing dimensions such as land rights, labour and wages, technological change, climate stress, and policy frameworks. Each of these factors highlights the paradox of women being central to agriculture but marginalized in recognition, benefits, and decision-making.

1. Land Ownership and Tenure Security

Land remains the most critical determinant of agricultural identity in India, conferring access to credit, state subsidies, and decision-making power. However, in Tamil Nadu, women's access to land ownership is severely constrained. According to the *Agricultural Census* (2015–16), women accounted for less than 13% of operational holdings in Tamil Nadu, reflecting entrenched patriarchal inheritance practices and male-centered patrilineal property regimes (Government of India, 2019).

Even when women inherit land, they often transfer management rights to male kin, resulting in "paper ownership" without substantive control (Agarwal, 1994). This lack of tenure security restricts women's participation in formal cooperatives, farmer producer organizations, and agribusiness contracts. It also denies them collateral for credit, undermining investment in improved farming practices (Swaminathan, 2010). As a result, women remain "workers without rights," excluded from the institutional architecture of agricultural development.

2. Labour and Wages

Women in Tamil Nadu are concentrated in labour-intensive tasks such as sowing, transplanting, weeding, harvesting, and threshing (Rajeswari, 2018). Despite their indispensable role, wage disparities persist, with women earning 20–30% less than men for similar tasks (Chakraborty, 2014). For instance, in paddy cultivation, female labourers are paid less per day than male counterparts engaged in comparable work.

Agricultural employment for women is predominantly informal, with limited access to maternity benefits, health coverage, or old-age pensions (Kelkar, 2009). The Minimum Wages Act, though applicable, is poorly enforced in rural Tamil Nadu, leaving women dependent on landlords, contractors, and intermediaries. Wage discrimination is further compounded by caste hierarchies: Dalit women agricultural workers often face the harshest forms of underpayment, lack of job security, and caste-based exclusion from irrigation or wage negotiations (Kapadia, 1993). This structural wage gap perpetuates women's economic vulnerability despite their centrality to production.

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3. Technology and Mechanization

Technological modernization in Tamil Nadu agriculture has generated mixed consequences for women. The spread of tractors, harvesters, and herbicides has reduced demand for tasks traditionally performed by women. For example, mechanical paddy transplanters and harvesters have displaced women in transplanting and harvesting operations, while herbicide sprays have curtailed demand for manual weeding (Chakraborty, 2014).

Women are rarely trained to operate machines or given access to agri-tech platforms, reflecting gendered technological exclusion (Kelkar, 2009). This exclusion not only erodes women's traditional roles but also prevents them from participating in new, higher-value technological opportunities. Thus, rather than alleviating drudgery or enhancing productivity, mechanization has reinforced gender disparities in Tamil Nadu's agrarian economy.

4. Climate Change and Environmental Stress

Tamil Nadu is one of India's most climate-vulnerable states, facing recurring droughts, cyclones, and acute water stress (Government of Tamil Nadu, 2020). Women farmers are disproportionately affected, as they are often responsible for subsistence crops, livestock rearing, fuelwood collection, and household water management. Climate shocks exacerbate their "triple burden" of productive, reproductive, and community work (Mies, 1986). For instance, prolonged droughts in districts like Ramanathapuram and Dharmapuri have forced women to travel longer distances for water, while also managing crop failures and reduced household incomes. Empirical studies show that climate-induced crop losses increase women's workloads while diminishing their bargaining power within households (Chakraborty, 2014). Moreover, as male outmigration rises during crises, women are left as de facto farm managers, but without institutional recognition or support. Climate change thus intensifies both labour burdens and vulnerabilities for women in agriculture (Kulanthaivelu et al. 2022).

5. Policy and Institutional Support

Tamil Nadu has a relatively strong tradition of welfare-oriented governance. Schemes such as Mahalir Thittam (Women's Development Programme), the Pudhu Vaazhvu Project, and the extensive self-help group movement have enhanced women's participation in microenterprises, financial inclusion, and collective farming (Deshmukh-Ranadive, 2005). These interventions have improved women's access to credit and fostered solidarity networks. However, the state's agricultural policy frameworks remain largely gender-neutral. Subsidy schemes, crop insurance, extension services, and training programs are rarely tailored for women farmers, who continue to be identified as "farmers' wives" rather than farmers themselves (Swaminathan, 2010). Even in SHGs, activities are often confined to microcredit and small-scale enterprises rather than transformative changes in land rights or agricultural decision-making. This policy gap reflects a disconnect between women's actual participation in agriculture and their institutional recognition as independent farmers.

The key dimensions of women's agricultural participation in Tamil Nadu reveal a persistent paradox: women are indispensable to the agrarian economy yet remain structurally marginalized. Land ownership continues to be elusive, wages remain discriminatory, technological modernization displaces rather than empowers them, climate change intensifies their burdens, and policy frameworks fail to institutionalize their roles. Addressing these inequalities requires gender-sensitive reforms in land rights, wage enforcement, technological training, and climate adaptation policies. Without such structural interventions, women's agricultural contributions will remain invisible despite their centrality to Tamil Nadu's rural livelihoods.

CASE STUDIES AND EMPIRICAL INSIGHTS

Women's agricultural participation in Tamil Nadu is not a uniform phenomenon but is mediated by collective action, crop choices, caste hierarchies, and state–civil society interventions. Case studies from different districts highlight both the possibilities and constraints of women's engagement in agriculture. Three prominent areas of empirical insight include self-help groups, millet revival initiatives, and the experiences of Dalit women agricultural workers.

1. Self-Help Groups and Agriculture

Tamil Nadu has one of the most vibrant self-help group movements in India, initiated during the early 1990s through the *Mahalir Thittam* programme. The state government, in partnership with NGOs and banks, institutionalized women's SHGs to promote savings, microfinance, and livelihood security (Swaminathan, 2010). Over time, SHGs in districts such as Madurai, Thanjavur, and Salem have expanded beyond credit activities to include collective leasing of land, group farming, and cooperative marketing of produce (Deshmukh-Ranadive, 2005).

Empirical evidence suggests that SHG-based collective farming enables women to overcome some of the structural barriers of landlessness and marginalization. By pooling resources, women negotiate land leases

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collectively, thereby reducing their dependence on landlords. Collective production also facilitates risk-sharing and enhances women's bargaining power in local markets (Rajeswari, 2018). In Madurai district, for instance, SHG members leased fallow land and successfully cultivated vegetables, selling them directly in urban markets, which increased their earnings and reduced exploitation by middlemen (Kannan, 2019).

However, sustainability of SHG-led farming is constrained by limited access to irrigation facilities, inadequate technical support, and weak linkages with agricultural extension services (Chakraborty, 2014). Group farming often relies on rainfed conditions, making it vulnerable to climate variability. Moreover, while SHGs promote financial inclusion, they do not necessarily transform gendered property relations, as most land remains under male ownership. Thus, SHGs illustrate both the potential and limitations of grassroots women's collectivization in agriculture.

2. Millet Revival and Women Farmers

In rainfed districts such as Dharmapuri and Krishnagiri, women farmers have been at the forefront of millet revival programs, supported by NGOs like the DHAN Foundation and government schemes under the *National Food Security Mission* (NFSM). Millets—traditionally cultivated by women—are resilient crops requiring less water, making them crucial in the face of Tamil Nadu's recurrent droughts and climate stress (Agarwal, 2018).

Empirical studies indicate that women's groups have revitalized millet cultivation by combining traditional knowledge with new market strategies. In Krishnagiri, women's collectives engaged in seed preservation, organic farming, and value addition through millet-based food processing (Sathyamala, 2019). These initiatives not only enhanced food security but also generated supplementary income through small-scale enterprises such as producing millet flour, snacks, and ready-to-cook mixes for urban consumers.

Women's involvement in millet revival underscores their role as custodians of agro-biodiversity and adaptive managers in climate-vulnerable contexts (Kelkar, 2009). Furthermore, millet promotion aligns with nutritional security goals, as millets are rich in fiber, iron, and micronutrients, addressing rural malnutrition. However, challenges remain in scaling up these initiatives due to limited institutional procurement, weak market linkages, and the continued dominance of rice and wheat in the Public Distribution System (PDS). Thus, while millet revival demonstrates women's resilience and leadership, it requires stronger state support to ensure sustainability and economic viability.

3. Dalit Women Agricultural Workers

While collective farming and crop diversification highlight positive examples of women's agency, the experiences of Dalit women agricultural workers in Tamil Nadu reveal entrenched inequalities and vulnerabilities. Research in Villupuram and Cuddalore districts documents the exploitative conditions under which Dalit women labourers work (Kapadia, 1993; Gopalakrishnan, 2012).

Dalit women often face wage discrimination, earning significantly less than male workers and even less than upper-caste female workers for the same tasks (Rajeswari, 2018). In addition to economic marginalization, they are subject to caste-based exclusion from irrigation networks, preventing them from accessing timely water for cultivation. Landlords from dominant castes often restrict Dalit women from entering irrigated fields, reinforcing caste hierarchies within agrarian production (Chakraborty, 2014).

Beyond economic exploitation, Dalit women agricultural workers also confront gendered violence and harassment. Studies report instances of sexual harassment and coercion by landlords, particularly in situations where women depend on them for seasonal employment (Gopalakrishnan, 2012). These vulnerabilities are compounded by the absence of formal contracts, lack of grievance mechanisms, and weak enforcement of labour protections in rural Tamil Nadu.

Such intersectional marginalization highlights the limitations of generic "women's empowerment" frameworks that fail to account for caste oppression. Unlike middle- or upper-caste women who may engage in SHG-based farming or entrepreneurship, Dalit women remain concentrated in the most precarious segments of agricultural wage labour. Their experiences underscore the necessity of adopting intersectional policy approaches that address both caste and gender in agricultural development.

These case studies from Tamil Nadu demonstrate that women's agricultural participation is both diverse and unequal. SHGs and collective farming offer pathways for empowerment but are limited by resource constraints and lack of institutional support. Millet revival programs illustrate women's ecological knowledge and resilience,

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yet face structural challenges in market integration. In contrast, the lived realities of Dalit women agricultural workers reveal the persistence of intersectional vulnerabilities rooted in caste and patriarchy.

Together, these empirical insights reveal that enhancing women's role in agriculture requires moving beyond celebratory narratives of "feminization" or "empowerment" to address deeper structural barriers. Policies must integrate gender, caste, and class dimensions while supporting women with land rights, irrigation access, fair wages, and protection from exploitation. Only then can women's contributions to Tamil Nadu's agrarian economy be recognized and strengthened in a transformative manner.

CRITICAL ANALYSIS

Women's agricultural participation in Tamil Nadu embodies a paradoxical reality in which visibility in fields does not translate into recognition, rights, or empowerment. A critical analysis of existing dynamics reveals four key contradictions.

1. **Visibility vs. Recognition:** Women are omnipresent in agricultural operations—from sowing and transplanting to harvesting and livestock care—yet they remain institutionally invisible. Official definitions of "farmer" continue to privilege land ownership, a domain largely monopolized by men (Agarwal, 1994). As a result, women are classified as "helpers" or "wage labourers" rather than primary cultivators, excluding them from entitlements such as crop insurance, subsidies, and institutional credit.
2. **Participation vs. Empowerment:** High levels of female participation in agriculture do not automatically translate into empowerment. Structural barriers such as patriarchal inheritance practices, unequal wages, and exclusion from decision-making undermine women's bargaining power (Rajeswari, 2018). Empowerment requires more than labour contribution—it demands access to resources, agency, and autonomy, all of which remain constrained.
3. **Technological Progress vs. Gender Exclusion:** Agricultural modernization in Tamil Nadu has been marked by mechanization and cash-crop expansion. While these shifts enhance productivity, they often displace women from labour-intensive roles without offering alternative opportunities (Chakraborty, 2014). Moreover, women are rarely trained to operate machines or integrate into value chains, reflecting systemic gendered exclusion from technological progress.
4. **Policy Intent vs. Policy Gaps:** Tamil Nadu's welfare orientation is commendable, with strong networks of women's self-help groups and social schemes. Yet agricultural policy frameworks remain largely gender-neutral, failing to account for women's structural disadvantages (Swaminathan, 2010). This disconnect between policy intent and implementation perpetuates systemic exclusions, leaving women as indispensable yet unrecognized contributors. Thus, women's agricultural participation in Tamil Nadu highlights the contradictions of a system where labour is visible, but rights and recognition remain elusive.

TOWARDS A GENDER-JUST AGRARIAN FUTURE

Transforming women's agricultural participation in Tamil Nadu into genuine empowerment requires bridging the contradictions between labour, rights, and recognition. Both theoretical insights and policy directions suggest pathways toward a more gender-just agrarian future.

1. **Land Rights Reform:** Securing land rights is fundamental to altering women's agrarian identity from "workers" to "farmers." Joint land titles, gender-sensitive inheritance laws, and tenancy rights would not only provide women with ownership but also enhance access to institutional credit, subsidies, and decision-making spaces (Agarwal, 2018).
2. **Gender-Sensitive Technology:** Mechanization must be reoriented to include women rather than displace them. Training women in the operation of agricultural machinery, supporting women-led agri-tech startups, and designing ergonomically appropriate tools can help reduce gendered technological exclusion (Kelkar, 2009).
3. **Recognition of Unpaid Labour:** Women's unpaid contributions—such as seed preservation, household food production, and livestock care—remain invisible in agricultural statistics. Conducting time-use surveys and integrating such labour into national accounts would challenge androcentric definitions of productivity and highlight women's centrality in food systems (Swaminathan, 2010).
4 **Intersectional Interventions:** Agricultural policy must account for caste and class inequalities, ensuring equitable benefits for Dalit and landless women, who are often relegated to low-paid wage labour under exploitative conditions (Gopalakrishnan, 2012). Intersectional frameworks are vital to ensure that empowerment strategies do not privilege only upper-caste or land-owning women.
5. **Climate-Resilient Gender Strategies:** Tamil Nadu's vulnerability to droughts and cyclones necessitates gender-responsive climate adaptation. Integrating women's traditional ecological knowledge into adaptation plans, supporting crop diversification, and promoting sustainable farming practices can strengthen both resilience and gender justice (Chakraborty, 2014).

A gender-just agrarian future requires moving beyond participation to structural transformation—recognizing women as farmers, innovators, and decision-makers at the heart of Tamil Nadu's agricultural economy (Sivakumar & Manimekalai, 2021).

CONCLUSION

Women's agricultural participation in Tamil Nadu reflects a striking paradox: their labour is indispensable yet undervalued, their presence in fields is highly visible yet institutionally invisible. Theoretical perspectives such as feminist political economy, empowerment and capabilities approaches, and intersectionality demonstrate that women's contributions are systematically marginalized within patriarchal, caste-based, and capitalist agrarian structures. These frameworks highlight how landlessness, wage discrimination, exclusion from technology, and policy gaps converge to limit women's recognition as farmers and decision-makers.

Empirical insights from Tamil Nadu—ranging from SHG-based collective farming to millet revival programs—illustrate women's resilience, innovation, and capacity for collective action. At the same time, the persistent exploitation of Dalit women agricultural workers exposes the deep intersectional vulnerabilities that cannot be addressed through gender-neutral or one-size-fits-all interventions. Welfare schemes and SHG movements have created important entry points for financial inclusion and community mobilization, but without structural reforms, their impact remains partial and uneven.

For Tamil Nadu to move towards a gender-just agrarian future, women must be repositioned at the centre of agricultural identity and policymaking. This requires reforms in land rights to ensure ownership and control, gender-sensitive technological interventions, fair labour standards, and climate-resilient strategies that draw upon women's ecological knowledge. Most critically, it demands recognition of women not merely as "helpers" but as farmers, innovators, and rights-bearing citizens whose labour sustains the rural economy.

A transformative shift in theory, policy, and practice is thus essential. Gender justice in agriculture is not only a matter of equity for women but also a precondition for the long-term sustainability and resilience of Tamil Nadu's agrarian economy in the twenty-first century.

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