ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL
Available Online: https://assajournal.com
Vol. 04 No. 02. Oct-Dec 2025.Page#.1150-1155
Print ISSN: 3006-2497 Online ISSN: 3006-2500
Platform & Workflow by: Open Journal Systems
https://doi.org/10.5281/zenodo.17493857

Problems Faced by Rural Women in Coastal Areas of Sindh, Pakistan

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ABSTRACT
Rural women are pivotal contributors to agriculture, livestock, and fisheries worldwide, yet they remain among the most marginalized groups in terms of access to resources, education, and decision-making. In Pakistan, and particularly in Sindh's coastal districts, these challenges are intensified by environmental degradation, sea intrusion, and entrenched socio-cultural barriers. This study examines the multifaceted problems faced by rural women in the Thatta and Badin districts of Sindh Province through a survey of 300 respondents selected via multistage cluster sampling. The findings reveal that most women have no formal education, possess limited access to modern technologies and agricultural extension services, and experience restricted participation in markets and community decision-making. Environmental hazards such as soil salinity, freshwater scarcity, and declining fisheries further destabilize household incomes. The study concludes that empowering rural coastal women requires gender-responsive agricultural policies, climate-resilient livelihood programs, and sustained investments in education, skills development, and institutional support.

Keywords: *Rural Women, Coastal Area Sindh, Gender Disparities, Economic Empowerment.*

Introduction

Rural women are a foundational pillar of subsistence agriculture, small-scale farming, and community food systems across the developing world. Their contributions span nearly the entire agricultural value chain from seed selection, planting, and weeding to harvesting, post-harvest handling, and marketing. They also play central roles in livestock care, poultry rearing, and, in many coastal zones, engage in artisanal fishing, aquaculture, and seafood processing. Despite these extensive contributions, gender-based disparities in access to productive resources persist. Women farmers and fishers often face restricted access to land rights, agricultural inputs and technologies, extension services, credit, and market opportunities (FAO, 2023a; OECD & FAO, 2023). According to the Food and Agriculture Organization (FAO, 2023b), closing gender gaps in

agrifood systems could generate nearly USD 1 trillion in additional global output and lift millions of people out of food insecurity. Coastal and environmentally fragile regions impose additional burdens on rural women. Sea-level rise, saltwater intrusion, soil salinization, and declining freshwater availability are eroding the natural resource base upon which many women's livelihoods depend. These disruptions, compounded by limited access to training, technology, infrastructure, and markets, make women in such settings disproportionately vulnerable to income shocks and livelihood insecurity (FAO, 2025; *The Guardian*, 2024). Similar trends have been documented globally, with recent analyses showing that climate-induced agricultural losses exacerbate gender inequities in income and labor (Asian Scientist, 2024; Lecoutere et al., 2023). In Pakistan, agriculture remains a key sector of the economy and employment, particularly in rural and coastal regions. Yet women's work in agriculture and fisheries is often hidden, informal, and undervalued. A 2023 national analysis revealed that women farmers remain largely unrecognized in agricultural policy, lack secure access to land and credit, and shoulder heavy workloads (Dawn, 2024). Experts increasingly emphasize that investing in rural women's empowerment is a missing link in Pakistan's agricultural transformation (Friday Times, 2025). Sindh's coastal districts particularly Thatta and Badin, which together comprise over 350 km of coastline along the Arabian Sea illustrate a sharp interplay between ecological vulnerability and socio-cultural constraints. These regions possess strong agricultural, livestock, and fishery potential, yet face escalating threats of salinization, freshwater scarcity, and livelihood displacement (Wagan et al., 2024). Women in these areas cultivate saline-prone soils, manage livestock, collect fodder, and process seafood. However, they lack access to mechanized tools, cold storage, market linkages, and extension services, while decision-making remains male-dominated (Local Assessments, 2024). Seasonal fluctuations in crops and fish production push many into supplementary wage labor or home-based handicrafts, deepening the cycle of vulnerability. Cultural norms further restrict women's mobility, economic autonomy, and educational attainment, reinforcing long-term inequalities. National and regional studies demonstrate that gender-blind agricultural policies risk widening existing disparities, whereas gender-responsive investments enhance productivity, resilience, and household well-being (Ali & Khan, 2022; *Agri-Economist*, 2023). Within this context, addressing women's challenges in Sindh's coastal zones is essential to achieving equitable and sustainable rural development.

Objectives

1. To assess the socio-economic characteristics of rural women in Thatta and Badin.
2. To identify the major challenges faced by women in agriculture, livestock, and fisheries.
3. To suggest policy interventions for women's empowerment in coastal Sindh.

Methodology

Study Area

The study was conducted in the coastal districts of Thatta and Badin in Sindh, Pakistan, selected due to their significant reliance on agriculture, livestock, and fisheries, coupled with their vulnerability to environmental challenges such as sea intrusion and salinization. These districts, located along the 350 km coastline of the Arabian Sea, represent critical areas where rural women contribute substantially to local economies despite facing socio-economic and environmental constraints.

Sampling Design

A multistage cluster sampling approach was employed to select respondents. In the first stage, two districts (Thatta and Badin) were purposively chosen based on their coastal location and economic dependence on agriculture and fisheries. In the second stage, two talukas (sub-districts) from each district were selected: Keti Bandar and Gora Bari from Thatta, and Badin and

Golarchi from Badin. In the third stage, two union councils were randomly selected from each taluka, followed by the random selection of three villages per union council. A total of 300 rural women were surveyed, with 75 respondents from each taluka, ensuring a balanced representation across the study area.

Table 1: Sample Distribution

District	Taluka	Union Councils	Villages	Respondents
Thatta	Keti Bandar	2	3	75
Thatta	Gora Bari	2	3	75
Badin	Badin	2	3	75
Badin	Golarchi	2	3	75
Total	-	**8**	**12**	**300**

Data Collection

Data was collected using a mixed-method approach to capture both quantitative and qualitative insights. A structured questionnaire was administered to the 300 respondents to gather information on socio-economic characteristics, access to resources, and challenges faced in agriculture, livestock, and fisheries. The questionnaire included sections on age, education, household size, knowledge of improved technologies, and specific barriers encountered. Additionally, focus group discussions (FGDs) were conducted in each village to explore qualitative aspects, such as socio-cultural constraints and environmental impacts, allowing for a deeper understanding of women's experiences and perspectives.

Data Analysis

The data collected analyzed using descriptive statistics, including percentages and frequencies, to profile the socio-economic characteristics of the respondents and identify the extent of their challenges. Quantitative data from the questionnaires were tabulated to highlight patterns in education levels, technology adoption, and livelihood constraints. Qualitative data from FGDs were thematically analyzed to complement the quantitative findings, providing context to the structural, cultural, and environmental barriers faced by rural women in the study area.

Table 2: Socio-Economic Profile

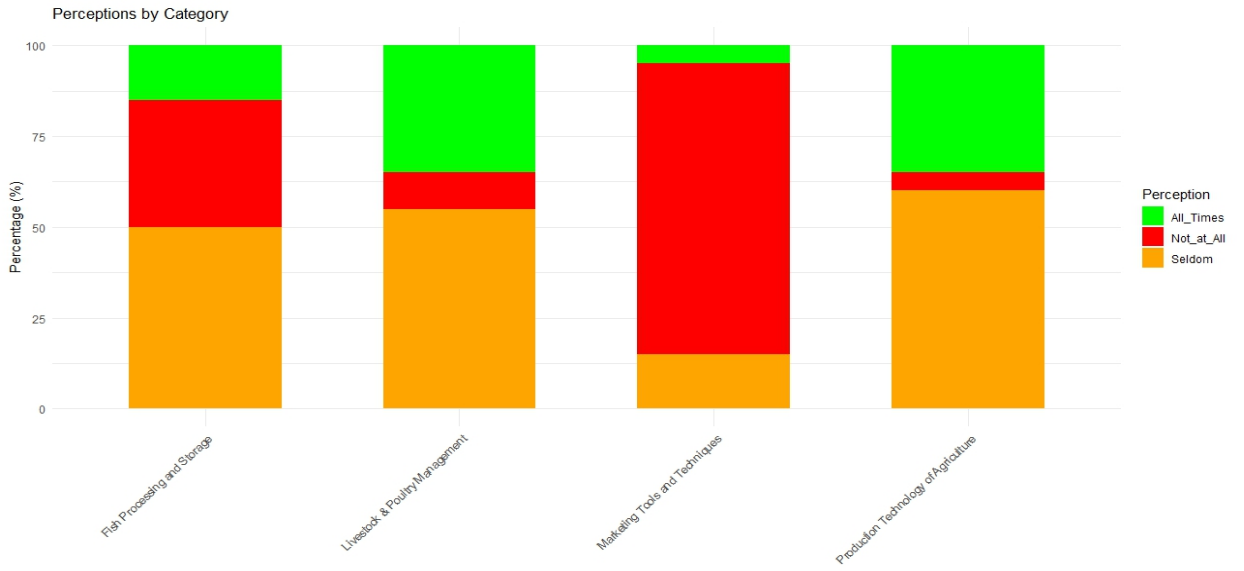
Characteristics	Category	%
Age	21–35 years	65
	36–50 years	25
	Above 50 years	10
Education	No education	70
	Primary	25
	Secondary	5
Family Size	0–5 members	45
	6–10 members	40
	11+ members	15

Description: Table 2 outlines the socio-economic profile of the respondents. The majority (65%) are aged 21–35, indicating a relatively young workforce. Education levels are low, with 70% having no formal education, 25% with primary education, and only 5% with secondary education. Household sizes vary, with 45% having 0–5 members, 40% having 6–10 members, and 15% having 11 or more members, reflecting diverse family structures.

Table 3: Distribution of Respondents by Knowledge of Improved Technology

Perception	Not at All (%)	Seldom (%)	All Times (%)	Total (%)
Production Technology of Agriculture	5	60	35	100
Livestock & Poultry Management	10	55	35	100
Fish Processing and Storage	35	50	15	100
Marketing Tools and Techniques	80	15	5	100

Description: Table 3 shows the respondents' knowledge of improved technologies across four areas. The majority (60%) have moderate knowledge of agricultural production technology, and 55% have moderate knowledge of livestock and poultry management. However, 35% have no knowledge of fish processing and storage, and 80% lack knowledge of marketing tools and techniques, highlighting significant gaps in technical and market-related skills.



Ethical Considerations

Obtained informed consent from all participants, ensuring they understood the study's purpose and their right to withdraw. Maintained confidentiality of responses and anonymized data to protect participants' identities. Secured approval from a local institutional review board to ensure compliance with ethical research standards.

Results

A survey of 300 rural women in Thatta and Badin districts, Sindh, revealed their socio-economic profile, technology knowledge, and challenges in agriculture, livestock, and fisheries. Most women (65%) are aged 21–35, 70% have no formal education, and household sizes vary (45% with 0–5 members, 40% with 6–10, 15% with 11+). Knowledge of improved technologies is moderate for agricultural production (60%) and livestock management (55%), but low for fish processing (35% have no knowledge) and marketing (80% have no knowledge). Key challenges include limited access to modern tools, saline soils, and low crop yields in agriculture; fodder and veterinary shortages in livestock; poor preservation and reliance on male middlemen in fisheries; and restricted mobility and decision-making power due to socio-cultural barriers.

Key Challenges Identified

1. Agriculture: Limited access to modern tools, saline soils, and low crop yields.
2. Livestock: Scarcity of veterinary services and fodder shortages.
3. Fisheries: Inadequate preservation methods and reliance on male middlemen.
4. Social Barriers: Restricted mobility and lack of decision-making power.

Discussion

The findings of this study align with recent global evidence emphasizing the continued marginalization of women within agricultural and rural development policies. The FAO (2023) report on *The Status of Women in Agrifood Systems* and OECD–FAO (2023) highlight that gender inequalities still constrain women's productivity and access to land, finance, and digital technologies across developing economies. These patterns are mirrored in Pakistan's context, where women in agriculture remain underrecognized despite their critical role in food production (Asian Scientist, 2024; CGIAR GENDER Impact Platform, 2023).

In the coastal districts of Thatta and Badin, rural women face unique challenges stemming from localized environmental issues such as sea intrusion, soil salinization, and freshwater scarcity, which exacerbate their socio-economic vulnerabilities compared with inland regions (Wagan et al., 2024). These environmental stressors, combined with deep-rooted socio-cultural norms, severely limit women's access to productive resources, extension services, and market opportunities (FAO, 2025; Lecoutere et al., 2023). Consistent with Shahbaz et al. (2020), the study confirms that women's engagement with agricultural extension remains minimal, restricting the adoption of improved practices and income diversification. The compounded effects of low literacy, restricted mobility, and exclusion from market participation reinforce gender disparities, underscoring the need for gender-responsive agricultural programs and climate-resilient livelihood strategies to empower rural women in coastal Sindh.

Conclusion

Rural women in coastal Sindh make significant contributions to agriculture, livestock, and fisheries, yet they face intersecting challenges of low literacy, limited resource access, environmental vulnerability, and socio-cultural restrictions. These barriers result in their contributions being undervalued and their economic marginalization persisting. Without deliberate and gender-responsive interventions, these women will remain disproportionately affected by environmental degradation and systemic inequalities, hindering both their empowerment and regional development.

Recommendations

1. Policy Interventions: Develop gender-sensitive agricultural policies and climate adaptation programs to address women's specific needs in coastal areas.
2. Capacity Building: Establish women-focused agricultural extension services, training centers, and microfinance schemes to enhance skills and economic opportunities.
3. Market Access: Promote women-led cooperatives and direct market linkages to reduce dependence on intermediaries and improve income stability.
4. Education and Health: Invest in girls' education and rural healthcare facilities to improve literacy and well-being, enabling greater participation in economic activities.
5. Climate Adaptation: Implement community-based initiatives to mitigate sea intrusion and soil salinity, ensuring sustainable livelihoods for women.

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