

Life and Livelihood of Women in the Sundarbans: A Survey

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ABSTRACT

The Sundarbans, the world's largest mangrove delta, sustains millions whose livelihoods depend on its fragile ecosystem. Women form the backbone of household and community economies, yet their roles often remain undervalued and unrecognized. This study examines the socio-economic conditions, livelihood patterns, and adaptive strategies of women in the Indian Sundarbans. Based on field surveys conducted across selected blocks of South 24 Parganas, supported by secondary sources, the research explores women's participation in agriculture, aquaculture, forest-based occupations, and cottage industries. The findings highlight significant vulnerabilities arising from climate-induced hazards, ecological degradation, gendered inequalities, and inadequate institutional support. At the same time, women demonstrate remarkable resilience through diversified livelihoods, self-help groups, traditional ecological knowledge, and collective adaptation. The study argues that enhancing women's access to education, healthcare, financial resources, and decision-making spaces is crucial for advancing gender equity and ecological sustainability in the Sundarbans.

Keywords: Sundarbans, women's livelihoods, climate vulnerability, gender equity, resilience, self-help groups

INTRODUCTION

The Sundarbans, spanning the southern part of Bangladesh and eastern India, constitutes the largest contiguous mangrove forest on the planet, covering approximately 10,000 sq. km. Designated as a UNESCO World Heritage Site, the region is ecologically significant for biodiversity and socio-economically vital for communities reliant on its natural resources. Women in the Sundarbans play crucial roles in sustaining households through agricultural labor, aquaculture, forest product collection, and domestic care work.

Yet their lives are marked by vulnerability. Environmental degradation, recurrent cyclones (Aila 2009; Amphan 2020; Yaas 2021), salinity intrusion, and land erosion intersect with patriarchal structures to compound marginalization (Dasgupta & Huq, 2016). Despite these challenges, women demonstrate resilience through diversified livelihoods and collective mobilization.

This study seeks to document women's livelihood patterns, constraints, and adaptive strategies, contributing to broader debates on gender, ecology, and climate justice.

METHODOLOGY

Study Area

The research was conducted in selected blocks of the Indian Sundarbans, primarily Gosaba, Basanti, Kultali, and Namkhana, located in South 24 Parganas district. These areas represent varying degrees of exposure to cyclones, salinity, and migration pressures.

Research Design

A mixed-methods approach was adopted, combining quantitative surveys with qualitative interviews and observations.

Sampling

Sample size: 120 women respondents

Sampling method: Stratified purposive sampling to ensure representation from agricultural households, aquaculture workers, forest-dependent families, and SHG members.

Age group: 18–60 years

Data Collection Tools

- Structured questionnaires
- Semi-structured interviews
- Focus group discussions (FGDs) with women's SHGs
- Field observations
- Review of government reports, NGO documents, and academic literature

Data Analysis

Quantitative data were analyzed using descriptive statistics. Qualitative data were coded thematically and triangulated with secondary sources.

Ethical Considerations

Informed consent was obtained from all respondents. Identities have been anonymized.

Socio-Economic Background

The Indian Sundarbans economy is characterized by subsistence agriculture, fishing, aquaculture, daily wage labor, and forest-based livelihoods. According to Raha and Mahapatra (2021), nearly 85% of households depend on multiple livelihood sources due to environmental uncertainties. Literacy remains below the state average, especially among women, limiting their access to formal employment and financial resources.

Gender relations are institutionally shaped by patriarchal norms, where women manage domestic responsibilities while participating extensively in productive work that is often unpaid or underpaid.

FINDINGS

Women's Livelihood Roles

Agriculture

Women perform seed selection, sowing, transplanting, weeding, and post-harvest activities. Increased soil salinity following cyclones has reduced paddy productivity, forcing shifts to salt-tolerant crops such as mung beans and sunflower (Ghosh, 2019). Women also manage homestead gardens and livestock, essential buffers during crop loss.

Aquaculture and Fishing

Thousands of women collect shrimp post-larvae, engage in crab fattening, or participate in fish drying. Survey results indicate:

- 42% of respondents involved in shrimp seed collection

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- 28% in crab-related work
 - 36% in fish processing

However, exposure to saline water causes chronic skin infections and reproductive health issues.

Non-Timber Forest Products (NTFPs)

While men dominate honey collection expeditions, women handle honey processing and marketing. Firewood and leaf collection remain common despite legal restrictions, highlighting livelihood–conservation tensions.

Cottage Industries

Mat weaving (madur), kantha embroidery, and basket weaving are practiced widely. NGO-supported cooperatives have increased market access, raising women’s earnings from an average ₹600 to ₹1,800 per month (field survey, 2024).

Challenges Faced by Women

Environmental Vulnerability

Cyclones have destroyed embankments, homes, croplands, and freshwater sources. Women, often left behind during male migration, shoulder additional responsibilities in crisis recovery.

Health and Nutrition

Survey data reveal:

- 62% of women suffer from anemia
- 48% report chronic back pain or joint issues
- Only 22% have access to nearby health facilities

These issues are exacerbated by long work hours and exposure to saline environments.

Education and Decision-Making Barriers

- Only 38% of surveyed women had completed secondary education.
- Less than 10% had direct involvement in local governance bodies.

Early marriage and household labor contribute significantly to school dropout rates among girls.

Migration and Feminization of Responsibility

Male out-migration has increased women’s workload in managing farms, finances, and childcare. Although this expands their roles, limited institutional support restricts transformative empowerment.

Policy Exclusion

Despite government schemes (MGNREGS, NRLM, ICZMP), lack of infrastructure, bureaucratic delays, and weak gender-sensitive implementation hinder women’s participation.

Resilience and Adaptation Strategies

Income Diversification

Most women combine agriculture, aquaculture, and handicrafts to reduce risk exposure.

Role of SHGs

SHGs in Gosaba and Namkhana have improved access to microcredit, enabling small enterprises such as mushroom cultivation and poultry farming. Members report increased decision-making power (Ghosh, 2019).

Traditional Ecological Knowledge

Women maintain knowledge of mangrove species, medicinal plants, and fish cycles, contributing to household food security.

Disaster Preparedness

NGO-trained women demonstrate stronger awareness of evacuation procedures, first aid, and community-level risk management.

Digital Inclusion

Mobile-based weather alerts and market information have improved planning and reduced livelihood uncertainty.

DISCUSSION: TOWARD GENDERED ECOLOGICAL JUSTICE

The findings illustrate that women's vulnerabilities arise from an intersection of ecological hazards, socio-economic marginalization, restricted mobility, and gendered labor divisions. Yet women are also central actors in local adaptation and environmental stewardship. A framework of gendered ecological justice demands:

- Recognition of women's unpaid labor
- Equitable access to land, credit, health, and education
- Inclusion of women in climate adaptation and resource governance
- Support for community-led and women-led resilience initiatives

Policy interventions must therefore shift from welfare-based approaches to rights-based, participatory models.

LIMITATIONS

- The study relies partly on self-reported data, which may contain recall bias.
- Seasonal variations in livelihood patterns were not captured due to time constraints.
- Some remote islands were inaccessible, limiting geographical coverage.
- Quantitative data remain modest; future studies should incorporate larger surveys or longitudinal designs.

CONCLUSION

Women in the Sundarbans embody resilience amid profound ecological and socio-economic challenges. Their contributions to agricultural work, aquaculture, forest product management, and household sustenance are indispensable. For sustainable and equitable development, policies must prioritize:

- Women's education and literacy
- Access to credit, land rights, and financial inclusion
- Climate-resilient infrastructure and health services

- Participation in local governance and conservation planning

As UNESCO (2022) notes, the future of the Sundarbans depends on both ecological conservation and social inclusion. Empowering women as central stakeholders—not peripheral beneficiaries—is essential for building a resilient and sustainable delta.

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