

Shrimp farming and the struggles of landless women in Paikgacha, Southern Coastal Bangladesh: Implications for nutrition-sensitive agri-food system



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Salma Begum, Indu K. Sharma, Deepa Joshi and James Garrett

December 2024



This field brief draws on findings from a study conducted as part of *Inclusive Governance and Nutrition-Sensitive Agri-Food Systems Transformation* work within CGIAR's Asian Mega Deltas (AMD) Initiative. The data for the study was collected in the Paikgachha sub-district of coastal Bangladesh between September 18 and 23, 2024.

Context

Paikgacha Upazila in Khulna district is one of many locations in coastal Bangladesh affected by high salinity of land (soil) and water. This is largely due to the numerous "ghers"- enclosed water bodies used for shrimp farming that dominate this region. An export-oriented shrimp aquaculture was initiated in the southern coastal deltas of Bangladesh in the early 1980s (Ito, 2010), officially recognized then by the government as an export industry in the Second Five-Year Plan (1980-85) (Alauddin and Hamid, 1999). The industry boomed due to enabling policies, such as the 2014 National Shrimp Policy (NSP), and shrimp farming did become a key contributor to the national economy, with export earnings amounting to more than \$400 million in 2022 (CGIAR Initiative on One Health, 2023).

Landless women in Salabunia cluster of Paikgacha

However, for women like Anika Mandal, Parbati Barman, Rani Mandal, and Bina Mandal (names changed for anonymity), shrimp farming is a livelihood that is tied with risks, uncertainties, vulnerabilities, and exclusion. These women share a common story - they belong to landless families which are excluded from many agriculture and food programs implemented in the region. For these marginalized households, the industry offered daily labor opportunities to work in other people's gheras, as well as options to lease small - one-to-two-acre gheras to try and make a living.

A shift from rice to shrimp: Impacts on food and livelihood security

Rice farming was once a common livelihood for marginalized households. However, in the 1980s, official policies began promoting brackish water shrimp farming. This marked a shift from earlier government efforts in the 1960s, which focused on constructing a large number of coastal embankments to protect agricultural lands from tidal waves and saline water intrusion. Strong international market demand and high shrimp prices encouraged farmers to adopt shrimp farming

within the polders created by these embankments. This transition was further supported by official interventions, as rice cultivation had become increasingly unviable due to waterlogging caused by poor drainage in the polders. The economic benefits of shrimp farming were significant, with the international shrimp market providing substantial foreign exchange earnings for the government (Deb, 1998). This shift, coupled with the potential for higher economic returns, attracted outside investors who often purchased, forcibly leased, or appropriated land for shrimp aquaculture. Marginal small farmers were frequently compelled to sell their small agricultural plots at low prices to elite investors (Zami, 2022).

Shrimp farming is also far less labor-intensive than rice farming. While rice cultivation on 40 hectares employs 50 workers, shrimp farming on the same area requires just 5 (Shiva, 1995). As soon as the construction of a gher is completed, employment opportunities for local smallholders and the landless laborers decline drastically.

“Earlier, we worked as daily laborers on others' farms and leased land to grow a mix of crops – rice, lentils, and vegetables- to meet our food needs. We also raised livestock with rice fodder and earned money selling them. Our food needs were met, and we relied less on markets.

As the women reflected.

Shrimp and crab-processing factories in the region do provide job opportunities for marginalized landless men and women. “More than 1.4 million women are engaged in Bangladesh's aquaculture sector. Yet they work mostly in low-status, low-paid and arduous jobs... women work 8-12-hour shifts standing on their feet in very low temperatures. Their hands often hurt from handling the shrimp, with their sharp edges, and the ice in which they are packed” (CGIAR World Fish 2018). The salinity levels in water bodies fluctuate throughout the year: *Rabi* (October to March), *Kharip-I* (March to July), and *Kharip-II* (July to October). In the past, these women worked with this cycle. During the saline months of *Kharip-I*, they used to cultivate shrimp, and in the rainy season (*Kharip-II*), they used to flush out the saline water to grow *Rabi* crops like rice and vegetables on the same land.

“We used to do this (crop cycle) fifteen to twenty years ago,

the women recalled.



See! How the natural system supported our nutrition and economy. We didn't rely entirely on purchased rice, vegetables, milk, or livestock fodder. We could work as day laborers in rice or lentil fields or maybe even watermelon.

The transition from rice farming to shrimp aquaculture has left long-term impacts on local communities. Food insecurity is now a daily reality for the people in Salabunia. Rising salinity, poor drainage, and waterlogging have made crop production nearly impossible, leaving smallholder and landless farmers vulnerable to market price fluctuations and environmental hazards.



Now, we are dependent on the market for our every little need, from drinking water to cooking fuel. No one understood how these things - water, land, soil, income, human wellbeing and health- are all interconnected in our lives.

The women stated.

Access to safe drinking water remains a daily struggle.



During the monsoon season, we collect rainwater, but for the rest of the year, our families must buy water from local markets.

Currently, the women pay 15 BDT (approximately \$ 0.12 USD) for 30 liters of water, with an additional transportation fee of 25 BDT (approximately \$ 0.21 USD), bringing the total of 40 BDT (approximately \$ 0.33 USD).

The shrimp bubble

The women remarked that no one knew how water, land (soil), and food security, nutrition and well-being were so intricately connected. But unknown to them, by 1999, the environmental and social impacts of shrimp farming- such as salinization of land and water, elite capture of freshwater resources, decreasing agri-food systems productivity and diversity, the destruction of mangrove and other forests, growing landlessness, shrimp-industry-related appropriations, conflicts, and violence - had become evident. It was clear that the negative impacts of this economic boom far outweighed the anticipated economic gains (Rasul and Chowdhury, 2010; UNEP, 1999). In practice, shrimp farming was lucrative for large landowners and elite outsider investors sufficiently powerful to handle shrimp culture plots, but it became a precarious reality for the marginalized.

Anika, Parbati, Rani, and Bina are among the millions of marginalized smallholders who bear the costs of the shrimp farming bubble in southern coastal Bangladesh. For those who have leased small plots of land and water for shrimp cultivation, the lack of proper embankments and water management infrastructure means that floods regularly destroy their ghers. These women have no control over freshwater allocation through sluice gates on rivers controlled by local elites. Unequal access to resources deepens their exclusion, as landless tenant farmers with few opportunities for improving farming practices or receiving compensations in times of loss.



Every year, we hope this will be a year where we can make some profit, pay off our debts, and improve our lives, but then the floods come, or disease strikes the shrimp, and we're always back where we started - or even worse.

As they expressed.

They long to return to a time when things were different, and they could grow their own rice and vegetables.



Ask around; no one in this community wants to stick with shrimp and saline water except for the powerful elites who control everything from canals to sluice gates.

They noted.

However, such embodied experiences have rarely been listened to in the design of policies. Over the past decade, shrimp export earnings have steadily decreased from their peak of 550 million USD in 2012, due to a drop in quality and quantity caused by disease (CGIAR Initiative on One Health, 2023). Shrimp farming is no longer consistently profitable in the southern coastal deltas.

Excluded from government and NGO programs

Despite being the most vulnerable in their local community, these women often find themselves excluded from agricultural initiatives and fisheries programs – which are all driven by certain cut-off selection criteria. Agricultural programs such as the nutrition garden program requires a particular amount of land ownership in the homestead, which these women lack. Consequently, they continue to struggle on the periphery of development efforts, excluded by such criteria. At other times, programs like the Sustainable Coastal and Marine Fisheries Project require financial investments from participants that these women cannot afford. Programs like the Green Climate Fund (GCF) have enabled many women in Paikgacha, but these landless women remain excluded from such initiatives. While some families have received safe water tanks through GCF, women like Anika, Parbati, Rani, and Bina still rely on purchased water and collect rainwater during the monsoon season. Even when there are no selection criteria that is exclusionary to them, third-party involvement, biases among local representatives, and disputes in the identification of beneficiaries lead to the exclusion of the most vulnerable, who lack voice and visibility in public spaces and forums.



We tried to include our name for the GCF, but we couldn't make it.

They shared.

Decision-making processes related to water management and resource access are dominated by local elites and powerful individuals. Women like Anika, Parbati, Rani, and Bina are left as outsiders, unable to influence decisions that affect their lives.

A bubble waiting to burst

Despite the challenges, they face, Anika, Parbati, Rani, and Bina demonstrate remarkable resilience. They continue to work, hope, and fight for their basic rights to food and livelihoods for themselves and their families. Their stories serve as a powerful reminder of the human and ecological costs of rapid economic growth and the need for more inclusive strategies.

The development of shrimp farming is driven by economic goals, not improved nutrition. As shrimp farming continues to evolve in Paikgacha, policymakers and program designers must consider the experiences of women like Anika, Parbati, Rani, and Bina. Transforming food systems to meet food and nutrition needs must include the most vulnerable members of the community to ensure no one is left behind. Empowering landless women farmers by involving them in decision-making, ensuring secure access to resources for their food and livelihoods, and providing resilient livelihood options are critical steps to breaking the cycle of vulnerability. Until then, these women will remain trapped in the shrimp farming bubble economy, which benefits the few while marginalizing the many, further worsening their food security and nutrition.

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Authors

Salma Begum, Independent Researcher, Dhaka, Bangladesh (salma_begum@outlook.com)

Indu K. Sharma, International Water Management Institute (IWMI), Lalitpur, Nepal (i.sharma@cgiar.org)

Deepa Joshi, International Water Management Institute (IWMI), Colombo, Sri Lanka (deepa.joshi@cgiar.org)

James Garrett, The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), Rome, Italy (j.garrett@cgiar.org)

Acknowledgements

This brief is part of the CGIAR Initiative on Asian Mega-Deltas, specifically Work Package 2 'nutrition-sensitive deltaic agri-food systems' and Work Package 4 'facilitating joined-up, gender-equitable, inclusive deltaic systems governance'. The authors thank the study participants for sharing their valuable experiences.

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The CGIAR Initiative on Asian Mega-Deltas aims to create resilient, inclusive, and productive deltas that maintain socio-ecological integrity, adapt to climatic and other stressors, and support human prosperity and well-being by removing systemic barriers to the scaling of transformative technologies and practices at the community, national, and regional levels. <https://www.cgiar.org/initiative/asian-mega-deltas/>

CGIAR Initiative on Aquatic Foods

The CGIAR Initiative on Aquatic Foods aims to tackle systemic challenges to the sustainability and resilience of aquatic food systems, including data gaps that lead to exclusion of the sector from wider food and nutrition policies and programs, and limited research investment. Working closely with research partners in fisheries and aquaculture, civil society, industry, and governments, the Initiative contributes to the reduction of greenhouse gas emissions from the production of aquatic foods and enhances ecological and social resilience through the development and dissemination of improved fish strains, better management practices, integrated fish-rice production systems and fish-friendly irrigation systems. <https://www.cgiar.org/initiative/aquatic-foods/>

Citation: Begum, S.; Sharma, I. K.; Joshi, D.; Garrett, J. 2024. *Shrimp farming and the struggles of landless women in Paikgacha, southern coastal Bangladesh: implications for nutrition-sensitive agri-food system*. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Initiative on Asian Mega-Deltas. CGIAR Initiative on Aquatic Foods. 6p.

Cover photo: Gher (shrimp farming pond) in coastal Bangladesh (Photo: Indu K. Sharma)

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We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

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