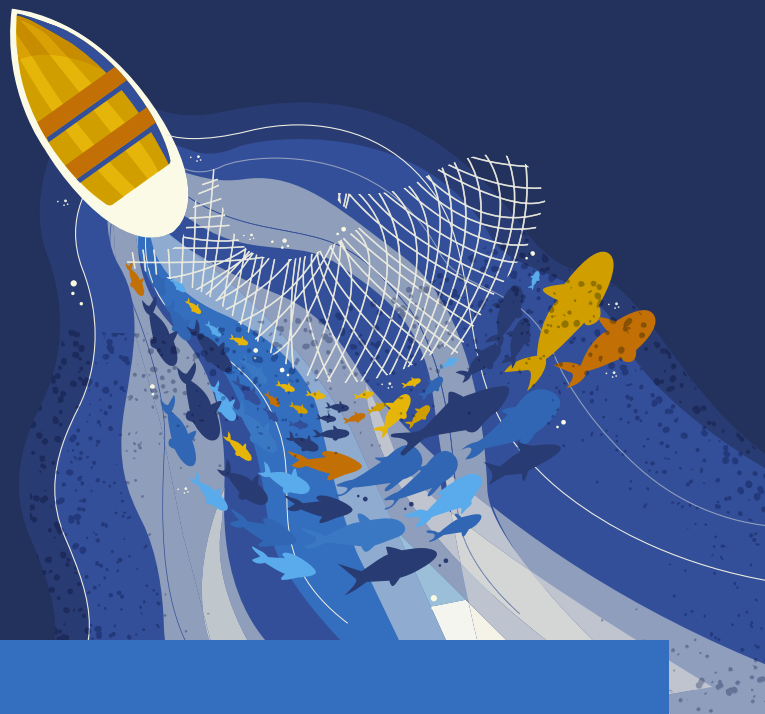


CASE STUDY

Bangladesh –

BHOLA



GEOGRAPHICAL CONTEXT

Bhola, the largest island district in Bangladesh, lies at the heart of the Meghna River estuary where the river meets the Bay of Bengal. Surrounded by dynamic river systems and coastal waters, it hosts vibrant and diverse ecosystems: freshwater, brackish and marine. Bhola is a critical hub for small-scale fisheries, particularly hilsa fishing (hilsa is the national fish of Bangladesh), which accounts for approximately 12% of the country's total fish production.¹ However, its geographic location makes it one of the most vulnerable regions in Bangladesh to climate-induced displacement and livelihood insecurity.

The villages of Baram Shura and Gangakirti, located in Dhonia Union of Bhola Sadar, lie close to the increasingly destructive banks of the Meghna River. Together, they are home to around 400–500 fisher families: approximately 250–275 families in Baram Shura and 200–225 in Gangakirti.² Fishing is the primary livelihood for nearly all of them.

1

ECOLOGICAL AND TERRITORIAL DISRUPTION FROM CLIMATE CHANGE AND HUMAN ACTIVITY

Fishing families in Bhola are facing growing ecological disruption caused by climate change:

- **RIVER EROSION AND LAND LOSS:** Both villages have experienced severe river erosion due to their proximity to the Meghna River's mouth. Over the past 3 to 5 years, erosion has intensified significantly, with annual rates sometimes reaching 10–15%. This has swept away large areas of land, uprooted trees, flooded agricultural fields, and sharply reduced available farmland. In Bhola alone, more than 16,000 hectares of land were lost between 1992 and 2022,³ threatening local livelihoods.

1 Department of Fisheries (DoF), "Yearbook of Fisheries Statistics 2022–23" (Dhaka: DoF, 2023).

2 Department of Fisheries (DoF), Bhola Sadar; Union Parishad, Dhonia Union, Bhola Sadar, Bhola.

3 "GIS and RS Based Monitoring of Bank Erosion Along with Meghna River at Bhola, Bangladesh," unpublished report or source type unspecified.

➤ **SEA-LEVEL INCREASE AND SALTWATER INTRUSION:** As sea levels rise and tidal surges grow stronger, saltwater intrusion has become a major threat.⁴ This is another emerging threat for the fishers in Balaram Shura and Gangakirti. Around 1.5 million hectares of coastal land in Bangladesh now suffer from salinity, reducing crop yields by an estimated 3.5 million tons annually.⁵ According to the IPCC, Bangladesh could lose at least 30% of its food production by 2050.⁶ This poses a direct threat to the rights to food and nutrition, land, and a dignified life for millions of small-scale producers and territory-dependent communities.

➤ **UNPREDICTABLE AND EXTREME WEATHER EVENTS:** Unseasonal rainfall and extreme weather events like cyclones and storms have increased in both frequency and intensity over the past two decades. Severe cyclones now strike Bangladesh every 10 years instead of every 100.⁷ Bhola is highly vulnerable to storm surges from Bay of Bengal cyclones. For example, Cyclone Amphan in 2020 displaced over 200,000 people in Bhola and submerged 1,000 hectares of farmland.⁸ Rising temperatures have also reduced dissolved oxygen levels in the water, stressing species like hilsa that depend on cooler conditions during migration and spawning. According to the Bangladesh Fisheries Research Institute, a 2°C increase in water temperature over the last 20 years has contributed to a 15-20% decline in the hilsa population in the Meghna River.

➤ **FLOODING, POLLUTION AND CONTAMINATION:** The area suffers severe flooding each year due to tidal surges, rising river levels, monsoon rains, and ongoing erosion. These floods affect around 7,000 hectares of land and cause major income losses for more than 60% of fisher families.⁹ Flooding, especially during monsoon season (June to September), frequently submerges low-lying areas like Balaram Shura and Gangakirti, damaging homes and disrupting daily life and fishing activities. Floodwaters carry agricultural runoff, industrial waste, and plastic pollution into the river, degrading water quality, reducing fish quantity and quality, and further threatening fishers' livelihoods.

4 Bangladesh Meteorological Department, "Annual Climate Vulnerability Atlas" (Dhaka: BMD, 2022).

5 Md. Nazrul Islam Miah et al., "Saline Soils of Bangladesh," 2020; see also Mongabay, "Coastal Salinity Continues to Harm Over 1 Million Hectares," 2023.

6 Ministry of Finance, "Climate Financing for Sustainable Development" (Dhaka: Government of Bangladesh, n.d.).

7 One Earth, "From Decades to Years: Rising Seas and Cyclones Amplify Bangladesh's Storm Tide Hazards in a Warming Climate,".

8 International Federation of Red Cross and Red Crescent Societies (IFRC), "Operation Update Report – Bangladesh: Cyclone Amphan" (Geneva: IFRC, 2020).

9 National River Erosion and Flood Management Project, "Project Report", 2023.

THE IMPACTS OF CLIMATE CHANGE ON FISHER PEOPLES'
HUMAN RIGHTS, LIVELIHOODS AND WAYS OF LIVING

Climate change and its impacts are threatening many of the human rights of these communities:

RIGHT TO FOOD AND NUTRITION

Fishing families are struggling to feed themselves. Fish catches are declining in both quantity and quality, and ongoing ecological degradation risks long-term damage to fish populations and communities' ability to realize their human rights now and in the future.

Fishers in both villages have reported changes in river conditions, including warmer water, altered color and odor, and more frequent fish deaths, especially during the monsoon. Fish are also increasingly avoiding traditional spawning areas. Flooding, erosion, sedimentation and pollution have further degraded critical estuarine breeding grounds. Recent studies show that over 50% of 20–25 key breeding and nursery zones in the Meghna estuary have deteriorated over the past 15 years due to ecological stress. As a result, hilsa stocks have declined by 20–25% in the last decade, threatening the sustainability of local fishing livelihoods.¹⁰ 95% of villagers also report a decline in fish quantity due to pollution and contamination, such as agricultural runoff, industrial waste and plastic pollution.¹¹

Fishers estimate their daily catch has dropped by 30–50% over the same period.¹² There has been a particularly sharp decline in juvenile hilsa (*"jitka"*) in Bhola's rivers, likely due to rising water temperatures and increased ammonia and nitrate levels from runoff.¹³¹⁴ During peak fishing seasons (April–June and September–October), hilsa catches fall by 40–50%, causing income losses of up to 60% among traditional fishing households.¹⁵ Fishing is no longer a reliable source of livelihood.

Fishing nets are also frequently damaged by waste and debris in the water. More frequent high winds and tides, such as during Cyclones Amphan, Yaas, and Mocha, lead to engine failures and anchor damage, increasing the costs of maintaining boats.¹⁶ What once took a single net to feed a family and earn a living now requires more fuel, gear, and repairs than most families can afford. Many fishers have taken out multiple loans from local lenders or informal sources at high interest rates (5–10% monthly), locking them into a cycle of debt.

10 "Assessment of Spawning and Nursery Habitats of Hilsa in the Tetulia and Meghna River Estuaries", unpublished.

11 World Bank, "Addressing Environmental Pollution Is Critical for Bangladesh's Growth and Development," accessed 2023.

12 International Labour Organization (ILO), "Field Survey", 2020.

13 Department of Fisheries, "Yearbook of Fisheries Statistics 2022–23", 34.

14 Bangladesh Fisheries Research Institute (BFRI), "Annual Report" (Dhaka: BFRI, 2021).

15 WorldFish Bangladesh, "Impact of Climate Change on Hilsa Fishery" (Dhaka: WorldFish, 2021).

16 Repair and gear replacement cost an average of BDT. 10,000–15,000 (around USD 8–12) every 3 to 4 months.

Most fishers sell their catch to local middlemen (“*aratdars*”) Illisha Ghat, the nearby fisheries market.¹⁷ They rely on these middlemen due to a lack of cold storage, transport, and direct market access. Middlemen typically pay 10–20% below market prices, especially when catches are low. For example, hilsa may sell for BDT 1,600–1,800 (USD 13–15) on the open market but fetch only BDT 800–900 (USD 6–8) at the ghat. Fishers also buy nets, fuel, and ice from the same middlemen—often at 30–50% markups. This dependence reinforces income insecurity and limits bargaining power.

Due to shrinking income, many fishers skip meals 3 to 4 days per week. In some cases, they eat only once a day, often just rice with salt or lentils, especially during fishing bans (see Box below). Without compensation or additional income sources, the bans leave families with no livelihood, deepening poverty and debt. A 2020 COAST survey revealed that during the bans, 23.3% of fisher families earned less than BDT 5,000 (USD 41) per month, and 60.8% had no income at all. 79.9% of households are forced to take high-interest loans from informal sources, which increased domestic violence rates by 51.8% and mental stress by 67.4%.¹⁸ Food insecurity also worsened: the share of families eating three meals a day dropped from 95% to just 51%. The hilsa fishing ban deprives fishers of their only source of income for nearly three months without adequate financial or food assistance.¹⁹

BOX: WHAT IS A FISHING BAN?

Fishing bans were introduced in 2003 and expanded in 2015. The government imposes a 22-day hilsa fishing ban from October to November to protect spawning mothers. Another 60-day ban targets jatka (juvenile hilsa) under the Protection and Conservation Fish Act of 1950. This ban applies to designated breeding areas in river systems. Additionally, a 65-day marine fishing ban is enforced from May 20 to July 23 for all mechanized and industrial trawlers in the Bay of Bengal to allow marine fish species to breed.

During seasonal fishing bans, fisher communities in Bhola began turning to small-scale agriculture as early as the 2000s. By 2010, approximately 23% of coastal fisher households had diversified their income by cultivating crops such as Aman paddy, mung beans, pumpkins, chilies, bottle gourd, eggplants, and potatoes. These activities were meant to buffer income losses from fishing.²⁰

17 In Bangladesh, a “fisheries ghat” refers to a landing site where fishing boats offload their catch and where fish are sorted, traded, and processed.

18 COAST Foundation, “65 Days Fishing Ban: Impact on Fishermen” (Dhaka: COAST Foundation, 2020), https://coastbd.org/wp-content/uploads/2020/07/65-Days-fishing-ban-Impact-on-fishermen_web.pdf; see also “Dignified Compensation for the Fishing Ban: Plan for Permanent Fishing-Focused Employment,” COAST Foundation, <https://coastbd.net/dignified-compensation-for-the-fishing-ban/>.

19 Ministry of Fisheries and Livestock (MoFL), “Hilsa Conservation Strategy” (Dhaka: MoFL, 2022).

20 Md. Golam Rabbani et al., “Fishermen’s Livelihood Adaptation in Response to Climate Change: An Empirical Study on South-Western Coastal Zone of Bangladesh,” “International Journal of Climate Change Strategies and Management”.

However, increasing salinity in Bhola's coastal soil, especially after tidal surges and river erosion, has reduced crop viability and arable lands. Local women report that erratic rainfalls often destroy crops before harvesting. As a result, families now rely more heavily on purchased food, driving up household expenses and reducing access to nutritious meals. Consequently, diets become less diverse, especially for children and pregnant women. Malnutrition is rising, with stunting rates already exceeding 30%.²¹

With few alternatives, many fishers and their family members are now turning to daily wage labor or migrating seasonally to towns, cities, or the mainland. They often earn meager wages – BDT 700-900 (USD 5-7) per day for labor, or BDT 1,000-1,200 (USD 9-10) for temporary work – just to survive. These shifts reflect deepening livelihood distress driven by environmental degradation and repeated fishing bans.

Extreme weather events worsen this distress. Cyclones, floods, and prolonged rains not only destroy boats, nets, and homes, but also disrupt fishing seasons and delay recovery. During critical periods such as the hilsa migration (monsoon) or winter dry season, storm surges and heavy winds keep fishers from accessing rivers or the sea. Infrastructure like jetties and embankments is frequently damaged, isolating communities for days or weeks and making daily activities riskier.

Government and civil society organizations (CSOs) have attempted to support affected communities by offering alternative livelihood training, skill-building, food aid, and limited cash-for-work programs during fishing bans. However, these efforts remain limited in scale. In Dhonia Union, only 20-25% of fisher families have access to alternative livelihoods. The majority remain trapped in a cycle of debt, reduced income, and escalating khasclimate vulnerability.

RIGHT TO TERRITORIES

Bhola, located at the confluence of the Meghna and Tetulia Rivers, is among the most severely affected regions in Bangladesh when it comes to climate-induced displacement. The district loses nearly 1,200 hectares of land annually to river erosion, submerging homesteads and forcing fishing communities to relocate again and again.²²

Over 95% of households in the area report having been displaced at least once. More than half have experienced multiple displacements in the past five years. A study found that over 30% of displaced families have been relocated more than once in the past decade, often to embankments, government-owned khas land, or informal settlements. These relocations are typically unplanned, lack legal tenure, and offer little to no access to basic services, leaving families in precarious, highly vulnerable conditions. Makeshift homes built on embankments or raised mounds are frequently washed away or threatened by further flooding and eviction, eroding land security and forcing many to live without formal recognition or protection.²³

21 IUNICEF Bangladesh, "Child Nutrition Status in Coastal Belt", 2022.

22 Center for Environmental and Geographic Information Services (CEGIS), "Erosion Mapping Report for Bhola District" (Dhaka: CEGIS, 2023).

23 Bangladesh Legal Aid and Services Trust (BLAST), "Rights of Char and River Erosion-Affected Communities" (Dhaka: BLAST, n.d.).

According to the Internal Displacement Monitoring Centre (IDMC), Bangladesh faces around 915,000 climate-related displacements annually, with Bhola among the hardest hit. By 2050, nearly one million people in the southern delta may be uprooted by sea-level rise, erosion, salinity intrusion, and cyclones, driving migration to urban slums in Dhaka and Chittagong in search of precarious work.

These conditions affect all members of displaced households in different ways. Fishers often lose access to boats, nets, and traditional fishing grounds, undermining their income and the family's food security. Fisherwomen increased domestic responsibilities, including collecting water, caring for children, and managing food scarcity, all while lacking privacy and safety in temporary shelters. Many displaced women report heightened exposure to gender-based violence in insecure living conditions. Girls and boys are also severely affected, with educational disruptions common; the dropout rate in the secondary cycle (grades 6–10) is 53.28% overall where 46.73% for boys and 56.43% for girls for students affected by climate-related disasters and displacement in Bangladesh.²⁴

The cumulative impact of repeated displacement strips communities of their right to territories and deepens their social, economic, and psychological vulnerability.

RIGHT TO WATER

Access to safe drinking water is becoming increasingly scarce. Fishers in Bhola can no longer rely on their tube wells, as the water has turned saline.²⁵ As a result, women must walk 1–2 km daily to collect potable water. This increases their physical burden and reduces the time available for income-generating activities.

RIGHT TO CULTURE AND RIGHT TO EDUCATION

The Meghna River, once a source of rich biodiversity and predictable ecological rhythms, has changed drastically. Sedimentation and pollution have made the riverbeds less fertile, while erratic tides and disrupted migration patterns have rendered traditional knowledge less effective.

“We used to read the tide by looking at the moon. Now, the water doesn't follow the same rhythm. The fish don't come as they used to,” one fisher noted, reflecting the collapse of traditional ecological predictability and inherited wisdom.²⁶

Many fishers are no longer able to complete their traditional fishing cycles. As their knowledge systems lose relevance, some have left fishing altogether. Abdus Sattar (name changed), for example, moved to Chattogram to work as a day laborer. “Fishing is no longer honorable,” he said.

²⁴ UNESCO/BANBEIS, “Asia-Pacific Regional Synthesis Report on Education and Climate-Displaced Children”, 2022.

²⁵ Bangladesh Water Development Board (BWDB), “Groundwater Salinity Monitoring Report” (Dhaka: BWDB, 2023).

²⁶ Children are dropping out of school not only because families cannot pay tuition fees but also because they are forced to support families by engaging in informal work – loading of goods or materials at local markets, working in brickyards or boat repairs to help supplement family income.

The loss of livelihood also undermines education. Families struggling financially are unable to afford tuition fees. Children are dropping out of school and turning to informal labor to support their households. This not only interrupts formal education but also weakens the intergenerational transmission of culture, skills, and place-based knowledge.²⁷

IMPACT ON WOMEN - THE UNSEEN BURDEN

Women in fishing communities play a vital yet often overlooked role in sustaining both household and fisheries livelihoods. Traditionally, they have processed, dried, and sold fish, contributing to income and food security. However, declining fish stocks and unpredictable fishing seasons have significantly reduced their engagement in these activities. With fewer fish available and the destruction and relocation of local food markets due to frequent river erosion, women fish-sellers (small in scale) have stopped processing or selling fish altogether. In places like Dhonia Union, women reported selling less or relying on male relatives to access distant markets due to safety concerns and poor transport options.

At the same time, homestead vegetable cultivation, once a critical source of both nutrition and supplemental income, has declined due to increasing soil salinity, erratic rainfall, flooding and pest infestation. While more than 60% of women previously grew vegetables like leafy greens, gourds, and chilies, many now purchase basic produce from food markets, straining household finances. In some areas, up to 70% of previously productive homestead gardens are no longer in use.

This dual loss of livelihood and subsistence options has deepened household food insecurity: Women often skip meals during fishing bans to prioritize children's needs. Their burden is further compounded by inflation, affecting food prices in particular. Despite rising costs, women's informal earnings have not remained steady, worsening their economic dependency and unpaid workload.²⁸

Yet despite these challenges, women remain central to household and community resilience. They manage savings groups, organize food relief during fishing bans, and participate in disaster preparedness efforts when included. Still, these contributions are rarely recognized in policy or program design. The climate crisis continues to exacerbate gender inequalities by increasing unpaid labor, health risks, and barriers to participation in decision-making.

²⁷ Ibid.

²⁸ Bangladesh Bureau of Statistics (BBS), "Consumer Price and Wage Statistics", 2023. Between 2019 and 2022, prices of essentials—rice (+30%), lentils (+95%), soybean oil (+84%), sugar (+152%), and eggplant (+157%)—rose significantly, while wage growth lagged behind inflation (Sources: BBS, 2023).

CLIMATE CHANGE AND ENVIRONMENTAL POLICIES, LAWS AND GOVERNMENT ACTIONS IN BANGLADESH



The following table outlines the relevance and implementation gaps of key climate and environmental policies in Balaram Shura and Gangakirti villages. While some national strategies exist, most fail to address the specific realities and rights of small-scale fishing (SSF) communities.

POLICY/GOVERNMENT ACTION	IMPLEMENTATION STATUS	FIELD REALITIES
National Adaptation Plan (NAP)	No visible implementation at the local level	While the NAP identifies climate risks in coastal regions, it does not address the specific needs of SSF communities, whose vulnerabilities require localized assessment. Apart from this, no adaptation support has been reported locally.
Bangladesh Delta Plan 2100	Unclear local applicability	The Bangladesh Delta Plan 2100 is a long-term national strategy to manage water, land, and climate risks. While it targets coastal climate resilience, it focuses heavily on infrastructure- and ecosystem. No activity so far has been recorded in Balaram Sura and Gangakirti.
Marine Fisheries Act (2020)	Not applicable	The Act covers marine small-scale fishers up to 40 meters in depth but does not extend to riverine fishers, leaving their similar vulnerabilities unrecognized in the law.
Hilsa Fishing Ban Support-Vulnerable Group Feeding (VGF) scheme	Partially implemented	Vulnerable Group Feeding (VGF) program aims at ensuring food security for vulnerable people in Bangladesh. ²⁹



²⁹ Government of Bangladesh, "Vulnerable Group Feeding (VGF) Program," Social Protection Platform, <https://socialprotection.gov.bd/vulnerable-group-feeding-vgf/>.

		In March 2025, 89,700 families in Bhola received 80kg of rice. ³⁰ However, some genuine fishers (12-15%) in the villages either received nothing or less than the allocated amount. Access is unequal and delayed.
Fisher (ID) Card Allocation (Ministry of Fisheries and Livestock)	Misdirected	In Bhola, a total of 40% of fishers (ID) cards are reported to be held by non-fishers. But as mentioned, some genuine small-scale fishers in these villages remain excluded from receiving food (rice) assistance.
Enforcement of Fishing Ban	Enforced	Fishing ban is affecting the lives of the fishers (as explained above) without the government providing livelihood support, thereby increasing their hardship.
Banning Destructive Gears (e.g., bindi jal)	Weak enforcement	Community members report ongoing illegal gear use in nearby rivers. Awareness campaigns and enforcement are ongoing but on a limited scale.

Small-scale fishing communities are increasingly marginalized by climate vulnerabilities and systemic gaps in policy and program implementation. While these fishers rely heavily on the river for their livelihoods, the responses designed to support them have often failed to address the realities. So-called solutions, e.g., displacement-based rehabilitation programs without considering accessibility, security, to unsuitable income-generating initiatives, have exacerbated the challenges faced by these fishing families.

*“Policies are made for us, but without us,”
– Local fisher*

³⁰ Department of Fisheries, Bhola Sadar, personal communication or field office data.



RESISTANCE OF FISHERS AND SOLUTIONS TO CLIMATE CHANGE

Despite the worsening impacts of climate change and limited government support, the small-scale fishing communities of Bhola continue to resist and adapt in remarkable ways.

Community-led tree plantation initiatives are underway along vulnerable riverbanks to reduce erosion, though these efforts face serious resource and technical constraints.

In addition, local organizations, cooperatives, youth clubs and informal fisher networking groups have begun forming alliances to assert their rights and strengthen collective bargaining power.

In Dhonia Union, youth-led initiatives are promoting sustainable fishing practices, advocating for fair market prices, and organizing food relief and financial support during ban periods. Women are also stepping into leadership roles. Several women-led savings groups have emerged to help families cope during fishing bans and disaster periods.

Community members are calling for participatory, community-based planning that centers their knowledge and priorities. They are demanding community-led fisheries management, the distribution of fisher ID cards to genuine small-scale fishers, and skills training for alternative income-generating activities (AIGAs). They also emphasize the need for awareness campaigns to eliminate destructive fishing gear such as bindi jal, along with adequate compensation from the government during ban periods. Specifically, they propose that each fisher household receive BDT 8,000 (USD 65) and 50 kilograms of rice. These demands reflect more than just survival needs – they are a call to protect livelihoods, uphold human rights, and achieve meaningful climate justice.



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