

ANALYZING ECONOMIC INCENTIVE-BASED APPROACH TO ILISHA FISH MANAGEMENT

**A Seminar Paper
(Individual Assignment on Module-5)**

Submitted to

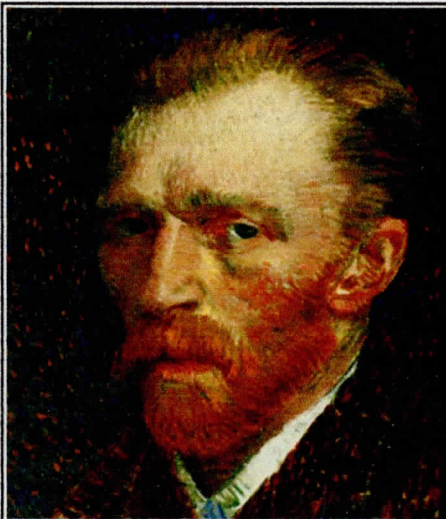
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The fishermen know that the sea is dangerous and the storm terrible, but they have never found these dangers sufficient reason for remaining ashore.

— *Vincent Van Gogh* —

List of Abbreviations

BoB	Bay of Bengal
BOBLME	Bay of Bengal Large Marine Ecosystem
DoF	Department of Fisheries
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GI	Geographical Indication
HEMAP	Hlisha Fishery Management Action Plan
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
MoDMR	Ministry of Disaster Management and Relief
MoF	Ministry of Finance
MOFL	Ministry of Fisheries and Livestock
MT	Metric-tonnes
NFMP	New Fisheries Management Policy
NGOs	Non-government organizations
PIOs	Project Implementing Officers
RFMAC	Regional Fisheries Management Advisory Committee
SSNP	Social Safety Net Program
UP	Union Parishad
GR	Gratuitous Relief
WIPO	World Intellectual Property Organization

Executive Summary

Bangladesh is an economically prosperous and stable country attaining a more than eight percent GDP growth rate. According to the GDP growth rate, the economy of the country ranks at 41st in a global economy, and in 2024 the country will become a developing country. Fishery accounts for 3.6% of the total GDP and 25.3% of agriculture GDP. The main component in the fishery is the Ililsha fish which bears the geographical and cultural identity of Bangladesh. Bangladesh stands first in producing lilsha fish in the world. Ililsha constitutes the largest single-species fishery in Bangladesh, employing half a million poor fishers directly and another 2–2.5 million people indirectly in distributions, sales, and ancillary activities such as net and boat making, ice production, processing, and export.

The Ililsha was almost extinct due to manifold indecent behavior in all stages by the consumers, producers, dealers, and policymakers. The man-made influences behind the reduction in the Ililsha population are over-fishing, use of damaging fishing gears, and pollution. On the other hand, the natural changes include river siltation, hydrological and climatic changes. Later during the breeding season prohibiting the Ililsha fishing, transport, and sale through logical and scientific principles and other relevant government schemes have made the production of Ililsha increase over the last decade. During 2017-2018 the production of Ililsha was 5.17 lakh metric tons wherein in 2003-2004 it was only 1.99 lakh metric tons. Bangladesh produces 65% of the total amount in the world Ililsha production while India produces 10-15% and Myanmar produces 8-10%.

During its entire life, Ililsha migrates both from sea to freshwater and from freshwater to sea due to its biological needs. Two peak seasons of Ililsha migration are the monsoon and the winter seasons. The monsoon migration occurs from August to November, which peaks from September to October, and the winter migration occurs in January and February. The *Jatka* is the juvenile form of the Ililsha fish which is distinct from the adult Ililsha stage. Conservation of Jatka is important as the matured fish tastes better and attracts higher prices compared to the juvenile fish. In response to the challenges in the Ililsha production, the Government of Bangladesh (GoB) through the Department of Fisheries (DoF) has established fish sanctuaries and imposed restrictions on the catching of brood fish and jatka since 2003.

Initially, raising awareness among fishermen and dissuading them from catching jatka was the goal in early 2003-04. An October to May ban on catching Jatka has been implemented since then. Later in 2007-08, the government imposed a strict ban on catching jatka as well as

mother Hilsha in five breeding zones. In 2018, a ban came into effect in early October and ran for 22 days until late October, particularly across the 7,000 sq. km. the designated area of Ilisha breeding zone. All activities including the harvesting, transporting, storing, and marketing of Ilisha are prohibited during this ban period. Statistics from the DoF show that the ban period has contributed to an annual increase of at least 0.58 lakh MT of Ilisha fish in recent years.

Every year, during the ban period, the Ministry of Disaster Management and Relief (MoDMR) implements a GR program to provide each fisherman 20 to 40 kg of rice per month for five months. According to MoDMR, a fisherman gets 20 kg of rice during the 22-days ban period in October and a total of 160 kg of rice in February-May each year. This support is given to the fishermen community under the National Social Safety Net Program (SSNP) as a form of gratuitous or humanitarian relief. Some selection criteria for the GR program require that the beneficiaries must be those who belong to functionally landless households, those with low income, those with fishing as the only source of livelihood, and those who lack productive assets. This program is aimed at encouraging fishermen to refrain from catching the mother Ilisha during the breeding season and the jatka in selected districts and Upazilas.

This study aims to analyze the GR program in meeting the needs of the fishermen during Ilisha ban and in contributing towards an increase of the annual Ilisha production. The study has applied both qualitative and quantitative research methods in analyzing the effectiveness of the GR program for the fishermen during Ilisha ban. A comprehensive survey has been conducted in Bagerhat, Barguna, Barisal, Bhola, Chandpur, Lakshmipur, and Noakhali areas among more than five hundred fishermen. The study finds that the coverage of the GR program falls short in terms of providing benefits to the registered fishermen who are affected by the ban on Ilisha fish. Insufficiency of funds has been a major gap in the implementation of any social protection program in Bangladesh. The gap in the demand and supply of GR supports has been evident in the data provided by the Ministry of Disaster Management and Relief (MoDMR). About 45 percent of the fishermen households have remained out of coverage from getting the support of GR during the ban on mother Ilisha catch. The gap is even larger in terms of supporting fishermen catching jatka as about 64 percent of the fishermen households remain out of coverage.

Institutional factors in terms of accessibility to the GR program are related to the implementation process of the GR and its associated programs. In this instance, the

registration process for the Fisherman ID card is an institutional barrier for many fishermen. During the field study, a significant number of fishermen in the coastal areas referred to the difficulty of being registered due to their long-duration presence at the sea and absence at home. What happens is the registration process for the fishermen's ID card as well as for many other government programs often coincides with the fishing seasons when many sea-going fishermen leave home for the sea. As a result, many of the sea-going fishermen often get excluded from various types of the government program. This barrier, inherent in the existing system, often creates opportunities for non-fishermen to register as fishermen and to receive supports from the government.

Mistargeting happens due to various political and social pressures. Several local political economy factors affect the implementation and distribution of the GR program, as reflected in the field study. As the local government representatives and local political leaders have an active role in the selection of beneficiaries in many areas, political dynamics at the grassroots play a dominant role in the beneficiary selection process. Limited supply triggers competition for the desired benefits of the GR program, even among the eligible people. UP representatives as well as other locally influential people sometimes are found to accommodate their relatives and supporters in the GR program.

The field-level survey also revealed that fishermen are listed on paper as they get at least ten to twenty percent less relief than the amount; For example, 40 kg rice should be given, instead, the fishermen get 35 kg of rice. Local representatives said that it was a transportation cost from the Upazila office to the union office as a reason behind it. The higher the distance from the union to the Upazila, the higher the transportation cost. Local representatives say there is no separate allocation for transportation costs thus some bear the cost by selling rice. As a result, the main beneficiaries are deprived of their deserved amount. Besides, the quality of the rice given as relief is questionable. Many complain about the poor quality of rice.

The study also highlighted that this amount of relief given to the fishermen's families only fulfills the needs of 58% of the banned months. In addition to the ban on the collection of Ilisha only the food needs are considered only but the necessary food items, especially except rice, expenditure on the treatment of the family members, expenditure on education of children which are essential to the family are ignored from relief activities instead they are out of the planning. In the above-mentioned context, the research proposes the following recommendations:

First, as a significant number of affected fishermen remain outside the coverage of the GR program, the beneficiaries have put the demand for covering all the affected fishermen under the GR program as a top recommendation.

Second, study findings clearly show the gap in the usefulness of the GR program in helping the beneficiary households in maintaining the level of subsistence. All the fishermen have requested a standardized package of support where not only rice, but other financial and non-financial benefits will be incorporated. Among the most feasible recommendations, most of the fishermen asked for a gradual increase in the supports provided under the GR program. Initially, a 50-kilogram-bag of rice along with at least 2000 Taka to cover other non-food expenditures of the households is what most of the fishermen prefer. The fishermen group also asked for a gradual increase in the amount of support to reach about 100 kilograms of rice and 5000 Taka to truly compensate for the financial loss during the Hilsha ban. This may not solely be done by MoDMR but other related ministries could come forward in this regard with an integrated package under the social safety-net program.

The third proposal is to provide transportation costs to the Union Parishad so that deprivation of beneficiaries is not created by showing the cost of transportation.

Fourth, an open meeting will encourage fishermen to apply the peer-to-peer assessment of the true fishermen groups to get enlisted in the GR program. Furthermore, a well-announced and open meeting at the UP can help to stop the inclusion of the non-fishermen population in this specialized GR program. Moreover, the presence of the officers from Upazila level will encourage the fishermen community to speak up about their concerns at the open meetings.

Fifth, the use of monofilament net can be completely banned in Bangladesh as it is used for jatka fishing. Production and marketing of the monofilament net can be banned by the legal order of the High Court. Implementation of the ban can then be ensured by the Ministry of Fisheries with assistance from respective administrative and law enforcing agencies.

Sixth, in addition to providing identity cards for all the fishermen at the river and in the sea, all fishing vessels can be brought under VMS (Vessel Monitoring System) and the AIS (Automatic Identification System) to track the movement of the fishermen and their boats. The registration of all fishermen may help government agencies to provide the VGF support to the potential beneficiaries while tracking all fishing boats under VMS may help to monitor the status of the fishing boats in the ban periods.

Seventh, besides food support, appropriate skill development training programs can be provided to the fishermen community to support them in generating alternative income generation. Local NGOs can be promoted to provide such training to the fishermen community. Local government organizations and other relevant agencies can partner with the local NGOs in providing training and other supports to the fishermen community.

Finally, it could be said the measures taken by the government to increase Hilsa production are rational and effective, and sustainable development-oriented. Banning the accumulation of mother fish and Jatka in the whole country benefiting in the long run and the economy is also flourishing. However, the life and livelihood of the fishermen who are kept under the lamp, based on the hint that they are very distressed during these forbidden times, disadvantaged, and living a bad life. That is why the relief program has been taken as social security is limitedly supplied. According to this study, at least a third of disadvantaged fishermen could not be covered by this activity, but they need government support. However, these activities are not concerned with daily life basic needs activities. Again, this fishery community has no other professional skills that they will earn in an alternative way. As a result, the need for social security for fishermen at prohibited times the activities must be realistic, consistent with the demands and needs. By doing this, the purpose of producing and preserving Ilisha the initiatives of the government would be sustainable and successful.

Chapter 1: Introduction

Background

Bangladesh is fortunate in having an appropriate geographical location and, presence of the world's largest flooded wetland and river systems and extensive coastal line which is very productive for a fishery. Fisheries play quite a significant role in food security, livelihoods, and the economy of Bangladesh. Fish is the second most important agricultural crop in the country.

Ilisha for its distinctly soft oily texture, unique mouthwatering aroma, and the superb mouthfeel is a very popular fish in South Asia. Ilisha is found in the Persian Gulf, Red Sea, Arabian Sea, Bay of Bengal, Vietnam Sea, and China Sea. Generally, five types of Ilisha species are found around the world. However, in the Bay of Bengal, only three types named as *Tenualosa ilisha*, *Ilisha kelee*, and *Ilisha toil ilisha* are available. The majority of captured Ilisha in our country is *Tenualosa ilisha*. This type is found from north Sumatra in the east to Kuwait in the west and is the basis of important fisheries in Bangladesh, India, Burma, Pakistan, and Kuwait (Al-baz and Grove, 1995; Whitehead, 1985; Blaber, 2000) [Figure 1]. The Ilisha fishery contributes 75% of the total catch (Raja, 1985) in this region that accounts for nearly half of the total marine catch.

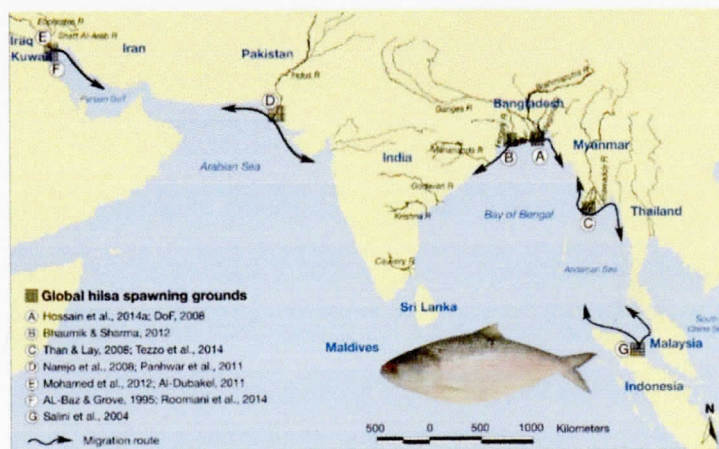


Figure 1: Spatial distribution of Ilisha shad and its main migration routes (black arrows). The main spawning grounds (dark line areas) are assumed to be in the rivers/estuaries of the Bay of Bengal and Arabian Sea [Source: wileyonlinelibrary.com]

1.1. Ilisha and the economy

The global average annual production of Ilisha is 0.72 million tons, of which Bangladesh shares approximately 50–60%. (Rahman et al., 2010; Sahoo et al., 2018). Currently, more than 12.09% of the country's fish production comes from Ilisha (MoF Report, 2017-2018) (Haldar, 2008) (Rahman et. al 2015). The sector in Bangladesh reportedly contributes 25.3 percent to the GDP of the agriculture sector while contributing about 3.6 percent to the national GDP (MoF, 2019). Ilisha is mainly exported to West Bengal, India, and some other countries in the Far East and Middle-East, European Union, America, and Australia. The minimum size of exportable Ilisha is about 1.0 kg.

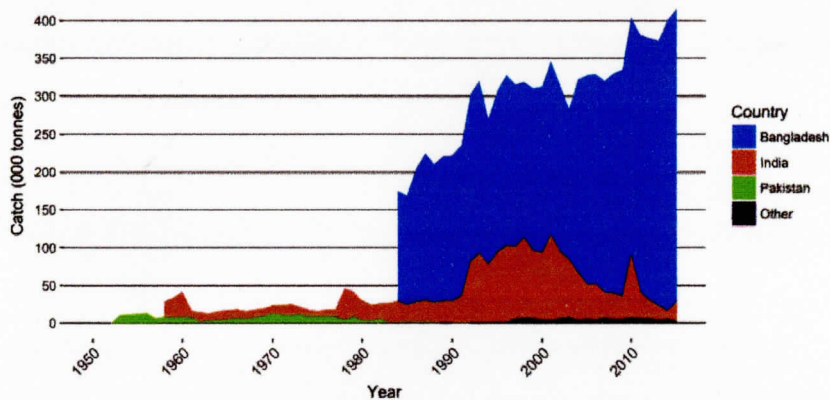


Figure 2: Global Ilisha catch during 1950 -2010 [Source: Hossain et al., 2019]

1.2. Ilisha and Bengali culture

Ilisha is not only the national fish but also, a symbol of the culture and religious identity of Bangladesh. It is a forming part of Bengali festivals. Large Ilisha fish is bought for engagements and pre-marriage ceremonies in Bengali Hindu culture. A Jamai Sashti [son-in-law visits] meal is never complete without this fish. Ilisha if possible is included in the wedding ceremony menu. Bengali communities celebrate Pohela Boishakh with a special menu of Panta-Ilish (fermented rice and fried Ilisha). Of late, the Ilisha fish has been recognized as a unique product of Bangladesh and has been given the geographical indication (GI) tag from Global World Intellectual Property Organization (WIPO).

1.3. Gratuitous Relief (GR) for Fishermen during Hilsha ban

Based on the type of their involvement in fisheries as their livelihood fishermen are categorized into three groups: professional fishermen solely depend on fishing; seasonal fishermen catch fishes during a part of the year for an additional income-earning and take fishing as a secondary livelihood; subsistence fishermen catch fish mostly for their consumption (Rahmatullah et al, 2015). Unfortunately, most of these fishermen are socio-economically vulnerable. They often live in small houses and have little cultivable land.

Therefore, the ban period brings some formidable challenges for the fishermen fishing in selected rivers as their sole livelihood option.

Every year, the Ministry of Disaster Management and Relief (MoDMR) implements a Gracious Relief [GR] program providing each fisherman 20 to 40 kg of rice per month for the Ilisha fishery ban period. A fisherman gets 20 kg of rice during the 22-days ban period in October and a total of 160 kg of rice in February-May each year. This support is given to the fishermen community under the National Social Safety Net Program (SSNP) as a form of gratuitous or humanitarian relief. This program is specifically targeted to the fishing community, especially the poor and vulnerable fishermen. Some selection criteria of beneficiaries for the GR program are functionally landless households, low-income professional fishermen, and fishermen possessing a lack of productive assets. This program is aimed to encourage fishermen to refrain from catching the mother Hilsha during the breeding season and the jatka in selected districts and Upazilas.

1.4. The signification of the research

The significance of this research is twofold: (1) the economic incentive base approach is locally financed without external support; and (2) very challenging (if not impossible) to implement such schemes in the developing world.

1.5. Problem Identification

Since the early 1900s, Ilisha has created attention to the administrators, philosophers, naturalists, and scientists. Several previous research activities are focused on the biology, food, and growth of Ilisha. Due to the degradation of Ilisha production, several regulatory approaches are practiced since 2005. Therefore, a few other types of research concentrate only on the regulatory approaches. Unfortunately, many of these researches have shortcomings.

There are several "beyond-profit" interests in fisheries. These interests are complex, part of the dynamic bio-socio-economic system (Charles 1992; Bavinck 2005). The impact on poor households' livelihood can be dramatic, negatively impacting nutrition and creating social tensions. The community will be weakening and unable to function properly if the government does not effectively intervene and facilitate cooperation in community structures. However, a lack of comprehensive study initiated on the effectiveness of economic incentive-based Ilisha conservation efforts so far.

This creates scope for a new research opportunity. As there has been no comprehensive study on the effectiveness of this specific GR program so far, there is a need to critically evaluate the program, find its weaknesses, and suggest ways to improve the program to achieve the desired objectives.

1.6. Rationale

New social practices like social innovations aim to meet social needs in a better way than the existing solutions. Gracious Relief [GR] program offers solutions that benefit both poverty reduction and environmental conservation (i.e., 'win-win' scenarios). Mainly, this GR initiative addresses the bio-social-economic system related to fishery structure. Besides, this is an innovative, sustainable, and humanistic approach. The study will address the design, implementation, and impact of the Gracious Relief (GR) program concerning its beneficiaries (poor fisherman). Therefore, the study is a significant contribution to academics as the concept is social innovation. However, a similar incentive program for fishermen is in practice in South Korea for collecting marine debris.

This study aims to critically evaluate the effectiveness of the Gracious Relief [GR] program, explore its weaknesses, and suggest ways to improve its desired objectives. Such findings will facilitate the targeting, selection, and disbursement process of these types of Social Safety Net (SSN) programs. Besides, the gaps and impacts are identified in the socio-economic development of the fishermen. The research will also bridge the knowledge gaps between a regulatory and incentive-based approach. Naturalists and scientists are informed about how social interventions helping fish conservation and management affecting household economic well-being. Administrators and philosophers will be interested in such research findings to formulate social policy formulation.

1.7. Objectives of the study

The overall study objective is to,

- to analyze economic Incentive-based Approach during Ilisha ban period as part of Ilisha production management;
- to examine the effectiveness of the Gracious Relief [GR] program to support the livelihood of the fishermen.

1.8. Limitation of the research

Sample size:

Generally, the sample size is less relevant to qualitative research. But this research is a combination of quantitative and qualitative. The present pandemic situation forced to make the sample size small. Generally, statistical tests require a larger sample size to ensure a representative of groups of people to whom results will be generalized. Therefore, besides the primary data secondary data are collected from MoDMR to find significant relationships.

Lack of reliable data

Some telephonic interviews are taken that may not be reliable. This limits the scope of analysis and can be a significant obstacle in finding a trend and a meaningful result.

Time

The program has an exclusive focus on rural areas, and as such the sample has been limited to rural areas only. Bangladesh is a small country in size, but it is not homogeneous. However, in this short period [1-12-2020 to 3-12-2020] proper observation and face-to-face interviews required for the study were very challenging. BPATC do not provide other resources [i.e money, manpower] crucial for this type of research

Hopefully, the above-mentioned limitations must be overcome in the future. These limitations can serve as an important opportunity for successors researchers. This will also help them to identify new gaps in the literature and to explore more on this issue.

CHAPTER 2

Literature review

Ilisha mainly migrates through the largest water body– the Padma-Meghna river system – for breeding and feeding purposes. The food habit and reproduction system of Ilisha is quite complex. The food habit and reproductive nature vary seasonally and with environmental conditions.

The Ilisha fishery is mainly run by small scale, low technology artisanal fishermen. Knowledge of fishing grounds, seasonality, tidal influx, and lunar periodicity is the key to the Ilisha fisheries. This traditional knowledge is transferred from one generation to the next [Mohammed and Wahab, 2013].

2.1. The movement pattern and life-cycle

Ilisha shad (*T. ilisha*) is an anadromous and fast swimming fish. It goes through multiple reproductive cycles. The fish spends its early stage in the river channels and descend to the sea to attain maturity. Finally, matured brood Ilisha goes back to sea again to complete its life cycle. Ilisha breeds almost throughout the year. Ilisha migrates upstream the freshwater rivers from the Bay of Bengal to spawn at least two to three years into their life cycle. The highest Ilisha spawning occurs during the southwest monsoon and consequent flooding of the rivers means October-November (Rahman 2005).

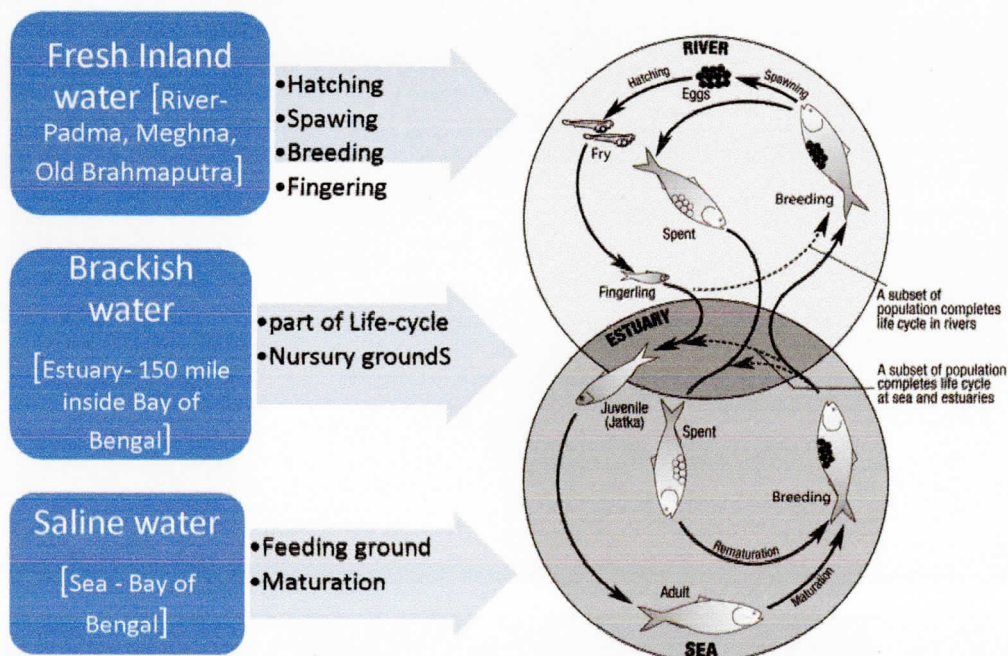


Figure 3: Movement pattern of *Tenulosa ilisha* (Ilisha) into different habitats [adopted from Mondal (2013) and Hossain et al., 2016 ; Islam et all 2016, Halder 2002]

Throughout the year Juvenile Ilisha occurs with two major pulses. For the rivers, the larger pulse was between March and May and the second pulse was between November and January. “In the marine environment, the pulses were relatively shorter, having the larger pulse during March–April and the shorter pulse during January–February” (Rahman, 2008). Environmental drivers like salinity, temperature, rainfall regulate the reproduction process. (Miah, 2015). The following diagram is adopted to give a comprehensive understanding of reproductive biology.

2.2. The decline of Ilisha Production

With the absence of clear objectives for the fisheries sector from the early 1970s to 1990s, the riverine Ilisha catches peaked in the 1960s. The Ilisha fishery was restricted to the upstream rivers, mainly the rivers Padma, Meghna, Karatoya, Rupsa, Shibsa, and Payra. Unfortunately, once plenty in Bangladesh, Ilisha has undergone serious depletion of stocks in the upstream areas. Since 1972 the depletion has continued in downstream rivers, estuaries, coastal areas, and the sea. The reasons behind this declination are primarily low water discharge from the river Ganga at the Farraka barrage and associated heavy siltation, indiscriminate exploitation of juveniles (jatka less than 23-25 cm long), disruption of their migration routes, loss of spawning, feeding, and nursery grounds and increased fishing pressure have contributed to an in both the marine and river Ilisha fishery (Mome,2007) (BOBLME 2012).

2.3. Ilisha Management Approach

2.3.1. Regulatory approach

Such a significant decline in Ilisha catches prompted the government of Bangladesh to formulate the Hlisha Fishery Management Action Plan [HFMAP]. Activities included in the plan are involving public representatives; arranging riverine rallies, raising awareness through the media; distributing leaflets and posters to protect jatka; enforcing the fish protection and conservation act, establishing Ilisha sanctuaries; the fishing ban in major spawning grounds; increase Ilisha production by protecting jatka and brood Ilisha; provide support to strengthen and enhance Ilisha sanctuary. Under the Mobile Court Ordinance 2007. There are five main nursery grounds in Bangladesh:

- A 100 km stretch of the Meghna River from Shatnol, Chandpur District to Char Alexander, Lakshmipur District
- 90 km of Shahbajpur Channel, a tributary of the Meghna River, from Madanpur/Char Ilisha to Char Pial, Bhola District

- 100 km of the Tentulia River from Bheduria, Bhola District to Char Rustom, Patuakhali District
- 40 km of the Andharmanik River route at Kalapara Upazila, Patuakhali District
- A 20 km stretch of the Padma River's lower basin from Narhira to Bhedarganj, Shariatpur District (Islam, Yassin, & Ali, 2016)

Breeding grounds in Hooghly-Bhagirathi system locate:

- Between Diamond Harbour and Godakhali
- Between Hooghly Ghat to Kalna
- Between Lalbagh to Farakka (Hossain et al., 2019)

Law enforcement agencies run several mobile courts and other operations to seize illegal jatka or Ilisha catches and file cases against offending fishers.

2.3.2. Economic Incentive-based approach

Unfortunately, most fishers (80%) do not have their boats. They borrow money from boat-owners and payback with 50% of the net return of catch sales. The declining trend of catch per unit effort of his fishing is threatening the livelihoods of about 450,000 fishers of Bangladesh. Another 2.5 million people are employed directly or indirectly through the supply chain [Mohammed and Wahab, 2013]. Different surveys revealed that more than 80% of laborers engaged in the fish processing industries are women (DoF, 2015).

Several research findings ((Ali, 2013); (Haldar 2004)) encouraged the government of Bangladesh to further strengthen its Ilisha management campaign through the provision of economic incentives. Such compensation packages are reported to be highly effective for the enforcement of regulatory measures (Barek, 2020). These are:

- compensating for lost earnings from the imposition of marine protected areas (MPAs)
- compensating for lost earnings from the imposition of closed (no-take) season
- incentivizing coastal habitat restoration activities
- rewarding for the conservation of threatened marine and coastal species
- rewarding sustainable fishing practices [Mohammed and Wahab, 2013]

2.3.2.1. Providing food (rice) to fisher households

Social protection programs are ubiquitous in both the developed and developing world. To compensate for the loss of earnings due to fishing restrictions, the government identified a total of approximately 287,000 fisher households from 20 coastal districts, covering 91 Upazilas, who were directly affected by the declaration of sanctuaries, based on 2004 census

data. Among them, 187,000 vulnerable households were selected headed by older fishermen or women and with no alternative livelihood to fishing. The local government, the relevant fishery officer, and the Upazila Nirbahi Officer (UNO) prepared the preliminary list of the beneficiaries. This list was further validated through visits to individual households by the relevant fishery officer or their representatives. The number of fisher households covered under this scheme has now reached 187,000 [Mohammed and Wahab, 2013].

Therefore, GoB has been taken an economic incentive-based approach since 2013 like providing food incentives (presently @40 kg rice/fisher for almost 7 months, covering all the ban periods). The government provided identity cards to around 224,000 Ilisha fishermen in a bid to give them three-month access to social security during the ban period. According to MoDMR, a fisherman gets 20 kg of rice during the 22-days ban period in October and 40 kg of rice per month in the February-May period taking the total amount of rice grants to 160 kg each year. Currently, this program is implemented in 29 districts across the country.

This compensation scheme is fully funded by the GoB without any external support. The DoF is planning to increase the coverage of the incentive scheme to up to 287,000 households. This will lead to a significant financial implication. An innovative approach is being explored to finance the scheme through the establishment of a National Ilisha Conservation Fund and earmarking a percentage of government earnings from Ilisha exports.

2.3.3. Alternative income-generation activities

Department of Fisheries and World-Fish have jointly been implementing a project entitled “Enhanced Coastal Fisheries in Bangladesh (ECOFISH-Bangladesh)”, a collaborative science-based adaptive co-management. This is a USAID funded five-year initiative (2014-2019). The initiative contributed to improving community empowerment focusing on women’s access to resources and technologies for livelihood diversification and community resilience improvement to endure compliance during fishing ban periods.

GoB initiated alternative income-generation activities (AIGAs) program targeted the affected households or communities to improve their livelihoods. Need-based training/refresher courses and providing microcredits to the Ilisha fishers are undertaking under the program. A total of 20,000 identified fishermen and women from Ilisha sanctuaries areas are receiving benefits, an average of 1000 fishers per Upazila. Rickshaws, goats, cows (for fattening), or sewing machines, as well as cash for small businesses, are provided from the program. Besides, training is delivered on net making, poultry, plant nurseries, kitchen gardening, and

cage culture (Alam 2012). The trainees are provided with a daily meal and about BDT 500 to attend the training.

2.4. Ecological Impact

Among the other 11 producer countries, Bangladesh is the only country where the production of this silverfish is on an increasing trend at the rate of 8% to 10% every year. According to World fish, Bangladesh is the leading country in Ilisha production with 65% of all Ilisha This is possible because of following HFMAP and enforcing the regulations in Bangladesh the production of Ilisha increased.

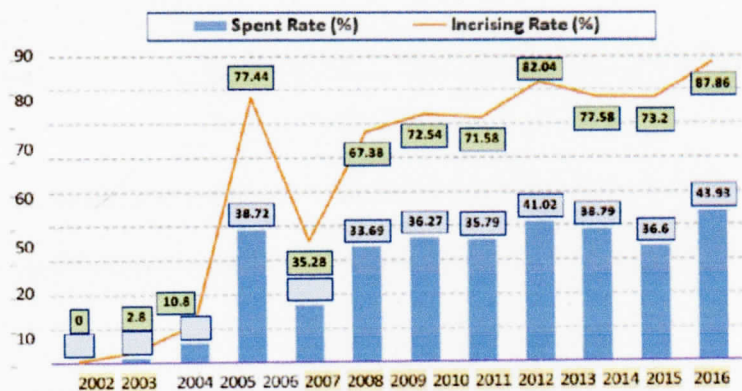


Figure 4: Spent and increasing rate (%) of Tenulosa ilisha in Bangladesh [Source: World Fish]

CHAPTER 3

Materials and Methods

This research is based on both primary and secondary data. For primary data collection, several qualitative tools such as individual interviews (II), focus group discussions (FGD) with various groups of stakeholders, key informant interviews (KII) with related study topic related persons and oral history is employed. Fieldwork is conducted during the first week of December 2020 in two fishing communities of the Barisal district.

A secondary data source is the Ministry of Disaster Management database, Books, Journals, articles from Newspaper. Besides, reviews of existing legal, policy, and institutional documents, recent literature relating to Ilisha fishery conservation and management are analyzed.

The qualitative responses have synchronized and deeper insights that are generated from the analysis. While, the quantitative data has been analyzed using statistical techniques like measures of central tendency, measures of dispersion, and correlation.

3.1. Study area

The Gracious Relief [GR] program is being implemented in 29 districts of Bangladesh. The samples have been collected from seven districts and the district are randomly selected. According to MoDMR, the beneficiaries of the program comprises 3,95,709 fishermen of 29 districts of Bangladesh.

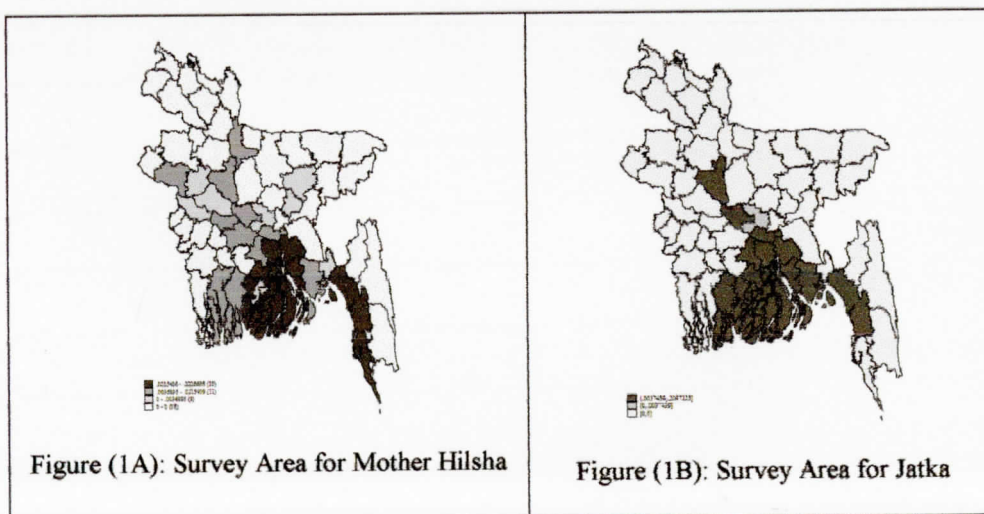


Figure 5: Survey Areas for Jatka and Mother Hilsha [Source: Authors' depiction of the survey are based on the data provided by MoDMR]

Sample households, the units of analysis, had been selected from the program areas as well as from control areas to observe the differential effect of the program between the beneficiaries

(i.e. treatment group) and the non-beneficiaries (i.e. control group) on various indicators. Villages are selected adjacent to two Ilisha sanctuaries in the rivers of Padma and Meghna. The selected communities are predominantly dependent on Ilisha sanctuaries to earn their livelihoods by various fisheries activities such as fishing and fish trade. Thirty in-depth interviews are conducted using a semi-structured questionnaire. The questionnaire asked for information regarding the present situation of the economic incentives for the fisher community as well as the effectiveness of the programs. Besides, twenty key informant interviews were conducted with study-related persons that included, major fisheries officials, and fish trader (aratdar).

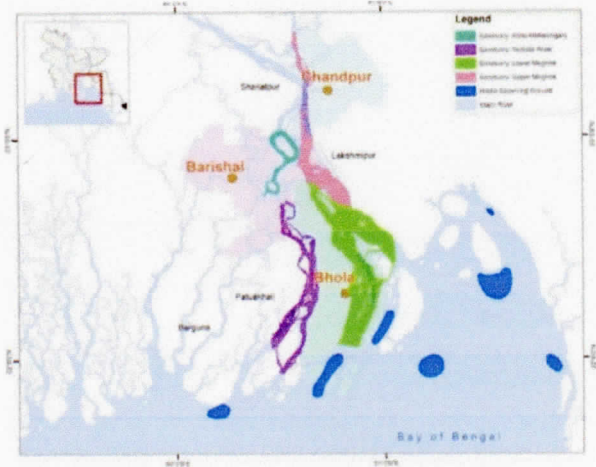


Figure 6: Map showing the study sites within the Meghna River system [Source; Adopted from Khan et al.2020]

3.2. Selection of samples: treatment group and control group

Information on the indicators of the target household and as well as the information of their counterfactual states are collected. Since it is hard to represent the beneficiary group as with and without scenario over time, it is better to have a close control group. Respondents of the treatment group have taken from the program areas while the respondents of the control group are taken from the same unions where the beneficiary households belong. The selection of the respondents of the control group has done in such a way that they have similar socio-economic characteristics as that of the program beneficiaries. For example, age-sex and livelihood structures of the control households are like those of the beneficiary households. The only difference is that the control households are be involved with the Gracious Relief [GR] program provided for the fishermen.

3.3.Sample Size Determination

Sample size determination for this study considers two critical considerations: (1) the desired width of a confidence interval and (2) the level of certainty with which inference can draw

about the population characteristics. The following formula is used to draw the sample beneficiary households.

$$ME = z \sqrt{\frac{P(1 - P)}{n}}$$

Here, *ME* is the desired margin of error while *z* represents z-score, and *P* stands for probability. Assuming *z* =1.96, *P* = 0.5, and *ME* = 0.045, we find *n* = 316. Here, the number of target beneficiaries is 316 which is the beneficiary group or the treatment group. Therefore, the number of non-beneficiary households (i.e. control group) is 158. Since some survey data may be unused due to poor quality either for sample non-response or for poor information, an additional 5 percent of households are interviewed. Therefore, the total respondents for the treatment group stood at 333, and the control group at 167. In total, 500 households had selected from the treatment group and control group.

Table 1: Locations of the study and the distribution of respondents by districts

District	Number of Fishermen	Proportion of fishermen	Sample (Treatment)	Sample (Control)
Bagerhat	5198	0.02	7	4
Barguna	34211	0.13	45	23
Barisal	43644	0.17	58	29
Bhola	88111	0.35	116	58
Chandpur	36575	0.14	49	25
Lakshmipur	37326	0.15	50	25
Noakhali	8524	0.03	12	6
Total	253589	1	333	167

Source: Author’s compilation (Data obtained from MoDMR)

3.4. The approach of Quantitative data analysis

Both with-without comparisons as well as the sophisticated difference-in-difference technique is used to analyze the data. The first method helped to see the trend of the selected outcome indicators, for example, expenditure or income of the households. On the other hand, the second method is used to get the net effect of the program if any.

This study is concerned with the average impact on the outcome variables. The most widely used measure of the average impact is the average treatment effect (ATT) on the program beneficiaries. In the context of the current program, ATT is the mean impact on various

outcomes amongst those who receive the program compared to their counterfactuals (reflexive and non-reflexive). The literature has long recognized that impact evaluation is essentially a problem of missing data, given that it is physically impossible to measure outcomes for someone in two states of nature at the same time (participating in a program and not participating). With the data which have been collected, an obvious place to start is a single difference (D) in mean outcomes between the participants and non-participants:

$$D = \bar{Y}^1 - \bar{Y}^0$$

Where Y is the outcome variable, the bar indicates an average of the outcome variable, and the superscript denotes the group (1 for the participants and 0 for the non-participants). Therefore, the above equation immediately results in a selection bias when we want to measure the ATT. D needs to correctly measure ATT only when the non-participants are exactly similar to the participants. This means that the non-participants are assumed to be the proxies for the participants for the average outcome variable if they had not participated. This is a very strong assumption and, in all respects, but it is invalid in reality. The participants and non-participants usually have some distinctive features. For example, the participants might be poorer than the non-participants and that is why in the first place they enrolled in the program. In that case, D substantially underestimates the actual ATT. One way to deal with this problem is to have panel data. Suppose we have information on both the participants and non-participants before and after the program enrollment. Then we can measure:

$$DID = (\bar{Y}_1^1 - \bar{Y}_0^1) - (\bar{Y}_1^0 - \bar{Y}_0^0)$$

Here, the subscript denotes the time, 1 for the time when the participation took place and 0 for the previous time. The term $(\bar{Y}_1^1 - \bar{Y}_0^1)$ is the before and after participation difference between the mean value of outcome for the program participants. $(\bar{Y}_1^0 - \bar{Y}_0^0)$ calculates the same value for the non-participants.

For the program participants, $D1 = (\bar{Y}_1^1 - \bar{Y}_0^1) = \text{Time Effect} + \text{Program effect}$. Time effect measures the natural change in the outcome variable that might occur from one period to another. On the other hand, $D2 = (\bar{Y}_1^0 - \bar{Y}_0^0)$ only measures the time effect for the non-participants. We are assuming this time effect is group independent, i.e., no matter whether a household is a participant or not, the impact on the outcome variable is the same. From the above two differences between the two groups, we can estimate the difference-in-difference (DID):

$$DID= D_1 - D_2 = \text{Time Effect} + \text{Program Effect} - \text{Time Effect} = \text{Program Effect}$$

How accurately DID would measure the program crucially depends on the above assumption of equal time effect for both the participants and non-participants. To quantify the spill-over effect of the program, let assume that $\bar{Y}_0^{01}$ and $\bar{Y}_1^{01}$ measure the average of the selective outcomes of the eligible non-participants in the program village in the baseline and evaluation period respectively while that $\bar{Y}_0^{02}$ and $\bar{Y}_1^{02}$ measure the average of the selective outcomes of the eligible non-participants in the control village in the baseline and evaluation period respectively.

3.5. Instruments for qualitative data

Several research methods like observation, KIIs, and FGDs [MoDMR] are used to collect qualitative data. The KIIs and FGDs have helped to reveal deeper insights on the impact of the GR program and to explore the experiences of the participants. In each of the selected districts, the KIIs have been conducted among several key informants. Pubic key informants are the District Fisheries Officers, Upazila Nirbahi Officers (UNO), and the Project Implementing Officers (PIO) of the GR program at the Upazila level. On the other hand, leaders of the fishermen groups and the local government representatives have been selected for KIIs in respective districts. Furthermore, three FGDs have been conducted among the beneficiary groups, the non-beneficiary groups who are either full-time or part-time fishermen and among the non-fishermen people in the respective groups.

Table 2: Numbers of Interviews and FGDs

Key Informant Interview (KII) [Data collected by the Researcher and MoDMR]	No.	Focus Group discussion (FGD) [Data from MoDMR]	No.
District and Upazila level administrative and fisheries officers	3	Beneficiary Fisherman Group (8-10 people)	1
Local Fisherman Leader	1	Non-beneficiary Fisherman Group (8- 10 people)	1
UP Chairman/ Member	1	Local non-fisherman People (8-10 people)	1
Total (1 district)	5	Total (1 district)	3
Total (7 district)	35	Total (7 district)	21

Chapter 4

Analyze the Gracious Relief Program during Ilisha ban period

The Ilisha ban has affected the lives and livelihoods of the fishermen in the Ilisha -rich areas. Quantitative data has collected through the survey done by MoDMR across seven districts by using a structured questionnaire for the respondents to explore the effects of the Ilisha ban on fishermen communities. The respondents had randomly selected to fulfill a pre-defined sample from both the treatment and the control groups. Finally covered a total of 511 respondents were 450 are from the treatment group (i.e. the beneficiaries) and the remaining 161 are from the control group (i.e. non-beneficiaries). This chapter analyses the quantitative data taken from the survey findings.

4. The social profile of the respondent fishermen

4.1. Literacy rate

Historically, the literacy rate among the fishermen is low which has often been reflected in literature (Ghosh et al., 2015; Mahmud et al., 2015; Rahman et al., 2012). This study also finds that only a third of the respondents from both groups can read and write (see Figure 7). About half of the respondents from both groups dropped out of school in the first year. While only about a quarter of the respondents completed primary education. Lower literacy among the fishermen implies the need for awareness campaigns and the mass announcement of the GR distribution meetings at the grassroots.

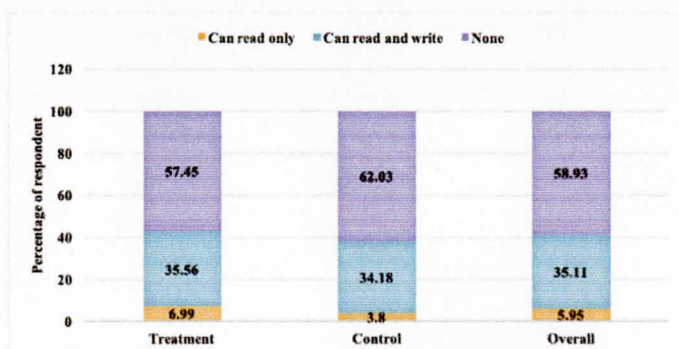


Figure 7: Literacy of respondents

4.2. Household size

The household size of the treatment group is bigger than that of the control group. The percentage of households with five or more members is higher for the treatment groups than that of the control group. However, the average number of household members for both groups stands at 5.5 which is quite similar in each group (see Table 3). The larger the household size, the bigger the exposure to economic vulnerabilities for the fishermen's

households during the Ilisha ban period. This reflects the rationalities to choose this group for the GR program support.

Table 3: Household Size of the respondents

Household Size (Number of Members)	Treatment	Control	Overall
2	0.91	2.5	1.43
3	6.38	8.13	6.95
4	19.45	25.62	21.47
5	27.36	27.5	27.4
6	24.62	15.63	21.68
7	10.03	9.38	9.82
8	6.38	5.63	6.13
Above 8	4.87	5.61	5.12
Average size	5.6	5.33	5.5

4.3. Housing facilities

Most fishermen, both the beneficiary and the non-beneficiary groups live on their land. There are also similarities between the groups in terms of the nature of the houses they live in. About 80 percent of both groups live in non-pucca houses which are either built of wood, CI sheet, bamboo, mud, and straw (see Table 4). The remaining 20 percent live in either semi-pucca (i.e. built of a brick wall and CI sheet on the roof) or pucca houses (i.e. built of concretes and steels). Around 88 percent of both the treatment and control households use mud as the sole material to build the floor of the houses. Some households use bamboo or wood in building the floors while only a few use bricks on the floor.

Table 4: Type of houses the fishermen groups

Type of House	Treatment	Control	Overall
Katcha	80.66	80.12	80.49
Semi-pucca	17.82	19.25	18.29
Pucca	1.51	0.62	1.22

4.4. Sources of drinking water

The fishermen community is lag in terms of safe drinking water access. More than half of both treatment and control groups use well and pond to fetch for drinking and domestic use. Only about one-third of both the treatment and control groups have access to the tube well

(see Table 5). Still, rainwater harvesting is not a known option for many fishermen. A limited number of households can afford water fetched by an electric motor.

Table 5: Sources of drinking water

Sources of drinking water	Treatment	Control	Overall
Piped/supply water	1.5	1.24	1.42
Tube well/Deep tube well	34.53	37.89	35.63
Well/Pond	59.46	56.52	58.5
Canal/river	0.3	0	0.2
Rain/spring water	0	1.24	0.4
Motor system	3.9	3.11	3.64
Others	0.3	0	0.2

4.5. Source of electricity

Bangladesh is on edge ensuring electricity connection for every household by 2021. According to the World Bank report, Bangladesh has achieved an electricity access rate of 88 percent by 2017. The Energy Progress Report 2019 also shows that the electricity access rate has been 81 percent in the rural areas while the urban areas are having total access to electricity (World Bank, 2019). However, the study findings show that about 60 percent and 55 percent of the treatment and control group households have access to electricity from the national power grid (see Figure 8). Fortunately, about 22 percent of each of the treatment and control groups use solar panels for electricity while about 17 percent of treatment group households and 24 percent of the control group households still rely on kerosene oil to light up their houses at night.

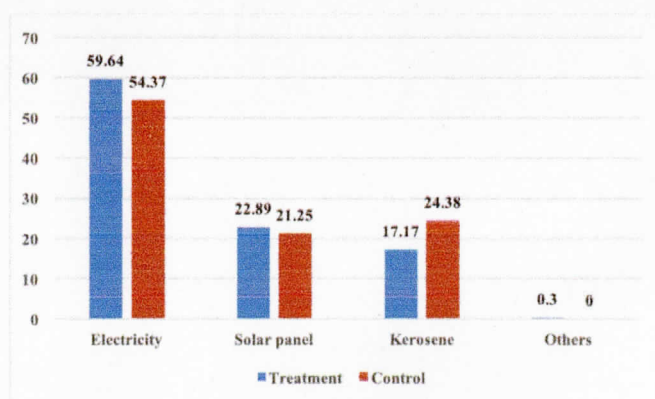


Figure 8: Source of Electricity at home

4.6. Fuel used for cooking

According to data from World Development Indicators provided by the World Bank, only about 17.7 percent of the population have access to clean fuel and technologies for cooking¹.

¹ Data generated from World Bank's online databank accessible at:

<https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.KD.ZG&country=#>

Popular materials used as fuel are wood, fire-wood, dung, and straw are for cooking at the households. The fishermen households, both from the treatment and control groups, apparently exhibit similar behavior when it comes to the use of fuel for cooking. In this instance, 76 percent of the households from each of the groups use wood and fire-wood as fuel while about 22 percent of each of the groups use dung, leaves, straw, and charcoal (see Table 6). However, access to the gas connection provided by the government is very rare though a few households from both groups use LP gas.

Table 6: Fuels used for cooking

Type of fuels	Treatment	Control	Overall
Wood/fire-wood	76.22	76.4	76.28
Dung/leave/straw/charcoal	21.95	21.74	21.88
Gas	0	0.62	0.2
LP Gas	1.83	0.62	1.43
Kerosene	0	0.62	0.2

4.7. Type of toilet facilities used by the households

Still, access to improved sanitation remains a challenge in both rural and urban areas in Bangladesh. Survey findings show that about 56 percent of the treatment group population and 43 percent of the control group population have access to sanitary latrines at the household. On the other hand, a large percentage of the control group population (i.e. 55.28 percent) still use non-sanitary latrines while the rate is 41.44 percent for the treatment group population (see Table 7). However, only about 2 percent from each group seem to use either no toilet or hanging toilet for defecation.

Table 7: Type of toilet facilities

Type of toilets	Treatment	Control	Overall
Sanitary	56.16	42.86	51.82
Non-Sanitary/Katcha Toilet	41.44	55.28	45.95
Hanging toilet	1.5	1.86	1.62
Open space/no toilet	0.9	0	0.61

4.8. Employment of the respondents

Historically, most of the river and sea-going fishermen’s sole source of livelihood is fishing. Fishermen living near the big rivers and in the coastal areas rarely look for alternative income-generating activities due to both supply-side and demand-side constraints. The absence of alternative livelihood opportunities, as well as lack of skill for other jobs, make

the fishermen hinge on fishing as a lifelong occupation. The survey shows that the treatment group has a higher percentage of household heads working as self-employed fishermen most of the time (see Figure 9) whereas the control group holds a higher number of small fishermen working for richer fishermen.

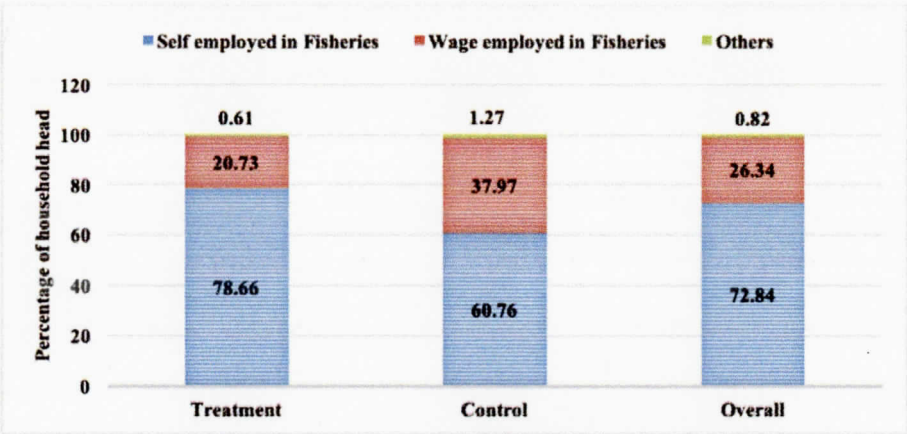


Figure 9: Major occupation of Household Headsduring fishing season

In terms of work experience, the overall years of experience in fishing are higher for the treatment group at almost 21 years (see Table 8) whereas the average years of experience in fishing is 18 years for the control group. The higher average in terms of fishing experience among the treatment group implies that the beneficiary fishermen groups constitute the adults whereas there can be minors among the non-beneficiary groups. In this instance, there are very young fishermen in the control group who are aged below 18 years and lack a national voter card to qualify for the GR support during the Ilisha ban.

Table 8: Years of experience in fishing

Categories	Average (Years)
Treatment	21.02913
Control	17.94017
Overall	19.91022

The major earning source of the respondent's shifts from fishing to other non-fishing activities during the Ilisha ban period. During the ban period for Jatka which is comparatively longer in duration, a very small percentage of respondents from both treatment and control groups reported that they still resort to fishing in local canals and other sources for fish as this is the only skill they can utilize for survival. Among the non-fishing jobs, about a quarter of the respondents switch to the agriculture sector to work as day laborers. However, the biggest percentage of respondents (i.e. 42 percent) from both treatment and control groups reported that they remain unemployed during the Ilisha ban period (see Table 9).

Table 9: Employment during Jatka ban

Type of Employment	Percentage of Respondents		
	Treatment	Control	Overall
Self-employed in Fisheries	1.89	1.29	1.69
Employed in Fish catching	9.78	10.32	9.96
Employed as a laborer in Agriculture	28.08	26.45	27.54
Employed in industry	1.58	3.87	2.33
Employed in the service sector	1.26	0	0.85
Self-employed in agriculture	5.05	3.23	4.45
Self-employed in business	4.1	5.81	4.66
Self-employed in service (driving rickshaw/van)	5.99	4.52	5.51
Unemployed	42.28	42.61	42.38

For 22 days ban on catching mother Ilisha, a large percentage of the fishermen tend to remain unemployed. While nearly 42 percent of the respondents from both groups reported being unemployed during the jatka ban period. But the rate shoots higher for the treatment group at 58 percent while the control group also reportedly has about 53 percent (see Table 10). This difference in employment pattern between the periods and between the groups is mostly due to the shorter length of the ban period and the sole dependence of the treatment group on fishing as the livelihood. Moreover, a large percentage of respondents from the control group are seen to be driving rickshaws and van during the mother Hilsha ban period.

Table 10: Employment during mother Hilsha ban

Type of employment	Percentage of respondents		
	Treatment	Control	Overall
Self-employed in Fisheries	2.44	0	1.33
Employed in Fish catching	9.76	8.82	9.33
Employed as a laborer in Agriculture	14.63	2.94	9.33
Employed in industry	4.88	0	2.67
Employed in the service sector	2.44	0	1.33
Self-employed in business	2.44	0	1.33

Self-employed in service (driving rickshaw/van)	4.88	35.29	18.67
Unemployed	58.54	52.94	56

4.9. Income, savings, and expenditure of the respondents

Income, savings, and expenditure of the respondents are some important indicators to compare the effect of Ilisha ban on the treatment and control groups. Findings from the survey show that the income of both the treatment and control group falls by about 50 percent during the ban period (see Table 11). In the fishing season, the respondents of the treatment group earn significantly more than that of the control group. However, the income gap between the groups closes down during the Ilisha ban when both groups earn less.

As the income falls sharply during the ban period, none of the groups of respondents can save any money during the period. Even though there are significant income differences between the treatment and control groups, the average monthly savings remain almost similar for both groups. This can partly be explained by the fact the larger household size of the treatment group and the larger share of food expenditure (see Table 11). While the food expenditure is greater for the households of the treatment group, partly due to larger household size, the non-food expenditure is almost similar for both the groups.

Table 11: Monthly income, savings, and expenditure of the respondents

Indicators (Monthly average)	Treatment (in Taka)	Control (in Taka)
Income during the fishing season	12808.94	9125.66
Income during the ban period	5813.20	5170.43
Savings during the normal time	4196	4014
Savings during Ilisha Ban	0	0
Food expenditure	8910	8304
Non-food expenditure	3616	3452

4.10. Assets of the respondents' households

Assets of the fishermen households include land, livestock, and other accessories like the boat, furniture, and mobile phone, etc. Usually, most of the small fishermen belong to lower-income groups and have a small size of land. In terms of land ownership, survey data shows

that the respondents of the treatment group are in a slightly better position as about 96 percent of the households own the homestead land. Moreover, the average size and the market value of the homestead land owned by the households of the treatment group is slightly better than that of the households of a control group. However, the difference between the treatment group and the control group becomes visible when the average size and the market value of the agricultural land are compared. In this instance, the households of the treatment group remain far ahead of their counterparts of the control group in terms of the average size and the market value of the agricultural land. Though only about 11 percent and 14 percent of the households respectively from the treatment and control group own arable land beside the homestead land, there are apparent inequalities within the treatment group in terms of ownership of agricultural land. While 86 percent of the households from the treatment group own no arable land, the remaining 14 percent own an average of 30 decimals of land (see Table 12). This inequality within the treatment group shows that there is a small percentage of households who are not in utmost need of the GR support for fishermen. It also indicates that there are fishermen households currently in the control group who own a small size of homestead land-only and in need of GR support.

Table 12: Ownership, size, and market value of land owned by the respondents

Indicators	Control	Treatment
Access to homestead land (% of respondents)	90.5	95.8
Access to agricultural land (% of respondents)	11.1	13.8
Average homestead land (in decimal)	5.9	7.0
Average agricultural land (in decimal)	13.3	29.6
The average market value of homestead land (in Taka)	104291	157012
The average market value of agricultural land (in Taka)	134231	235939

Some households often own livestock to meet the nutritional need of the household members and to supplement the household income. Findings from the survey reveal that about 62 percent and 43 percent of the households of the treatment and control group own at least some breed of livestock (see Figure 9). On average, the households mostly own up to 4 cows or buffalos and up to 5 goats or sheep. The market value of the livestock owned by most of the households stands below 5000 Taka. However, the average market value of the livestock owned by the households of the treatment group and control group is quite close as it stands at 11289.88 Taka and 11263.76 Taka respectively. Other than the livestock assets, most of the fishermen households often own a small boat and fishing nets of their own.

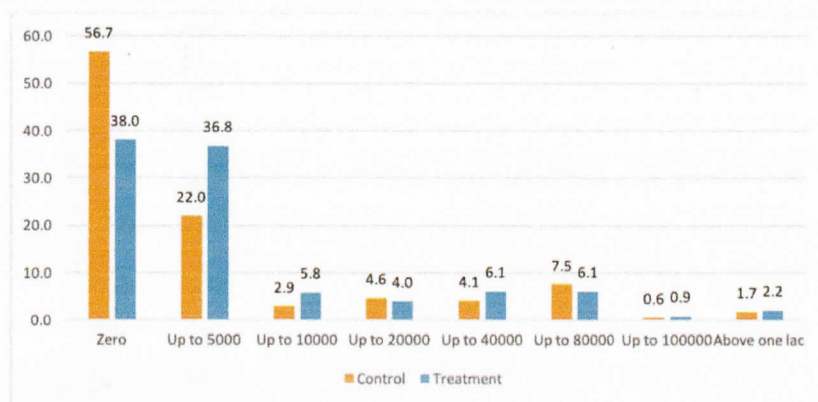


Figure 9: Market value of the livestock owned by the respondents

4.11. Economic and financial shocks

Low-income groups are often vulnerable to economic and financial shocks. Findings from the survey show that about 73 percent and 75 percent of the households respectively from the treatment and control group faced economic and financial shock during the last three years. The unusually high price of the essential commodities has been the most significant shock for the fishermen community as they belong to the low-income groups. This is exacerbated during the ban period increase their existing struggle for livelihood and survival. Again, a high level of crop pests and disease has affected the fishermen households as most of them tend to grow vegetables and some other crops in their arable lands as well as in the homesteads. In terms of annual loss due to the shocks, an amount of over 100,000 Taka has been reported by about 32 percent and 39 percent of the households respectively from the treatment and control group. Loss of income, assets, and other resources worth less than 60,000 Taka have been reported by 54 percent and 48 percent of the households respectively from the treatment and control group.

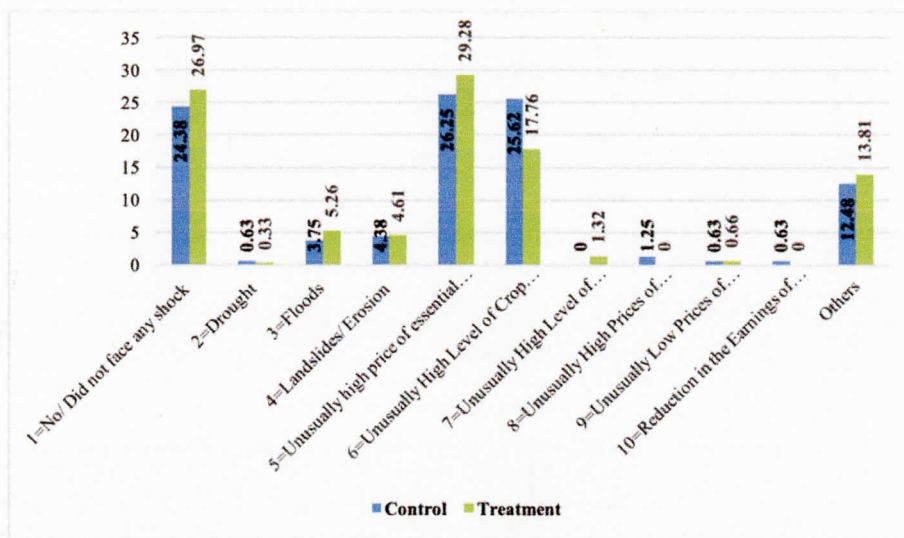


Figure 10: Reasons for economic and financial shocks

Coping strategies to face and recover from the economic and financial shocks vary from household to household. While migration of the earning member of the household and unconditional support from the friends and relatives are sources of finance for a few, the majority of households from both the treatment and control group resort to taking credits to face the crisis. Data from the survey shows that 68 percent of households from each of the treatment and control groups take loans from several sources to face the shocks.

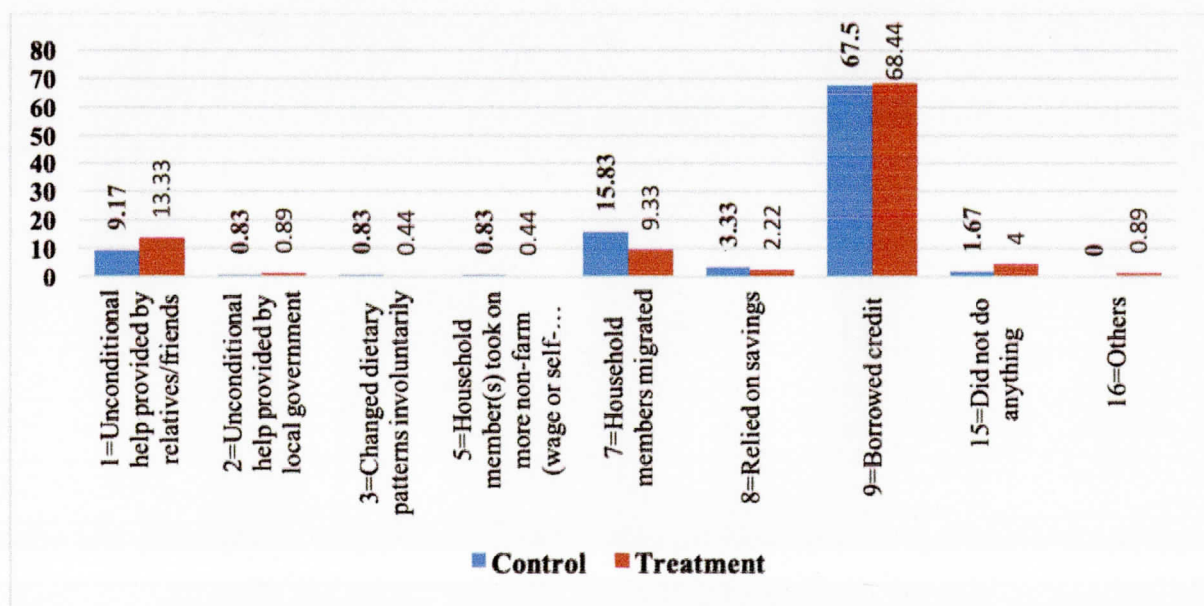


Figure 11: Means to face the economic and financial shocks

4.12. Sources and utilization of credits

As the households fall into an income deficit during the Ililsha ban period, borrowing is a major way to compensate for the losses and to maintain the level of subsistence. Survey data shows that about 43 percent of respondents from the treatment group takes loans during the Ililsha ban period. The percentage of households taking loans during the ban period is even higher for the control group as it stands at about 50 percent (see Figure 11). The larger number of households from the control group taking loans shows their vulnerability during the Ililsha ban period. Hence, this data supports the findings that a large number of eligible fishermen are still outside of the coverage of the GR program.

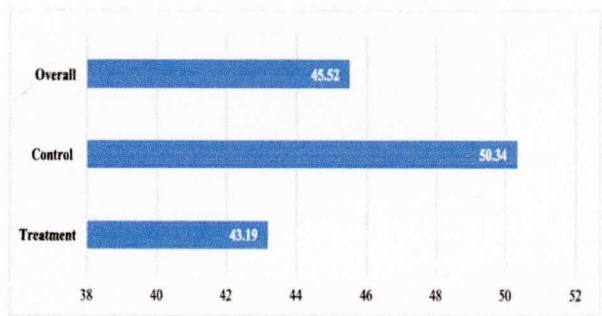


Figure 12: Households borrowing during Ililsha Ban (in percentage)

The fishermen community mostly rely on non-government organizations (NGOs) and the local cooperative organizations for credits. Respectively about 75 percent and 64 percent of the treatment and control group households depend on the NGOs for credits while about 13 percent and 20 percent of the treatment and control groups respectively take loans from the local cooperatives. This data shows the higher rate of presence of and accessibility to the local NGOs and cooperatives across the rural areas of Bangladesh. In this instance, the NGOs and the local cooperative organizations offer an alternative to both the formal banking sector and the highly exploitative local money lending by the *mohajons*². Friends and relatives remain a credible source of borrowing money during the crisis periods, though the rise of non-banking financial institutions undermines inter-personal money lending in recent years.

Table 13: Source of household borrowing

Source of credit	Treatment	Control	Overall
Friends and relatives	5.33	9.15	6.56
NGOs	75.67	64.08	71.95
Banks	3.33	3.52	3.39

² The local money lender who charge an exorbitant rate of interest on the credits is called *mohajon*.

Local Mohajon/ money lender	2	3.52	2.49
Local cooperative/ samiti	13.33	19.72	15.38
Other	0.33	0	0.23

The reason behind fishermen resorting to non-banking financial institutions for credits is the lack of access to formal banks and financial institutions which rests on strict rules and regulations. According to data from the World Bank, about 50 percent of the population of Bangladesh aged 15 years and more have an account with the financial institutions or with a mobile-money-service provider³. The percentage of the population having access to formal financial channels has improved in this decade with the introduction of the mobile-money-service-provider. However, people in rural areas still have lower participation in the formal banking system. Findings from the survey show that only 11.82 percent and 9.55 percent of respondents respectively from the treatment and control group have their bank accounts. Moreover, only 7.43 percent and 5.68 percent of the respondents respectively from the treatment and control group reported about the other household members having bank accounts.

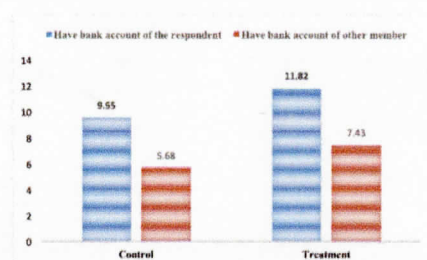


Figure 13: Percentage of respondents having a bank account

Fishermen tend to spend most of the credit amount in meeting the household needs during the Ililsha ban period. About 62 percent and 61 percent of the treatment group and control group households use the credits in meeting daily food and non-food needs of the household. Other significant purposes for using credits include the payment of earlier debts with the new one and investment in new income-generating activities.

Table 14: Utilization of credits

Utilization of credits	Treatment	Control	Overall
Investment	10.16	10.42	10.24
Meeting household's daily needs	62.62	61.11	62.14
Marriage	0.98	1.39	1.11
Construction of house	3.28	2.78	3.12

³ Data generated from World Bank's online databank accessible at:

https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.KD.ZG&country=#selectedDimension_WDI_Time

Paying another debt	9.51	12.5	10.47
Treatment	1.97	3.47	2.45
Others	11.48	8.33	10.47

4.13. Access to GR and other social security programs

A small group of beneficiaries has been receiving the GR support as compensation to the Hilsha ban program for more than 15 years. However, about half of the beneficiaries have been included for the last five years (see Figure13). The GR program for fishermen maintains that only one member of a household can get the benefit. However, the survey findings suggest that 90 percent of the households have a single recipient of the GR program while only 10 percent of the households have more than one recipient. The qualitative findings from the study refer to the local political factors in the selection of beneficiaries for the GR program which may potentially account for this anomaly.

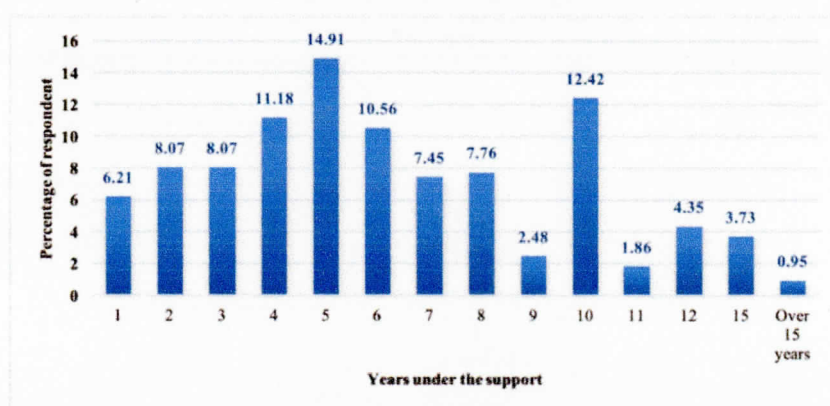


Figure14: Years of receiving GR support

Currently, 130 social safety net schemes under both development and non-development budget are practiced. Being part of lower-income groups, the fishermen are covered by these schemes. The coverage of SSNPs has increased to about 763 million beneficiaries throughout the country (Khondker, 2018). However, access to SSNPs by the beneficiary households are often mutually exclusive as households having access to one of the SSNPs may be deprived of having access to another. Data from the survey shows that only about 5 percent of the treatment group households have access to other SSNPs while about 37 percent of the households from the control group have the access to other SSNPs. About 72 percent of the households from the treatment group have access to one more SSNP and the other 26 percent with access to two more SSNP. This small group of beneficiaries of the GR program for fishermen having access to one or two more SSNPs is mostly the close allies or relatives of the local government representatives and other influential people, as alleged by the non-

beneficiary groups during the FGDs. Besides the GR program, the households of the treatment group with access to other SSNPs receives an average of 2419 Taka.

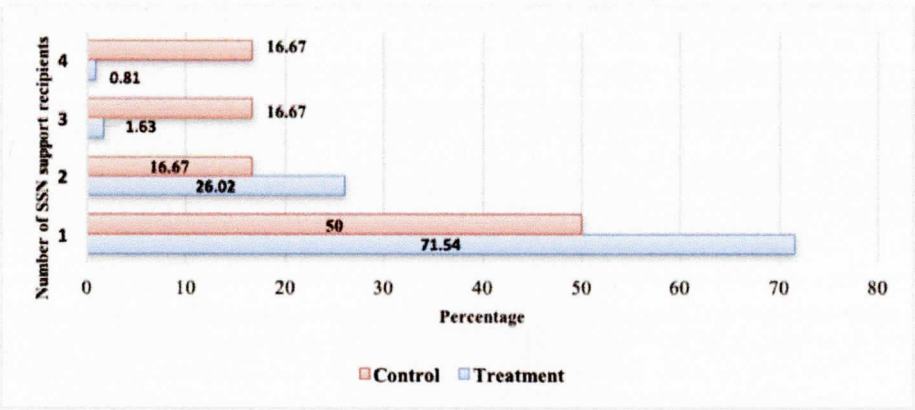


Figure 15: Household members’ access to other SSNPs

Chapter 5

Effectiveness of the GR program for fishermen

Ensuring the effectiveness of any social safety net programs often remains challenging as the access to the programs in the developing countries is problematic (Mkandawire, 2005; Ortiz, 2007). A supply-side constraint for the social safety net programs is the high demand from the deserving groups. While, demand-side constraints like nepotism, bribery, and cronyism in selecting beneficiaries affect people’s access to these programs (Barakat et al., 2013; Kamal and Saha, 2014). This study has analyzed both the effectiveness and the access issues relating to the impact of the GR program for the fishermen. The effectiveness of the program has been evaluated by surveying and interviewing the beneficiary groups. Qualitative data on the effectiveness has been assessed in terms of availability, accessibility, quality, and usefulness of the program.

As part of the study, qualitative data through KIIs and FGDs in selected areas have been collected and consolidated from the secondary data source Ministry of Disaster Management and Relief (MoDMR). The data is collected from MoDMR from 21 FGD and 25 KIIs have been conducted in seven districts of the country. Besides the researcher herself collected primary data from 10 KII. A comprehensive understanding of the effectiveness of the GR program has been ensured by using both the quantitative and qualitative data to complement one another.

5.1. Availability of the program

The GR program for the fishermen is implemented by MoDMR to provide each fisherman 20 to 40 kg of rice per month for five months. According to MoDMR, a fisherman gets 20 kg of rice during the 22-days ban period in October and 40 kg of rice per month in the February-May period taking the total amount of rice grants to 160kg each year. As of 2020, this program is being implemented in 29 districts across the country where juvenile and mother Hilsha fishes are caught. Although the program has a full coverage of the geographical locations, it cannot cover every fisherman. Lack of sufficient allocation from MoDMR is the major reason behind the unavailability of the GR support for every eligible fisher.

It is widely accepted that the insufficiency of funds is a major gap in the implementation of any social protection program in Bangladesh (Barakat et al., 2013; Kamal and Saha, 2014). This insufficiency of funds leads to variable beneficiary numbers. The percentage of fishers not getting the support varies from districts to districts and Upazila to Upazila. Secondary data from the interviews and group discussions reveal that the percentage of eligible fishermen not benefitting from the GR program varies from 20 to as high as 80 percent in various Upazilas and districts. In 2018-19, about 45 percent of the fishermen households were out of coverage during the ban on the mother Hilsha catch (see Table 15). This demand and supply gap is even larger in terms of supporting fishermen catching jatka as about 64 percent of eligible households remain out of coverage (see Table 16). 8 districts and 34 Upazilas do not receive any allocation of support during the ban on the mother Hilsha catch. While a total of 19 districts and 74 Upazilas do not receive any allocation during the ban on jatka catch.

Moreover, there are inter-regional differences in terms of the allocation of GR program among fishermen. Such as Dhaka district have seen a perfect supply against the demand. However, most of the districts get less than the quantity as required. While, a long list of districts from the Dhaka, Rajshahi, Khulna, and Rangpur divisions are still out of coverage during the ban on jatka catch [Annex 1 and Annex 2]. This implies that the government data on the demand and supply of the GR support covers the registered fishermen only while there are thousands of eligible but unregistered fishermen. The list of registered fishermen excludes the young fishermen aged below 18 years and the adult fishermen who, for some reason, may have missed the registration process. For instance, according to the Fisheries office of Noakhali district and the local fishermen association, there are about 35000 fishermen in Noakhali of which around 32000 are registered.

5.2. Accessibility to the program

Accessibility to the program is also restrained by the insufficiency of funds provided by the MoDMR. However, field data highlights several institutional, political economy, and behavioral factors that affect the accessibility to the program for fishermen. Among the institutional factors, the process of fisher's registration and issue ID is most important. local political economy dominants nepotism, cronyism, and bribery. The behavioral factors include the exercise of malpractices like creating non-eligible beneficiaries.

Findings from the survey indicated that around 87 percent of the respondent of the control group are aware of the GR program. Around 94 percent of the beneficiaries are aware of the initiative. The fishermen of the control group mostly came to know about the GR program from the fellow fishermen and have tried to reach the local government representatives to inform their eligibility and place their demand. However, the efforts by the respondents of the control group went in vein mostly due to many political economy factors that play a crucial role in the selection of beneficiaries in the respective communities.

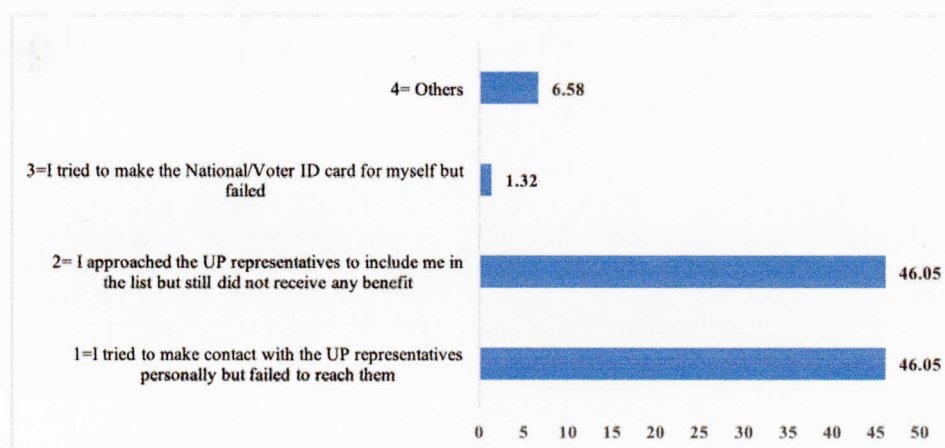


Figure 16: Type of efforts made by the control group respondents

During the survey, the non-beneficiary group (i.e. control group) were asked to identify the reasons why they have not been enlisted in the beneficiary list for the GR program. Though most of the respondents are full-time and some are part-time fishermen, there are various reasons that the respondents referred to as part of their exclusion from the GR program so far. Only a few respondents have replied that not being a full-time fisherman is the reason for not getting the GR support while about 30 percent of the respondents accused the local selection committee of practicing nepotism in the selection process. This crucial finding has also been resonated in the interviews and group discussions with both the beneficiary and the non-

beneficiary fishermen groups. While a little more than a quarter of respondents blamed the insufficiency of funds and lower supply issue, about half of the respondents refer to the local political economy factors as the barriers to access to the GR program (see Table 17).

Table 17: What are the reasons for you to not getting access to the benefits of GR program

Reasons	Percentage of respondents
Not a full-time fisherman	2.41
Insufficiency of funds	19.28
Larger demand compared to supply	9.64
I am under-aged / I do not have the National ID Card	6.02
I have been unaware of the social protection benefits	3.01
Nepotism of the selection committee while making the list for benefits	30.72
Favoring known people by the political leaders while making the list	13.86
UP representatives and other political leaders ask for bribes	1.81
Others	13.25

5.3. Institutional factors

Institutional factors in terms of accessibility to the GR program are related to the implementation process of the GR and its associated programs. In this instance, the registration process for the Fisherman ID card is an institutional barrier for many fishermen. During the field study, a significant number of fishermen in the coastal areas referred to the difficulty of being registered due to their long-duration presence at the sea and absence at home. What happens is the registration process for the fishermen's ID card as well as for many other government programs often coincides with the fishing seasons when many sea-going fishermen leave home for the sea. As a result, many of the sea-going fishermen often get excluded from various types of a government program. This barrier, inherent in the

existing system, often creates opportunities for non-fishermen to register as fishermen and to receive supports from the government.

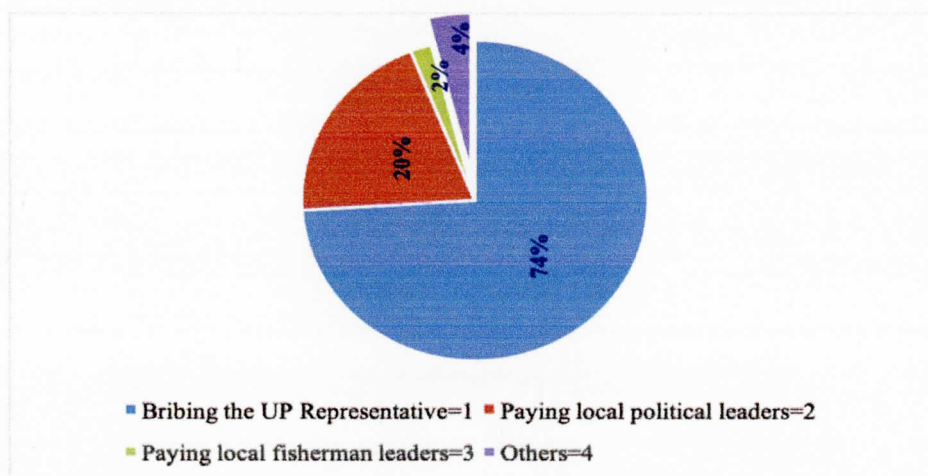
5.4. Local political economy factors

There exists several local political economy factors at the local level which affect the implementation and distribution of the GR program, as reflected in the field study. The selection of beneficiaries for the GR program, to a large extent, is affected by the local political economy factors. As the local government representatives and local political leaders have an active role in the selection of beneficiaries in many areas, political dynamics at the grassroots play a dominant role in the beneficiary selection process. This selection problem is also connected with the insufficiency problem. Limited supply triggers competition for the desired benefits of the GR program, even among the eligible people, which further help the emergence of various extra-legal approaches in beneficiary selection.

Being a loyal voter and supporter of the local member of the Union Parishad (UP) is an important criterion to get the preference in the beneficiary list for the GR program, as the local people from the study areas suggest. Apart from the eligible fishermen, some candidates are seasonal fishermen and some are non-fishermen people like the farmers, day laborers, and the rickshaw pullers who often lobby the local administration representatives to get the GR support. Competitions from both eligible and non-eligible groups make the selection process more complicated. As a result, a significant number of non-eligible people reportedly receive the benefits of the GR program due to the political economy factors at the grass-roots. Owing to various political and social pressures, UP representatives as well as other locally influential people sometimes are found to accommodate their relatives and supporters in the GR program.

Complaints of bribery in enlisting the non-fishermen people in the beneficiary list of the GR program has also been reported by the fishermen group in several study areas. Survey data shows that about 22 percent of the respondents told that they had to pay around 400 Taka on average, around 11 percent worth of the GR support, to receive the GR support. Bribing the local government representative and the locally influential people have been the apparent prerequisite to receive GR support for a significant number of beneficiaries. Therefore, it has been found that while a large number of eligible fishermen remain outside of the GR program due to insufficient funds, some ineligible people are receiving the GR support by utilizing their connection with the locally influential people.

Figure 16: Reasons to pay money to get the GR support



5.5. Quality of the program

The Field study reveals that most of the beneficiaries receive about 10 to 20 percent less rice than is documented. Many fishermen reported that they receive about 35 kilograms of rice while the actual amount should be 40 kilograms. This variation is explained by the local representatives as the 'transportation cost' to carry the total allotment of rice from the Upazila headquarters to the local UP office. The Project Implementing Officers (PIOs) and the local Fisheries officer also acknowledged the fact that the UP Chairmen are not provided with the transportation cost to carry the rice to the UP offices.

The farther the UP office from the Upazila headquarter, the more the financial cost for transportation is. As there is no reimbursement of the transportation costs to carry the rice supplied under this GR program, local UP Chairmen often compensate it by selling a few packs of rice from the supplied amount. Moreover, the transportation cost also varies depending on the means of transportation required to reach the local UP offices. For example, the cost of hiring an auto-rickshaw or a small truck to reach straight to the UP office is less than the cost of hiring two different vehicles like an engine boat as well as a van to carry the rice. As a result, the transportation cost creates a point of discretion for the local Chairmen to reimburse the cost from the rice supplied to the UP.

Besides the quantity issue, the quality of the rice provided under the GR scheme for fishermen has been very much questionable. Beneficiaries of the program have asserted that the rice provided under the GR program is of very poor quality. Some of the beneficiaries even commented that the rice can only be consumed by domestic animals and not by humans. Some of the households reported that they have used the rice of the GR program to feed their

domestic birds. Moreover, a loss of about half of rice due to the poor quality of rice has been reported by a few fishermen.

5.6. The usefulness of the GR program

An open question is an extent to which the effectiveness of GR program through food transfers compares with that of in-kind transfers – in particular, cash transfers. This GR program is specially designed to compensate for the losses of the affected fishermen group due to Ilisha ban. However, total compensation of income loss during the Ilisha ban cannot be fully implemented at once. The main philosophy of the program is to support the affected households to maintain a level of subsistence during the ban period. But meeting the subsistence for a household extended to the costs for nutritious food, education, health, and hygiene of the households. In this regard, the program has been found to fall short in supporting the affected households to maintain a level of subsistence during the Ilisha ban period.

The effectiveness of the program has been seriously questioned by the beneficiary groups as well as by the non-beneficiary groups due to its failure to account for the cost of subsistence of the targeted households. The beneficiary groups reveal that the GR program meets only 40 to 80 percent of the monthly rice demand for a household as a staple food. The survey data also supports this finding an average of 58 percent of the monthly need is met by the GR program. This identifies the gap in the effectiveness of the GR program. However, the amount of providing rice is insufficient to meet the monthly need, the large gap remains for providing other nutritious cereals and foods. The beneficiary groups, opinion for the supporting foods with rice cost at least as much as what rice does. While, the program

“The program might only be useful if we could survive by eating rice only. But, we cannot eat only rice for survival and rather we need other basic foods like vegetables, pulses, and spices, even if I discount for fish and meats”.

Majed
Age 43; Patuakhali

support covers only an average of 58 percent of the monthly need for rice, an increase of 142 percent of the current amount of rice could compensate for the demand for nutritious food. Besides, the cost for education and health services of the household members is completely outside of the existing GR support system. As a result, the beneficiary households are often bound to taking loans from local lenders, cooperatives, even relatives to cover the costs of subsistence during the Hilsha ban period.

Around 45 percent of the respondent had to spend money for transaction purposes. The average transaction cost stands at 284 Taka, around 5 percent worth of the GR support, which is mostly spent as the transport cost to reach the UP and to bring the rice home (see Figure 17). A small group of respondents referred to a small amount of withdrawal cost need to pay to the supporting staffs of the UP while receiving the rice.

The political economy is an area of concern. Corruption of the locally influential people, getting less amount of rice from the UP, getting low-quality rice under the program, and paying the transaction costs are some of the key barriers in making an effective GR program. As the support under the GR program is already insufficient to compensate for the income loss, extra costs like a bribe and other transaction costs make the real value of the GR program less. Sometimes issues like getting less amount of rice from UP to compensate for the transportation cost from Upazila headquarter to UP, and other local political economy factors seriously undermine the true effectiveness of the program.

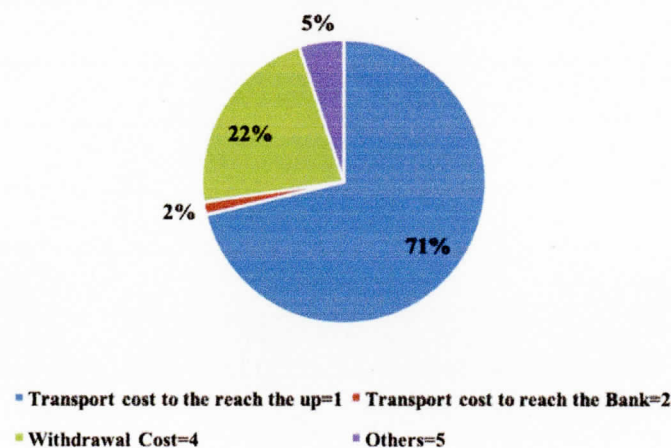


Figure 17: Reasons for having transaction cost.

Chapter 6

Recommendations by the Stakeholders

Small-scale fishers are adversely affected by weather and climatic conditions particularly during the monsoon season when extreme weather often prevents them from going to sea for fishing. Public servants formulate and implement policies of social protection programs, like the GR effectiveness of any social protection program prerequisite recommendations from the relevant stakeholders, specifically from the beneficiaries. Analyzing the existing GR program this study has consulted with all the relevant groups of stakeholders. Beneficiary fishermen groups, non-beneficiary fishermen groups, non-fishermen villagers, local government representatives, PIOs, local fisheries officers, and other representatives from government bodies have interviewed to lay down a list of policy recommendations to make the program more effective.

Increasing the number of beneficiaries

Still, a significant number of affected fishermen remain outside the coverage of the GR program. Hence, a thrust came out from the research for covering all the affected fishermen under the program. All other stakeholders like the fishermen groups, the UP representatives, PIOs, fisheries officers, and all other relevant stakeholders also in favor of increase the coverage.

Widening the basket

Throughout the survey, all the fishermen have asked for a standardized package of support where not only rice but other financial and non-financial benefits. A clear majority of the fishermen asked for a gradual increase in providing supports. Initially, they ask for 50-kilogram-bag of rice along with at least 2000 Taka cash to cover other non-food expenditures of the households as per requirement. The fishermen group also asked for a gradual increase in the amount of support up to 100 kilograms of rice and 5000 Taka to truly compensate for the financial loss during the ban period. This may not be a composite social safety net designed MoDMR and other related ministries.

Compensating the UP offices for transportation of rice

Respondents highlighted no reimbursement or compensation of the transportation costs for the UP office to carry the rice supplied under the GR program from the Upazila headquarter to the local UP office. This leads the UP Chairmen to reimburse the cost by selling a few

bags of rice from the supplied amount causing further reduction in the amount of rice allotted for each beneficiary. The UP representatives, as well as local implementing officers at the Upazila level, suggested paying the transportation cost either in cash or kind by the concerned ministry.

Finalizing the beneficiary list in well-announced and open meetings at UP

The Union GR Committee is officially responsible for finalizing the beneficiary list for the program. In many cases, the committee either does not call any open meeting or does not massively announce the meeting to select beneficiaries. This hinders the selection process. An open meeting can encourage fishermen to apply the peer-to-peer assessment of the true fishermen groups to get enlisted in the GR program.

Ensuring proper monitoring of the open meetings for beneficiary selection

Monitoring the selection process of the beneficiaries by the government officers from the Upazila level can make the selection process more transparent. The majority of the fishermen population asked for the presence of any of the government officers referring to the UNO, Upazila fisheries officer, and the Project Implementing Officers [PIOs]. Moreover, the presence of the officers from the Upazila level will encourage the fishermen community to speak up about their concerns at the open meetings.

Taking necessary steps to increase Ilisha catch

The use of monofilament net can be completely banned in Bangladesh as it is used for jatka fishing. Production and marketing of the monofilament net can be banned by the legal order of the High Court. Implementation of the ban can then be ensured by the Ministry of Fisheries with assistance from respective administrative and law enforcing agencies.

Ensuring registration of all fishermen and the fishing boats

In addition to providing identity cards for all the fishermen at the river and in the sea, all fishing vessels can be brought under VMS (Vessel Monitoring System) and the AIS (Automatic Identification System) to track the movement of the fishermen and their boats. The registration of all fishermen may help government agencies to provide the VGF support to the potential beneficiaries while tracking all fishing boats under VMS may help to monitor the status of the fishing boats in the ban periods.

Providing alternative skill development for the fishing community

The study finds that fisheries co-management based on the participation of communities and the relevant stakeholders [e.g local government] is increasingly being recognized as a priority need. Some areas are considerable potential for home gardening with suitable soil, water, and other conditions conducive for the implementation of home gardens. There is a sizeable youth population mostly girls in fisher communities in the study area. There is a high potential to direct them towards productive work through appropriate vocational training and skills development programs, supported with career guidance and appropriate placement schemes. Local government organizations and other relevant agencies can partner with the local NGOs in providing these supports to the fishermen community. Besides several micro-enterprise programs for members of fishing communities need to be introduced.

Chapter 7: Conclusion and way forward

In recent decades a sharp rise in production has seen both inland fish production and aquaculture. Implementation of government intervention to protect jatka and the mother Hilsha has brought significant improvement in Ilisha production. These interventions have started from the awareness-raising activities among fishermen on reducing jatka catch since 2003-04, followed by banning the catch of jatka and mother Ilisha in 2007-08, and finally the 22 days' ban on catching mother Ilisha across some breeding zones. However, the ban has direct consequences for millions of fishermen. Considering this local context, the government has spread the horizon of interventions by arranging a special support program for the affected fishermen. The food-based incentive under a special safety net program is introduced, namely the GR program for fishermen from 220. An analysis of the program is vital for future interventions in this regard.

The results obtained in this study show that at least more than one-third of the affected fishermen remain without any support from the government during the ban periods. The amount of food support given under the program is not enough to help the fishermen households meeting their daily needs. Moreover, as the GR program provides only rice, the need for other staples is often unmet in the affected households causing a nutritional deficit. Consequently, many affected households suffer financially during the ban period to meet the food and non-food expenses of the household as they fail to get engaged in other non-fishing jobs due to lack of skills. Transportation cost to bring the allocated rice for GR program from the Upazila headquarters to the local UP harms the beneficiaries as the UP Chairman takes off a small portion of the allocated rice from each of the beneficiaries to compensate for the cost. Local political economy sometimes put beneficiaries to pay speed money to get the benefits and often bear some transaction cost. These factors together can cost up to a quarter worth of the annual GR support for the beneficiary households.

During the ban periods, the personal loan taken from the NGOs, local cooperatives, or friends and relatives is a common practice. The basket of the GR support needs to be over time. However, the future intervention that needs to be taken by the government is restoring fisheries co-management and alternative livelihood approach for the fishers along with non-governmental organizations. Some areas are considerable potential for home gardening. The youth population mostly girls in fisher communities need to be engaged in productive work through appropriate vocational training and skills development programs. The government can support another scheme with career guidance and appropriate placement.

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Annex 1

Table 15: Allocation of GR support during the ban on mother Hilsha catch

District Name	Number of upazilas proposed in 2018-19	Number of upazilas covered in 2018-19	No. of fishermen families proposed in 2018-19	No. of fishermen families covered in 2018-19	Percentage (%) of fishermen covered
Chandpur	4	4	51109	36575	71.56
Lakshmipur	4	4	49297	37326	75.72
Feni	1	1	1000	500	50
Noakhali	4	4	24105	8524	35.36
Brahmanbaria	1	0	2500	0	0
Cox's Bazar	6	8	48393	10500	21.70
Chittagong	6	5	26866	17500	65.14
Bhola	7	7	131326	88111	67.09
Patuakhali	8	8	68251	45642	66.87
Barisal	9	9	49049	43644	88.98
Barguna	6	6	40682	34211	84.09
Pirojpur	7	7	23804	14875	62.49
Jhalokathi	4	4	24372	1460	5.99
Shariatpur	6	6	20951	16355	78.06
Gopalganj	3	0	730	0	0
Jamalpur	4	4	5000	5000	100
Narsingdi	2	2	2435	500	20.53
Tangail	4	0	2098	0	0
Manikganj	3	3	6650	7779	116.98
Madaripur	3	3	4586	1500	32.71
Dhaka	1	1	846	850	100.47
Narayanganj	2	0	1559	0	0
Sirajganj	5	4	5710	1500	26.27
Rajshahi	5	4	6986	1800	25.77
Chapainobabganj	2	0	950	0	0
Natore	1	1	725	500	68.97
Pabna	4	1	7288	1250	17.15
Bagerhat	7	7	25838	5198	20.12
Khulna	3	3	2209	2100	95.07
Satkhira	7	0	49023	0	0
Kushtia	6	6	2225	1266	56.90
Kishoreganj	1	1	699	699	100
Rajbari	4	4	4640	4640	100
Faridpur	4	4	2237	2237	100
Munshiganj	6	6	3671	3671	100
Kurigram	5	0	5594	0	0
Gaibandha	4	0	4543	0	0
Total=	161	127	7,07,847	3,95,709	55.90

Source: Ministry of Disaster Management and Relief (2020)

Annex-2

Table 16: Allocation of GR support during the ban on jatka catch

District Name	No. of upazilas proposed in 2018-19	No. of upazilas covered in 2018-19	No. of fishermen families proposed in 2018-19	No. of fishermen families covered in 2018-19	Percentage (%) of fishermen covered
Chandpur	4	4	51109	51190	100.16
Lakshmipur	5	4	50252	25947	51.63
Chittagong	6	5	26866	6280	23.38
Noakhali	4	4	24105	5500	22.82
Feni	1	0	1000	0	0
Cox's Bazar	8	0	48393	0	0
Bhola	7	7	131366	52150	39.70
Barisal	9	9	49049	31715	64.66
Barguna	6	5	44682	13750	30.77
Patuakhali	8	7	69660	25173	36.14
Pirojpur	7	7	23813	9551	40.11
Jhalokati	4	4	5263	1012	19.23
Madaripur	3	3	4586	1478	32.23
Shariatpur	4	6	20000	12194	60.97
Munshiganj	6	5	3721	2335	62.75
Bagerhat	7	7	5739	5713	99.55
Khulna	3	0	2209	0	0
Manikganj	3	3	6650	2336	35.13
Dhaka	1	1	846	850	100.47
Kishoreganj	1	0	625	0	0
Rajbari	4	0	4640	0	0
Faridpur	4	0	2237	0	0
Narayanganj	2	0	1559	0	0
Narsingdi	2	0	2435	0	0
Tangail	4	0	6539	0	0
Gopalganj	3	0	730	0	0
Satkhira	7	0	49023	0	0
Kushtia	6	0	2225	0	0
Rajshahi	5	0	7568	0	0
Natore	1	0	650	0	0
Chapainobabganj	2	0	900	0	0
Pabna	4	0	13884	0	0
Sirajganj	5	4	6756	1500	22.20
Jamalpur	4	0	5000	0	0
Kurigram	5	0	5791	0	0
Gaibandha	4	0	4553	0	0
Total=	159	85	684424	248674	36.33

Source: Ministry of Disaster Management and Relief (2020)

Annex - 3: Questionnaire for the survey

Section 1: Personal Information

1) Sex	2) Relationship with the fishermen	3) Primary Employment	4) Religion
1. Male	1 Head	1. Self-employed in Fisheries	1. Islam
2. Female	2 Husband/wife	2. Employed as worker in Fisheries	2. Hinduism
3. Transgender	3 Son/Daughter	3. Employed as day laborer in Agriculture	3. Buddhism
	4 Spouse of Son	4. Employed in industry	4. Christianity
	5 Souse of daughter	5. Employed in service sector	5. Others (specify)
	6 Grandchild	6. Temporarily employed in government service	
	7 Father/ Mother	7. Self-employed in agriculture	
	8 Sister/ Brother	8. Self-employed in business	
	9 Nephew/ Niece	9. Self-employed in service	
	10 Other relative (specify)	10. Unemployed	
	11 Household help		
	12 Employee		
	13 Others (specify)		

5) Marital status 1. Currently Married 2. Never Married 3. Widowed 4. Divorced 5. Separated	6) Do you have any of the following disabilities? (Multiple answers possible) 1. Deaf 2. Mentally impaired 3. Physically disabled 4. Paralyzed 5. Others (specify) 6. None of the above 7. Don't know	7) Literacy 1. can only read 2. can read and write 3. None	8) What was the years of schooling (class) that you passed? 1. No class passed 2. Class 1 3. Class 2 4. Class 3 5. Class 4 6. Class 5 7. Class 6 8. Class 7 9. Class 8 10. Class 9 11. SSC/equivalent 12. HSC/equivalent 13. Graduate/Bachelor 14. Post graduate/Masters 15. Medical/ Engineering 16. Vocational 17. Technical 18. Nursing / Diploma 19. PhD 20. Kowmi/ Hafezia 21. Others (specify)

9. Number of household members: _____

10. Number of school going children in the household: _____

Section 2: Accessing GR program

1. Are you receiving the GR support from government?

(1) Yes (skip Q 7, 8, 9, 10)

(2) No (skip Q 2, 3, 4, 5, 6)

(Questions for beneficiaries)

1.2. Since when are you getting the GR benefit? _____

2. How many of your household members are receiving GR support?

3. What is the amount of rice received under the GR program?

Month

October

March-April

Amount of rice

4. Personal and household member's access to social protection schemes other than GR (only the beneficiaries of other social safety net schemes):

1. How many of your household members receive support from government's regular social protection programmes other than GR?	2. What were the main programs in which you/others have been Included in the last 2 years? (If more than one, write the main 3)	3. How much did you/others receive in total (in cash and in kind) in the last year? (<i>Total in BDT</i>)	4. How did you receive the social protection benefit from the UP or other government agencies? 1 In Kind 2 In cash 3 via bank account 4 via mobile financing

Code for Q3: Safety Net Program code					
1	Ananda School (ROSC) [Cash/kind]	16	General Relief Activities	31	Urban Partnership for Poverty Reduction (UPPR)
2	School Feeding Program	17	Gratuitous Relief (GR)- Food/ Cash	32	Shouhardo Program (CARE)
3	Stipend for Dropout Students	18	Allowance for Beneficiaries in CTG-Hill Tracts Area	33	Nabojibon Program (Save the Children)
4	Stipend for Disabled Students	19	Food Assistance in CTG-Hill Tracts Area	34	Proshar Program (ACDI VOCA)
5	Old Age Allowance	20	Employment Generation Programme for the Ultra Poor	35	Financial Support Program for Cancer, Kidney and Liver Cirrhosis
6	Widow/Deserted/Destitute Women Allowances	21	Food/ Cash For Work (FFW/CFW)	36	Subsidy for Open Market Sales
7	Maternity Allowance Programme for the Poor Lactating Mothers	22	Test Relief (TR) Food (cash)	37	Block Allocation for Disaster Management
8	Maternal Health Voucher Scheme	23	Rural Employment Opportunity for Public Asset (REOPA)	38	Programme for Improving the Livelihood of Bade & Disadvantage common unit
9	Honorarium for Insolvent Freedom Fighters	24	Rural Employment and Road Maintenance Programme (RERMP)	39	Programme for Improving the Livelihood of Trans Gender (Hijira)
10	Honorarium and medical allowances for injured freedom fighters	25	Housing Support	40	Rural Livelihood Program
11	Ration for Shaheed Family and Injured Freedom Fighters	26	Agriculture Rehabilitation	41	100 days employment generation scheme
12	Allowances for Distressed Cultural Personalities/Activists	27	One Household One Farm	42	Stipend for primary students
13	Allowances for the Financially Insolvent Disabled	28	Targeted Ultra Poor (TUP) (BRAC)	43	Stipend for female students at secondary and higher secondary level
14	Vulnerable Group Development (VGD)	29	Char Livelihood Program (CLP)	44	Others (specify)
15	Vulnerable Group Feeding (GR)	30	Economic Empowerment for the Poor/Shiree		

5. Did you have to pay any money/goods to get enlisted for benefits from the GR scheme?

1. Yes

2. No (*Skip Q 5.1, 5.2*)

5.1. If Yes, how much/what did you need to pay? _____ BDT

5.2. If Yes, why did you need to pay?

(1) Bribing the UP representatives

(2) Paying local political leaders

(3) Paying local fisherman leaders

(4) Others

6. Please provide data on the transaction cost:

6.1. Is there any transaction cost for you/any of the household member to withdraw the benefits in cash/kind once selected? 1 Yes 2 No (<i>skip 6.2, 6.3, 6.4</i>)	6.2. What is the amount of money (calculate the value if the benefit is in kind) of the transaction cost to withdraw the benefit for last year? (Write the amount in Taka)	6.3. What is the percentage of the transaction cost compared to the total value of the GR? (Write the percentage)	6.4. Why is the transaction cost needed? (<i>Choose multiple</i>) 1. Transport cost to reach the UP 2. Transport cost to reach the Bank 3. Transport cost to reach the mobile banking agent 4. Withdrawal cost 5. Others (Please specify)

(Questions for non-beneficiaries)

7. Have you heard about the GR scheme that benefit vulnerable fisherman?

1= Yes, I know about this program very well 2= Yes, I have heard but do not have much idea 3= No, I have no idea (*Skip Q 7.1*)

7.1. If yes, how have you known about the schemes?

(1) I have seen people benefiting from it

(2) I have learned about it from NGO workers

(3) I have heard about it from the UP representatives

(4) I have known about it from the fisherman of my community

(5) I have heard it from the leaders of the fisherman association

(6) I have heard about it from TV/Radio

(7) Others (please specify _____)

8. What are the reasons for you to not getting access to the benefits of GR? (*Answer multiple*)

Sl.	Reasons	Code
1	I am not a full-time fisherman	
2	Insufficiency of funds	
3	Larger demand compared to supply	

4	I am under-aged / I do not have the National ID Card	
5	I have been unaware about the social protection benefits	
6	Nepotism of the political leaders while making the list for benefits	
7	Favoring known people by the political leaders while making the list for benefits	
8	UP representatives and other political leaders ask for bribes to give the benefits	
9	UP (the GR providing place) is very far from my home	
10	Others (Please specify _____)	

9. Did you make any effort to secure the benefits of GR for yourself?

1. Yes (*Skip Q 9.2*)

2. No (*Skip Q 9.1*)

9.1. If yes, what sorts of effort did you make?

(1) I tried to make contact with the UP representatives personally but failed to reach them

(2) I approached the UP representatives to include me in the list but still did not receive any benefit

(3) I tried to make the National/Voter ID card for myself but failed

(4) Others

9.2. If not, why didn't you make any effort?

(1) I did not know what to do

(2) I thought I might not get it for my ethnic background

(3) I thought I might not get it for my religious/caste background

(4) I thought I might not get it for my political background

(5) I thought I might not get it as I won't be able to pay any bribe

(6) I thought I might get humiliated for my illness/disability

(7) I was not connected with any of the UP representatives

(8) I was unwilling to receive benefits from government due to social stigma about the beneficiaries

(9) I was unwilling to receive benefits from government due to insignificant amount

(10) Others (Please specify _____)

Section 3: Housing Information (Housing, Sanitation, Basic Utility Services)

SL	Question	Code
1	What is the type of tenancy occupied by your dwelling household? 1. Owned 2. Rented 3. Government owned land ('Khas' land) 4. Provided free by relatives/ employer 5. Others (specify)	
2	What is the type of dwelling house? 1. Katcha 2. Semi-pucca 3. Pucca	
3	What is the main construction material of the floor? 1. Bamboo/Polythene/Plastic/ Wood 2. Mud 3. Brick/Cement 4. Other (specify)	
4	What is the main source of drinking water of your household? 1. Piped/supply water 2. Tube well/Deep tube well 3. Well/Pond 4. Canal/river 5. Rain/spring water 6. Motor system 9. Others (specify)	
5	What is the main source of light in your household? 1. Electricity 2. Solar panel 3. Kerosene 4. Others (specify)	
6	What type of toilet is used by your household? 1. Sanitary 2. Non-Sanitary/Katcha Toilet 3. Hanging toilet 4. Open space/no toilet	
7	Do you share toilet with other households? 1 Yes 2 No	
8	Which is the primary fuel for cooking in your household? 1. Wood/fire-wood 2. Dung/leave/straw/charcoal 3. Gas 4. LP Gas 5. Bio-Gas 6. Kerosene 7. Others (specify)	

SL	Question	Code
9	During last 3 years, which of the following shocks did you experience? (Multiple answer)	
	1. No/ Did not face any shock (<i>Skip Q 10 & 11</i>)	
	2. Drought	
	3. Floods	
	4. Landslides/ Erosion	
	5. Unusually high price of essential commodities	
	6. Unusually High Level of Crop Pests and Disease	
	7. Unusually High Level of Livestock Disease	
	8. Unusually High Prices of Agricultural Inputs	
	9. Unusually Low Prices of Agricultural Output	
	10. Reduction in the Earnings of currently (Off-Farm) employed Household Member(s)	
	11. Loss of Employment of Previously Employed Household member(s) (not due to illness/accident)	
	12. Serious Illness or Accident of income Earner(s) or other HH Member(s)	
	13. Death of Income Earner(s) or other HH Member(s)	
	14. Theft of Money/Valuables/Agricultural or Non Agricultural Assets/Agricultural Output (Crop or Livestock)	
	15. Conflict/Violence	
	16. Tornado/Hail/Earthquake, etc.	
	17. Fire	
	18. Others (specify)	
10	How much was the total loss of money (income + assets+ food production+ others) as a result of the shock? In BDT	
11	How did your household cope with the shock? (Multiple answer)	
	1. Unconditional help provided by relatives/friends	
	2. Unconditional help provided by local government	
	3. Changed dietary patterns involuntarily	
	4. Changed cropping practices (crop choices or technology)	
	5. Household member(s) took on more non-farm (wage or self-employment) employment	
	6. Household members took on more farm wage employment	
	7. Household members migrated	
	8. Relied on savings	
	9. Borrowed credit	
	10. Sold durable household assets	
	11. Sold land or building	
	12. Rented out land/building	
	13. Sold trees/animals	
	14. Reduced expenditure on health and education	
	15. Did not do anything	
	16. Others (specify)	

Section 4: Wage and income

1. For how many years you are working as a fisherman? _____
2. Employment and Income:

	Primary employment during fish catching season-1	Primary employment during fish catching season- 2	Total	Employment during Hilsha ban-1	Employment during Hilsha ban-2	Total
Code						
Months of engagement						
Average monthly income (2018)						

Code for Employment	
1. Self-employed in Fisheries	6. Temporarily employed in government service
2. Employed in Fish catching	7. Self-employed in agriculture
3. Employed as laborer in Agriculture	8. Self-employed in business
4. Employed in industry	9. Self-employed in service (driving rickshaw/van)
5. Employed in service sector	10. Unemployed

Section 5: Assets

Household livestock / poultry /fish/ agricultural assets

1. Livestock/ poultry birds	2. Status of ownership 1.Own 2.Shared ownership	3. Number/Amount	4. What is the total value of this on the market today? (If you were to sell this, how much would you get for it?) (<i>InTaka</i>)
Cattle/ Buffalo			
Goat/ Sheep			
Chicken			
Duck			
Pigeon/ Other domestic Birds			
Fish assets			
Agricultural produce like crops, fruits, spices and vegetables			
Other ()			

Land assets

5. Land	6. Status of ownership 1. By inheritance 2. By purchasing 3. By grabbing 4. Rented 5. Sharecropping 6. Khas (Government) land 7. Other (specify)	7. Amount (in decimal)	8. What is the total value of this on the market today? (If you were to sell this, how much would you get for it?) (<i>In Taka</i>)
Homestead land			
Cultivable agricultural land			
Non-cultivable land			
Other land			

Household assets (non-livestock)

9. Non-Livestock Assets	10. Status of ownership 1. Own 2. Shared ownership	11. Number/Amount	12. What is the total value of this item on the market today? (If you were to sell this item, how much would you get for it?) (In Taka)
Boat			
Engine Boat/ Trawler			
Big Fishing Net			
Solar panel			
Bicycle			
Motorcycle			
Tractor			
Bicycle rickshaw/van			
Auto rickshaw			
Beds/ Chairs / tables / other furniture			
Mobile phone			
Radio			
Television			
Computer			
DVD Player/VCD player			
Sewing machine (hand or electric)			
Jewelry			
Other ()			

Section 6: Credit & Savings

1. Do you have a Bank account?

- a. Yes
- b. No

2. Do other household members have bank account?

- a. Yes
- b. No

3. Has your household taken a loan in the last year (2018)?

- a. Yes
- b. No (*Skip Q 4, 5*)

4. What was your source of borrowing? (*Select all that applies*)

- a. Friends/Families
- b. NGOs
- c. Banks
- d. Local Mohajon/ money lender

- e. Local cooperative/ samiti
- f. Other

5. What was the purpose of taking that loan?

- a. Investment
- b. Meeting household's daily needs
- c. Marriage
- d. Construction of house
- e. Paying another debt
- f. Treatment
- g. Others (*Please specify* _____)

6. When did you take the loan?

- a. Fish catching period
- b. Fish ban period

7. Please provide the following data:

Monthly average of financial indicators	Hilsha Catch Period (2018)	Hilsha Ban Period (2018)
Monthly savings/ surplus		
Monthly income deficit		
Monthly food expenditure		
Monthly non-food expenditure		
Total monthly expenditure		

Section 7: Access to public services

1. How do you go to the Union Parishad from your home?

- 1) Walking
- 2) By Rickshaw
- 3) By easy bike
- 4) By bus
- 5) By Boat
- 6) Others

2. How far is the UP office from your home? _____ Kilometer (Km)

3. How long does it take you to reach the Union Parishad from your home?
_____ (Minutes)

4. How much does it cost to reach the UP? _____ BDT

5. What are the most common services that you take at Union Parishad now? (Name any 3)

1= Birth registration, 2= National Id Card, 3= Character Certificate, 4= Testimonial, 5= death certificate, 6= other certificates, 7= to get information on social protection benefits, 8= to receive the benefits of social protection, 9= Others

Section 8: Utilization of GR

1. Please answer the following questions:

<u>Question</u>		<u>Answer</u>
1.1. What do you do with the GR?	1. Consume (<i>skip 1.2</i>) 2. Sell in the market 3. Exchange with other goods	
1.2. How much money do you earn by selling it?		
1.3. What percentage of the selling money contribute to your monthly expenditure?		
1.4. What percentage of your monthly need for rice is covered by the GR?		

2. What is the effect of Hilsha ban on your income?

- Income increases during Hilsha ban (skip 2.2, 3)
- Income decreases during Hilsha ban
- Income remains the same

2.1. If the answer of Q. 2 is 1, what percentage of your income increases during Hilsha ban?

2.2. If the answer of Q. 2 is 2, what percentage of your income decreases during Hilsha ban?

3. Is the GR enough to support the loss of your income during Hilsha Ban?

- Yes
- No

4. How would you like to get the GR to support the loss?

- In Kind
- Cash
- Both Cash & Kind

4.1. If you like to get the GR in Kind, what amount of rice would you need to fill the food deficit? _____

4.2. If you like to get the GR in cash, what amount of cash would you need to fill the income deficit? _____

4.3. If you like to get the GR in both cash and kind, what amount of money and rice you need to fill the income deficit? _____

Section 9: Perception on Hilsha Ban

Please choose any of the given options about the impact of Hisha ban on the following aspects:

<i>Aspects</i>	<i>Increased= 1</i>	<i>Decreased= 2</i>	<i>Unchanged= 3</i>
Amount of annual Hilsha caught from river			
Annual income of the small fishermen			
Annual income of the big fishermen (owners of boats and nets)			