

65-Day Marine Fisheries Ban Period: Bangladesh's perspective on Blue Economy

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Abstract

The concept of a Blue Economy came in front of the nation when Bangladesh won the maritime boundary dispute with Myanmar in 2012 and with India in 2014. Marine fishing is considered one of the important avenues in utilizing BE for Bangladesh. Since 2015, Bangladesh has introduced a 65-day marine fisheries ban period (from May 20 to July 23 of each year) in the Bay of Bengal to ensure the conservation of fish stocks and productive breeding grounds. While the fishing ban is expected to achieve this goal along with meeting the Goal of SDG 14, no study is conducted on how far the ban is implemented in achieving its goal. This study investigates relevant stakeholders' perspectives in understanding the implementation of the 65-day fishing ban and its subsequent results. The study is conducted with a qualitative research approach, in which data is collected from interviews and secondary sources. Data analysis is done in the form of discourse analysis and content analysis. Based on policy design goals, perceived policy outcome, and stakeholders' satisfaction, the policy performance is found 'nearly successful'. It is also found that though there is a high level of political commitment, moderate to the higher extent of law enforcement and satisfactory level of community engagement, moderate extent of policy incentive to the fishing community and moderate extent of organizational capacity may have contributed to the perceived implementation deficit. Therefore, a more pragmatic approach might be useful in creating a balance between economic benefit, social inclusion, and environmental sustainability.

Keywords: Blue Economy, SDG-14, fishing ban, marine policy, Bay of Bengal.

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1. Introduction

The “Rio+20” UN Conference on Sustainable Development (UNCSD) considered Blue Economy as a “marine-based economic development that leads to improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (Sakhuja and Narula, 2017). Blue Economy conceptualizes oceans and their adjoining land areas as ‘Development Space’ where sustainable use of resources is integrated into economic modeling and decision-making process. Though the term is relatively new, it has attained a greater economic significance in many countries in the Indian Ocean Region including Bangladesh due to having vast maritime zones under their jurisdiction. Accordingly, these countries have included the BE in their national strategy (Sakhuja and Narula, 2017).

Bangladesh enacted “The Territorial Waters and Maritime Zones Act, 1974” and established sovereignty and legal ownership of the sea and marine resources. However, the real implication of BE came in front of the nation when Bangladesh won 40 years long continuing maritime boundary dispute with Myanmar in 2012 and with India in 2014. As a result of these judgments, Bangladesh secured permanent demarcation and ownership of 1,18,813 square kilometers of Exclusive Economic Zone (EEZ) in the Bay of Bengal (Source: Report of DoF on Marine Fishing Ban 2021) (Figure-1a & 1b). Later, a Plan of Action for BE has been developed in 2014 and BE has been included in the 7th and 8th Five Year Plan of Bangladesh.

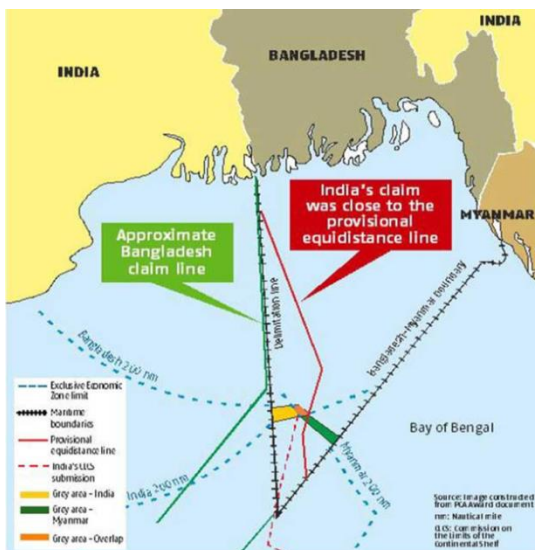


Figure 1a. Maritime boundary dispute resolution with India and Myanmar

Source: (Kotasthane, 2014)

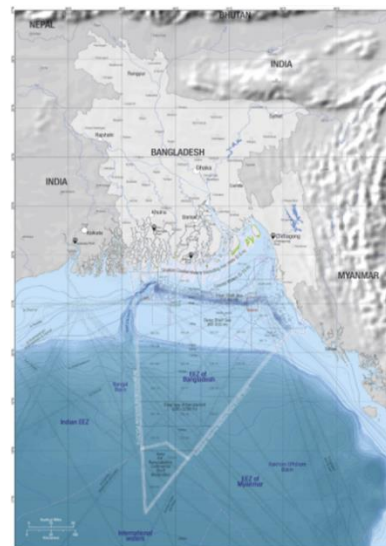


Figure 1b. Maritime Area of Bangladesh

Source: (Chowdhury 2004 and taken from Shamsuzzaman et. al., 2017)

As the BE concept features prominently as a policy objective of the Government of Bangladesh (GoB) to support the country's economic development, BE related 'Coordination Committee is formed in 2014 at the Prime Minister's Office for adopting a strategic plan which will facilitate the exploitation and management of marine resources. To achieve the expected growth target, the Department of Fisheries (DoF) under the Ministry of Fisheries and Livestock (MoFL), prepares short, medium and long-term Plan of Action in 2014 for marine resources conservation, management and capture. This Plan of Action is updated for the 2018-2030 period to align with the UN SDGs. Because, it is required to conserve, manage and capture marine fisheries resources which ensure sustainable yield keeping species growth and fish stock unchallenged.

At the end of the UN Millennium Declaration, the plan of action for Sustainable Development was adopted by the United Nations in September 2015. It aimed at harmonizing economic growth and was based on the principles of social inclusion and environmental protection. Sustainable Development Goal 14 specifically deals with the oceans and states, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development". It has 10 targets and its accompanying indicators. Its target 14.4 states that by 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated (IUU) fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics. Sub target 14.4.1 states about keeping the proportion of fish stocks within biologically sustainable levels. Based on above contexts, the notion of the BE and the SDGs are aligned and mutually reinforcing (Narula, 2017). the BE aids the development of other SDGs and is essential to meeting the remaining goals of SDG 2030 (Narula, 2017). Considering these aspects, short, medium and long-term plans of action to address sustainable catch and conservation of marine fisheries resources adopted by the DoF in connection to BE are mutually reinforcing.

Conservation of marine fisheries resources comes under the short-term Plan of Action of the DoF, which are implementable within 2020 through

- a) Imposition of the seasonal fishing ban to protect the spawning of the marine fisheries,
- b) Declaration and management of marine protected/ reserve area and
- c) Environment-friendly fishing equipment identification and utilization.

It also covers the target 14.4 of SDG 14. The government of Bangladesh implemented the imposition of a seasonal fishing ban to protect the spawning of the marine fisheries, secured 3.27% area as a Marine Protected Area (DoF 2020a) from the target of preserving 10% of the marine area as a Marine Protected Area by 2030 and activities ongoing for identification & utilization of environment-friendly fishing equipment, targeted to achieve by 2022. This policy evaluation paper particularly puts focuses on assessing the implementation of a seasonal fishing ban as conservation measure for marine fisheries resources.

Over the last 30 years, there has been a big shift in the composition of catches by the different categories of trawlers (MFO 2016). Before 2000-2001 there was an abundance of the major commercial species including white/ black/ golden grunters (datina), red/spotted croakers (poa), catfish (kata machh), snappers and hair tails (chhjru machh), Indian Salmon (lakkhya), pomfret, Indian pike (kamila machh). Since 2005-06 these have mostly been replaced by the low valued species like Bombay duck (loitta), bream (Red fish), mackerel, sardine, Spanish mackerel (maitta), aila, hardtail scad (kaua), small tuna, colombo machh and juvenile/baby fish of various species which are less commercially important. In 1984-86 surveys of R.V. Anushondhani, there were 20 species contributing to the main catch, whilst in 2005-06 this has reduced and came down to 12. In 2014-15, the most captured fish species were sardine, mackerel, loitta, scad and lal machh. This indicates that the commercially more valuable and longer-lived species are being replaced by smaller-sized, short-lived pelagic fish, which is creating an obstacle in the species distribution of the fish stocks. If this trend continues, then it will change the ecosystem structure and functions. In such a scenario, it will be difficult to recover productivity. In short, these shifts of species will have long-term implications for fish production and its dependent fisher's livelihood (MFO 2016). A species-wise abundance of fish and its trend is presented in Table-1.

Table 1: Commercially valuable fish species' abundance based on commercial trawler catch

Family	Common Name	Abundance (%)	Catch (%) as per log of trawlers				
			2012-13	2014-15	2015-16	2016-17	2017-18
Ariidae	Catfishes	11.99	3.02	3.48	2.19	1.90	2.18
Siaenidae	Crocker, jew fishes	10.37	3.81	4.65	2.81	2.88	3.6
Nemipteridae	Threadfin breams, redbfish	9.00	10.42	7.57	4.86	3.76	5.36
Trichiuridae	Hairtail fishes	6.19	6.23	6.53	4.65	4.85	7.39
Carangidae	Jacks, scads, black pomfret	5.77	4.09	3.89	5.18	3.75	3.2
Scombridae	Mackerels	5.36	7.41	10.28	11.30	10.08	8.6
	Tunas	--	2.34	3.22	1.75		
Clupeidae	Sardines, hilsha	3.57	30.75	37.00	41.43	43.79	35.16
	Hilsha	--	3.34	2.21	3.60	6.60	9.50
Pomadasyidae	Grunters	2.47	0.41	0.27	0.61	0.06	0.08
Stromateidae	Pomfrets	1.82	1.83	0.59	0.26	0.65	0.72
Harpadontidae	Bombay duck	1.29	2.54	2.18	0.28	0.89	5.19
Lutjanidae	Snapper	1.07	0.37	0.43	0.69	0.28	0.29
Cephalopodae	Squid, cuttle fishes	1.41	1.06	1.44	1.91	0.64	0.70
Elasmobranchii/Rajidae	Shark, skates, rays	3.38	0.80	1.12	0.24	0.61	0.47

Source: MFO, 2016 & MFO, 2019

Research surveys in recent years by RV Meen Shandhani and commercial fish catch data collected over past years indicate that all the commercially important marine fishes in Bangladesh have been overexploited and are currently depleted to varying degrees. None of the economically significant marine stocks appears to be capable of recovery under the current fishery regime. It is very likely that the bad overfishing situation could turn worse in a matter of a few years' time unless effective and restrictive fisheries management is enforced (DoF 2021). Therefore, the Government of Bangladesh (GoB), in recognition that marine fisheries resources are a vital element in achieving SDG 14 and harnessing the potential from blue growth initiatives, has given major focus to sustainably managing and conserving marine fisheries resources (DoF 2021). However, adopting conservation measures is not new for Bangladesh. Because since 2003, the Hilsha conservation program is ongoing under the Hilsha Fisheries Management Action Plan.

To increase and sustain the Hilsha production, the Government is implementing ‘The Hilsha Fisheries Management Action Plan’ since 2003 which resulted in a 100% increase in production over the last 16 years and supports the livelihoods of around 0.5 million fishers (DoF, 2021). The main element of the strategy is the identification of a 7000 sq. km major hilsa breeding area in the Bay of Bengal and spatial protection of four critical spawning grounds and five Hilsa and juvenile Hilsa or ‘Jatka (less than 25 cm length) sanctuary areas/nursery grounds through seasonal fishing bans with a compensation package to affected fishers under a GoB safety net arrangement program. Besides, to facilitate Hilsa breeding, there is a countrywide prohibition on catching brood hilsa for 22 days in October during the peak breeding season. After spawning, to give time to grow fish, there is also an 8-month countrywide ban from November to June every year on catching, carrying and selling Jatka (Islam et al., 2021).

The fishing ban method is an internationally accepted procedure for conservation and maintaining an uninterrupted spawning period of fisheries resources. Most of the coastal nations have adopted this strategy. The following Table 2 presents the fishing ban duration and period of some selected countries.

Table 2: Fishing ban duration and period in different countries

Country	Ban Duration (Month)	Ban Period
1. The United Kingdom	3	January -March
2. United States of America (Texas)	2	15 May- 15 July
3. The Netherlands	2.5	15 February-30 April
4. Kenya	4	November- March
5. Madagascar	3	November-February
6. Guyana	2	October- November
7. South Africa	4	November – February
8. Kingdom of Saudi Arabia	5	15 August-15 January
9. Bahrain	5	01 March- 31 July
10. New Zealand	9.5	01 November-14 August
11. India (East coast)	2.03 (61 days)	15 April-14 June
12. India (West coast)	2.03 (61 days)	1 June-31 July
13. Myanmar	3.03 (91 days)	16 May – 14 August
14. Thailand	3.03 (91 days)	01 April- 30 June
15. Sri Lanka (lobster capture)	3	February, September-October
16. China	2.6 (78 days)	16 May-01 August

Source: DoF, 2022

Bangladeshi researchers found that the spawning period of most fish species in the Bay of Bengal is from May to July. Therefore, they requested to impose a 65-days fisheries ban on safe spawning and post-spawning conservation for enhanced capture of marine fisheries at a later period. As Bangladesh reaped the benefit of enhanced Hilsa capture while taking initiative for conservation, GoB applied the same conservation management strategy here too.

For sustainably managing and conserving marine fisheries resources, GoB imposes 65-day marine fisheries ban on capturing all types of fishes, shrimps and crustaceans in the Bay of Bengal starting from 20 May to 23 July each year for all types of artisanal, mechanized and commercial fishing vessels/trawlers following the amendment and addition of the Marine Fisheries Rules, 1983.

*“19. **Banned Period.** In order to facilitate spawning and the conservation of marine fisheries resources within the economic zone of Bangladesh, catch or cause to be caught of any kind or species of fish and crustaceans by all types of fishing vessels shall be banned from 20 May to 23 July each year.”*

The fishing ban starts in 2015 for the first time in the Bay of Bengal and this ban was restricted to only industrial fishing. However, the implementation of 65-day ban on marine fishing policy was not an easy journey. President of the Marine Fisheries Association lodged a writ petition in the High Court in 2015 challenging the legality of the gazette published on May 20, 2015, on the ban on fishing in the exclusive economic zone of the Bay of Bengal from May 20 to July 23. On July 9, the High Court bench postponed the effectiveness of the gazette after the primary hearing of the writ. However, the High Court (HC) division bench dismissed the rule on May 15, 2017 and upheld the government order. Consequently, fishing would be banned for 65 days (May 20 to July 23) in the country's exclusive zone of the sea, aiming to ensure the conservation of fish stocks and productive breeding grounds is sustained. As the government got the verdict in favor of the ban in 2017, industrial fishing was stopped hereafter in 2017 and 2018. Under this ban, only 257 commercial trawlers had to comply with the ban, the artisanal fishing trawlers were continuing fishing as usual during these periods.

In 2019, the government took the position against both artisanal and industrial fishing and declared a ban on capturing all types of fish, shrimps and crustaceans in the Bay of Bengal for both the artisanal and industrial fishing following authority and power entrusted in section 3(2) of the Marine Fisheries Act, 2020.

This triggered protests and demonstrations in the coastal region particularly Chattogram. Fishermen blocked the Dhaka-Chattogram Highway. Fishing associations have called on the Prime Minister to reconsider the ban. They were also asking for compensation. (Source: BBC News, 20 May 2019). The honorable Prime Minister was

in a firm position on the ban but was in favor of the distribution of rice as food support. In response to protest and compensation demand, the government allocated a certain amount of rice as partial support to fishers under the Vulnerable Group Feeding (VGF) program and implemented a ban in 2019. However, besides food support to the poor and marginal fishers during the ban period, the government puts emphasis on public awareness building & community engagement and law enforcement for secure effective implementation of the ban.

Considering the above contexts of international practice and Bangladesh's experience with Hilsa fish protection, a 65-day ban on marine fishing is an evidence-based policy that is expected to ensure implementation success. However, there is a deficiency of literature on '*how far 65-day ban on marine fishing is effective in achieving its policy performance*' and '*what are the factors affecting the policy performance?*' This study aims to answer these questions with the following objectives.

2. OBJECTIVES OF THE STUDY

This study aims to see Bangladesh's BE strategies and its implementation with particular focus on the marine fisheries resource conservation through implementing fishing ban for a period of 65 days during the breeding season of most of the fish species in the Bay of Bengal. However, achievement of this study aim and addressing the raised research questions largely depends on achievement of the following specific objectives. The specific objectives of the study are to:

- a. To assess the extent of policy implementation success; and
- b. To explore the factors affecting policy implementation.

3. ANALYTICAL FRAMEWORK OF THE STUDY

Government translates its political visions into public policies. If these policies were not executed properly, there would have implementation deficit and policy goal might not be achieved. To address the policy implementation deficit, several models of policy implementation have been developed after the 1970's. Among these models, models developed by Van Meter and Van Horn (1975), Mazmanian and Sabatier (1983), George C. Edward III (1984), and Thomas & Grindle (1990) are mention worthy. These models conceived implementation as the hierarchical execution of centrally-defined policy intentions and interpreted policy as input and implementation as output factors (Pülzl and Treib 2006).

In Van Meter and Van Horn (1975)'s model, policy performance differs due to the factors which are connected to policy standards and objective, resources, inter-

organizational communication, characteristics of implementing agencies, economic, social, and political conditions and disposition or attitudes of the implementers. On the other hand, in the context of implementing policy reform in developing country, Thomas & Grindle (1990) focuses on the conflict and reactions that are evoked by reform efforts and required resources to sustain such reform. To accommodate these, Thomas & Grindle (1990) theorize policy implementation model with wide range of factors including policy content and goals considering the political and economic environment, logistic support, planning and mobilization of sufficient physical, human, and material resources, the commitment of lower-level officials and public reaction.

Chowdhury (2005) found Thomas & Grindle (1990) model as well as Van Meter and Van Horn (1975) model suitable for explaining policy implementation success in ban of two-stroke engine transportation vehicle in Dhaka city. Following Van Meter and Van Horn's frame of analysis Chowdhury (2005) explained how major change and high goal consensus among all stakeholders led this particular policy towards successful implementation. Later, Chowdhury (2005) gave focus on Thomas & Grindle's interactive framework with a view that implementation is an interactive and ongoing process of decision-making by policy elites and policy managers. It focuses on the conflict and opposition during implementation of the policy. Based on analysis author argued that an overall support from the public and target groups, involvement of fewer bureaucratic actors in policy implementation, strong political will and effective mobilization of bureaucratic resources (financial, managerial and technical) were behind the achievement of policy goal and minimizing antagonistic reactions successfully.

Islam (2015) studied implementation of industrial pollution control in Bangladesh and identified obstacles in implementation following the conceptual framework of policy implementation process developed by Van Meter and Van Horn (1975). Islam (2015) presented actions of actors at the implementing agencies and found absence of appropriate laws, acts and regulation, incompetency of implementing officials, corruptive practices, political maneuvering, and required technology deficiency as major factors. Besides, author also pointed out some important factors such as weak accountability and ineffective monitoring system of the top, hassle in the judicial systems, shortage of required staffs, and lack of infrastructural and technical capacity of the implementing agencies.

Based on the explanatory power of the factor identified by Van Meter and Van Horn (1975) and Thomas & Grindle (1990) and its contextualization in Bangladesh context with two contrasting implementation performance experience, to assess performance of 65 days marine fishing ban, these two models are found suitable. Therefore, the analytical framework of this study is mainly derived from ideas presented in these models. In which, the policy effectiveness differs due to the factors namely political disposition, financial and technical resources, bureaucratic structure and communicating policy and program goals to the relevant stakeholders. Here, these factors are

operationalized as political commitment, policy incentive, law enforcement, capacity of the organization and finally, community engagement. Besides, policy effectiveness or policy performance is operationalized here by the perception on the achievement of the policy design goal, perception on policy outcome and satisfaction level of the relevant stakeholders. Analytical framework is presented in the Figure- 2.

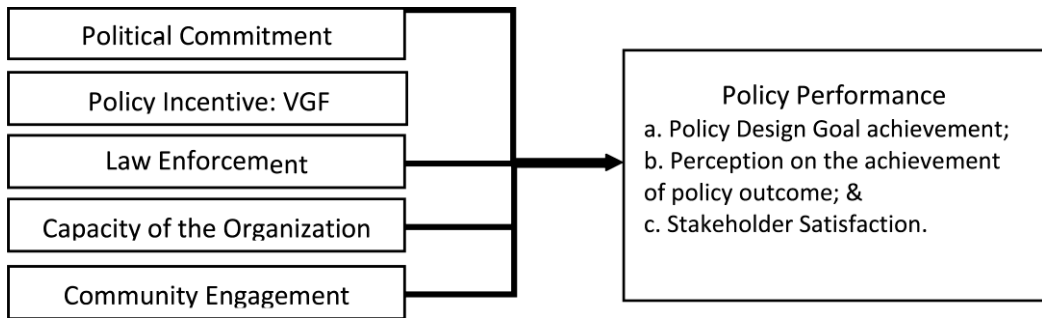


Figure 2: Analytical Framework of the Study

Source: Authors' own construction

In the policy analysis practice, output, outcome and impact are considered as different dimension of policy effectiveness or in other words policy success (Wolf 2010). Output indicators are the weakest indicators for the policy effectiveness and output indicators give particular focus on the “regulations, programs, and organizational arrangements that actors establish to operationalize the provisions of regimes” (Young 1999 as cited in Schäferhoff 2009). The outcome dimension of policy effectiveness goes beyond this and encompasses changes at the population level or changes in the behavior of those involved (Schäferhoff 2009). Here, in this study, policy performance has been measured through three indicators. First, through meeting *policy design goals*, which are behavioral output variables to characterize the performance of the implementers in delivering services, which meet the narrow perspective of performance. Second, by *policy outcome* which is tried to find out through extracting perception of the stakeholders. Finally, with *stakeholder's satisfaction*, which implies wider perspective of policy performance, and it is mainly ex post judgment of the actors about the process and the outcome.

In this study, political commitment is measured by the active participation of the political representative and their influence to the key stakeholders or key interest group in taking policy goal to action. Second, following authority and power entrusted in section 3(2) of the Marine Fisheries Act, 2020 several law enforcing agencies are engaged in enforcing ban in the coastal districts and Upazila and in the sea. It is expected that sufficient budget allocation, required manpower and suitable logistic

support facilitate better law enforcement in terms of stopping fishing, destroying fishing net, imposing fine or imprisonment. Third, policy incentives can be regarded as a policy instrument which reward the implementers for achieving specific results. During ban period, fishermen will not be able to catch fish, so as livelihood support certain amount of rice is given to motivate fishermen to refrain from going sea for fishing. However, for achieving desired goals, the insufficiency of food amount needs to be adjusted with the alternative income generating activities for the fishers. Therefore, sufficiency & well distribution of food support and arrangement of alternative livelihood may have a positive effect on aligning the ban implementation.

Fourth, the success of policy implementation is largely dependent on the capacity of the implementing organization. Organization capacity is measured here with the availability of sufficient budget, manpower and logistic support in the implementer's office along with availability of infrastructural and technical capacity for implementing marine fishing ban policy. Fifth, for conservation, compliance with ban regulation mostly depends on the cooperation among the government agencies and the locals fishing community (Bavinck et al. 2008, cited from Islam et. al. 2021). Moreover, there should have participatory decision-making for the duration and exact period of fish spawning and closed season for marine fishing (Islam et. al. 2021). Therefore, community engagement is measured through awareness raising campaign, workshop and other publicity, and through engaging local community in the decision-making process create goal consensus for a particular policy.

4. METHODOLOGY OF THE STUDY

For this policy evaluation on marine fishing ban case, qualitative research approach is adopted with primary data obtained from interview and with secondary data collected from documentation and archival records. Interviews are conducted on three categories of government officials. Implementing agency and Ministry officials, officials from other government offices including law enforcing agencies and representative from fishing community. Interviews are conducted with the key participants in face-to-face setting with semi-structured questionnaire as well as through telephone with whom face to face interview was not possible. Purposive and snowball sampling procedure were adopted for key respondent selection. The following Table-3 gives composition of the respondents.

Table 3: List and composition of key respondents

Key respondents		Number of respondents
1.	Implementation Ministry and Agency Officials (e.g., MoFL, DoF and Marine Fisheries Office)	8
2.	Other government officials (e.g., Field Administration and BCGs)	4
3.	Representative Fishing Community (e.g., Industrial fishing and Artisanal fishing)	2
TOTAL		14

Based on Miles and Huberman (1994), following three steps were used for data analysis. Storing of data: At this stage, grouping for all data based on the variables, indicators and measures are made. Managing data: Then a close look was given to the contents to get the sequence of a particular variable which match theoretically guided sequence found from literature survey. Processing data: At this stage, emphasis is also given in searching more explanation from the key respondents based on actual field level experience. During processing, simple form of discourse analysis and content analysis technique were used.

5. FINDINGS AND ANALYSIS

5.1 Policy Performance

5.2 Policy Design Goals

For increasing public awareness and community engagement, Minister, MoFL conducted an inter-ministerial coordination meeting with the law enforcing agency, field administration, officers of different level of the implementing agency and the relevant stakeholders before starting the ban period. Fifteen decisions were taken in that meeting. Among these 15 decisions, the following 5 decisions are considered as ‘policy design goals’ and achievement of these design goals was measured based on the perception of implementers.

- a. Stopping of fishing vessels going to the sea for fishing during the ban period;
- b. Closure of Fish landing stations and fish preservation related factory (e.g., ice factory, cocksheets factory);
- c. Surveillance in the sea through Bangladesh Navy (BN) and Bangladesh Coast Guards (BCG);
- d. Distribution of rice support in form of VGF as incentive; and

6. Publicity and awareness raising

Respondents mentioned that due to having binding requirement of Sailing Permit (SP) for the commercial/industrial fishing vessels, industrial fishing had been stopped successfully. As industrial trawler required to show SP to the BCG and BN, they are unable to go to the sea. Artisanal fishing boats (less than 15 M.ton capacity) usually do not require sea worthiness certificate from the Mercantile Marine Department or they do not need any licensing from Marine Fisheries Office. Secondly, it is difficult to control 710 kilometers long coastline for the artisanal fishing boats. Therefore, some violations are recorded. During law enforcement, artisanal fishers faced some imprisonment, fine and burning of their fishing net. Moreover, due to some remoteness of the location, law enforcing agencies takes time to go there, and the fishers enjoy this opportunity. Besides, there are some small scale subsistence fishing, which was not controlled fully. Except this leakage made by few artisanal boats and subsistence fishing, stopping was nearly successful.

One respondent mentioned that it has been possible to stop the ice factory and cocksheets factory. However, another respondent in a coastal belt spelt out some limitations on closure of ice factory. He mentioned that during that time only sea fishing is banned but not the inland fishing. Inland fishing requires ice, so it is not practical to close those factories. Upazila Nirbahi Officer (UNO) in a coastal district categorically mentioned about the activities undertaken during the ban. During ban period, UNO plying on a big trawler finds that speed boat is more suitable for speed and entering the small canal. Sometime artisanal fishers enter in to the small canal when they see law enforcing agency, some time they become aggressive and do not hesitate to attack. In this context, fisheries officer and other law enforcing officials work is risky.

Local political leaders assist in awareness raising campaign and distribution of rice support in the form of Vulnerable Group Feeding (VGF). However, UNO in another coastal district focused on *Uthan Boithok* (awareness raising campaign at the fishers' house premise) in presence of local Union Parishad Chairman and delivery of VGF to the fishers through the Union Parishad Chairman. According to one UNO, fishing ban situation is improving than earlier days. Even, if any fishers go to the sea, the other fisher do not hesitate to inform them. This is the result of publicity and mass awareness campaign. Based on above evidence, policy design goal was achieved to a great extent.

7. Policy Outcome

Perception of the respondents about policy outcome in the perspective of restoration of species, increased size and weight of the catch and positive trend of catch is presented below:

We faced pressure on catch for long time and have observed species size is gradually becoming smaller. But after the ban, we found bigger size and increased weight of the fish. It is opinion of the fishers and inspectors of DoF, who took the measurement during unloading of fishes. So, we may say, the ban policy is successful in securing outcome (Key respondents from the DoF).

We see drastic change in the fish market after the fishing ban. This is extraordinary scenario. We also heard that some fishers cut their net while they found fishes more than adequate. Moreover, there are species diversity observed in the fish market (Responses from UNO in a coastal district).

The following Figure-3 & 4 shows an upward trend for both artisanal and industrial fishing trend.

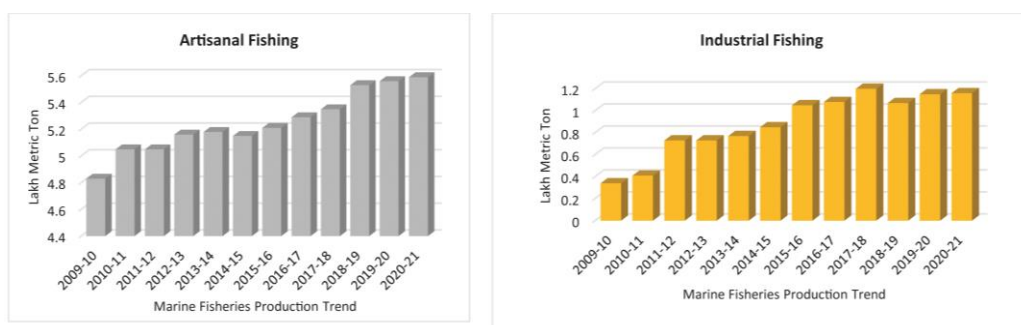


Figure 3 & 4: Marine fish production trend

Source: Bangladesh Economic Review, 2021

As representative of species growth, catch figure of the Hilsa fish species shows a rise of production after the 2015-16, when the ban period is started (Figure-5).

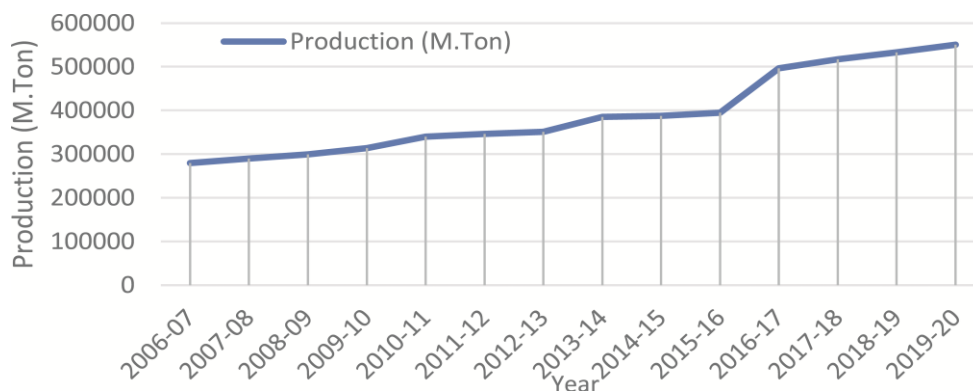


Figure 5: Annual Hilsha Production

Source: Yearbook of Fisheries Statistics of Bangladesh, 2019-20

Newspaper also reported similar fact: “Fisherfolk from the Shah Pari Island have said that this year they have caught more fish compared to the past few years” (bdnews24.com 10 January 2022). In sum, there is indication of achievement of policy outcome to some extent, but for confirming about policy outcome requires more time.

8. Stakeholders’ Satisfaction

Stakeholders’ satisfaction is measured based on their perception on policy outcome, and the policy process. Views and opinion expressed by key respondent in this regard are:

We have successfully achieved the 65-day ban on fishing at the Bay of Bengal. There are some agitations at the very beginning. But at the end, we found higher number of fish in Hatia and Kutubdia and both industrial and artisanal fishers got more catch. One good example is that one fisherman submitted illegal set bag net to our local office. (key respondent from DoF).

We have observed that Hilsa and Shrimp catch have been increased. Fishers have realized the benefits, as a result they are complying by themselves. Due to this reason, government is also benefited. Moreover, the reporting in the newspaper is not as bad as was earlier. We are satisfied, because the situation is now very much consistent and stakeholder level support is available (Key respondents from the DoF).

During the ban period, fishing community act as companion of law enforcing agencies. If any trawler goes to fishing, other fishermen inform the implementing agency office. It reflects the success of the community engagement initiative (responses from UNO in a coastal district).

65 days fishing ban is a success story of the government. But we BN and BCG are behind this achievement. BN and BCG enforce the law and hand over the rule breaker to the DoF officers for filing case. In that sense MoFL and Ministry of Defense (MoD) implement the policy (response from BCG official).

We usually go for monitoring and surveillance and some time we see fishing trawlers in the sea. However, this number is decreasing and we think it is due to our heavy publicity and awareness building effort and the raised amount of fine. (responses from UNO of a coastal district).

Bangladesh River Police is also found in complacence that Bangladesh River Police conduct operation during 65 days of the fishing ban. They took the initiative of listing the ice factories and ensuring shut down of those factories during the ban period. Moreover, to keep the trawlers anchored they collected the details of the trawlers and ship owners. River Police filed case against 63 fishermen and fined 28 trawlers and collected 9.3 lac taka in 2020. They also believe that due to these initiatives, production of fishes in the sea has been increased significantly. Bangladesh River Police also got

recognition for their effort in implementing ban from the Minister, MoFL in 2021 (Annual Administrative Report of Bangladesh River Police 2020).

The result of the ban is very good for all as we usually find larger size of fish and it is particularly true for Hilsa. We were very happy. However, for securing 100% benefit, Fisheries department officials need to be more vigilant and active. Sometimes they are very slow to respond while we gave them information of ban violation. (Respondent from artisanal fishing group).

Government initiative of 65 days fishing ban has been successfully implemented and we all have got the benefits. When ban is over, we have found catch increase. It is true that there will always have some disagreement, but what government decides, our duty is to follow. We can reap the benefit then. Going against the views of the government does not bring benefit always (respondent from industrial fishing group).

Based on empirical evidence on achievement of policy design goals, it is achieved to a great extent but not a complete success. The policy outcome indicates some achievement but there are reservations too. Finally, the stakeholders are found in some sort of satisfaction whereas few of them found relatively conservative. Based on above circumstances, the extent of policy performance can be termed as 'nearly successful'.

8. Factors Affecting Policy Performance

8.1 Political commitment

The government has decided to ban fishing in the Exclusive Economic Zone (EEZ) of the Bay of Bengal from May 20 to July 23, aiming to give a boost to sea fish output. When it was first introduced in 2015, M Sayedul Hoque, Minister, MoFL spoke to the press and media with convincing justification and gave instruction that fishing shall remain prohibited during breeding season. Indeed, all Ministers of the MoFL were very much interested to implement the ban, which has been reflected in the following views:

- **M Sayedul Hoque**, Minister, MoFL(12.01.2014 -16.12.2017). "For the first time, sea fish and shrimp harvesting through commercial trawlers will be prohibited in the country's EEZ of the Bay of Bengal for 65 days from upcoming May 20 to July 23 considering the breeding of sea fishes and their conservation" (The Daily Star, May 5, 2015).
- **Narayan Chandra Chanda**, Minister, MoFL (03.01.2018 – 10.01.2019). "With the participation of the stakeholder a short, medium and long-term plan of action has been formulated for sustainable management of the fisheries resources at the Bay of Bengal" (The Independent, 9 January 2018).

- **Md Ashraf Ali Khan Khasru**, State Minister for the MoFL(07.01.2019 – 17.02.2020). "Resources will deplete one day if we do not use them sustainably. We should let fish grow and breed. Otherwise, we will have to suffer in the future." (BBC News, 20 May 2019).
- **S M Rezaul Karim**, Minister, MoFL (17.02.2020- till date). "If there is any negligence in discharging duty, it will be dealt with sternly and no one will be spared" (The Tribune, May 17th, 2020)

In 2019 when government decided to implement ban for both the industrial and artisanal fishing, the fishing community started protesting the policy. Vehicular movements on Dhaka-Chattogram highway were disrupted for two hours as fishermen put barricade at Sitakunda point of Chattagram on Sunday, June 9, 2019. Fishing Association have called on the Prime Minister to re-consider and ban and demanded compensation (The Daily Sun, 20 May 2019). Whereas, Honorable Prime Minister, Government of the People's Republic of Bangladesh was firm in her decision but approved the proposal of distribution of food support amongst the fishing community. The role of local administration and the local political leaders position was found similar.

Considering the position of Honorable Prime Minister, Ministers of the MoFL, local political leader and local administration, the ban has managed to capture high level political support. Therefore, it assisted in hierarchical execution of centrally defined policy intentions.

8.3 Policy incentive: Food support to the coastal fishermen under the social safety net

The MoFL published a press release mentioning that during the ban on sea fishing, 16,721 metric tons of VGF has been allocated for fishermen under the government's humanitarian food aid program. The sanction order directed to complete the regular lifting and distribution of rice among the registered fishermen by June 10. The rice cannot be issued to anyone other than the cardholder. However, in two phases, during the ban period, 2,99,135 ocean going fishermen family in the 68 upzilas under 14 districts of Chattogram, Barishal and Khulna Division and Chattogram mega city got 25695.37 metric ton rice at the rate of 40 kg per month per family. Distribution of food support scenario is shown in Table 4.

Table 4: Food support in the form of VGF to the sea going fishers to stay away from fishing during the ban period of 65 days from 20 May to 23 July.

Year	Fiscal year	VGF allocation no.	Number of districts	Number of Upazilas	VGF allocation		Comments
					Allocation (M. Ton)	Number of beneficiaries	
2019	2018-19	1 st installment	12	42	16591.36	414784	Per fishermen 86 kg of rice for 65 days ban period
	2019-20	2 nd installment	12	44	19356.31	414784	
2020	2019-20	1 st installment	12	44	23496.98	419589	
	2020-21	2 nd installment	12	52	11884.08	396136	
2021	2020-21	1 st installment	14	66	16721.06	298595	
	2021-22	2 nd installment	14	68	8974.05	299135	
Total					97023.84		

Source: DoF, 2022

One respondent from the DoF mentioned that they have been able to distribute VGF properly with right quantity and now taking initiative of enhancing the scope of VGF. The ongoing initiative intends to include ice factory and cocksheets factory labor, fishers working in the industrial trawler and at the same time to enhance amount of VGF. He thought that the amount of VGF is insufficient. Insufficient amount of VGF has been reflected in the views obtained from other respondents. However, one respondent thinks about searching other options aside from VGF, which may focus on alternative income generation activities. Views about this policy incentives are presented below:

Rice was distributed through the local administration and directly by the Union Parishad Chairman and Members. The fisherman who has a government registration card will only get this assistance. However, 86 kg rice is not sufficient at all. Fishers also need cash money. During the ban period, it is very difficult to arrange alternative livelihood arrangement through job, small business, agriculture for the fishers. (response from UNO in a coastal district).

Union Parishad's chairman usually distributes rice to the cardholder. However, this amount is not sufficient against the actual demand. Social Development Foundation is working with the fishers for bringing them under alternative income generating activity. But to me, it is very difficult. Because I have seen the fishers are not interested to change the profession (responses from UNO in a coastal district).

There are some initiatives for alternative income generation during the Mother Hilsha catch ban such as delivery of rickshaw to the fishers. For 65 days ban, this was not done. It is needed to transform their profession to reduce the pressure on marine fishing. Though fishers at the coastal belt those are

accustomed to fishing are not interested to divert but young generation can be motivated to adopt different profession (Respondent from the DoF).

Earlier, there were some irregularities in rice distribution. But due to having very serious attitude of the government about this issue, now distribution is done properly (Upazila Fisheries Officer in a coastal district).

Sometime, fishers attack the BCG officials, do not fear of bullet in the face of food necessity. Though the government gives 86 kg rice for staying away from fishing for 65 days, which is a very meager amount. However, this distribution needs to be done through proper card system and through digitalization to avoid any discrepancy (Respondent from BCG).

Based on the above, it is understood that the government's willingness is there to support the fishers by offering food support. But it is perceived as not sufficient by the beneficiary groups. However, there is no such mentionable mismatch in food distribution found. Rather rice distribution, card system, database creation, registration system development had positive impact on awareness raising among the community. Ultimately these workstreams assisted in bringing out better policy performance. However, income generating activities could not create an ushering image yet. May be due to these reasons, artisanal fishing and small subsistence fishing could not be stopped at hundred percent. Based on above empirical evidence, it is argued that policy incentive has moderate extent of effect on ban policy performance.

9. Law enforcement

During seasonal fishing restriction period, all kind of fishing (industrial and artisanal) is restricted in the Bangladesh waters. For law enforcement purpose, DoF, Marine Fisheries Office, District & Upazila Fisheries Offices work jointly with the District and Upazila administration, BCG, BN, Rapid Action Battalion (RAB), Bangladesh River Police, Border Guard Bangladesh and with Bangladesh Police in the coastal district in ensuring compliance with the rules and regulations. During the ban period, district and upazila administration conducted mobile court and inspected fish market & fish landing station in association with the BN, BCG and Bangladesh River Police. Law enforcement related activities during the year 2021 is presented in the following Table-5.

Table 5: Law Enforcement Related Activities during 2021

Activities	Number/ amount				Total
	Chattogram	Barishal	Khulna	MFO	
Mobile court	41	48	18	0	107
Ovijan/joint drive	1190	1258	288	3	2739
Landing station inspection	1100	759	218	63	2140
Fish Ghat inspection	2315	4369	450	120	7254
Warehouse inspection	3251	10295	3010	54	16610
Fish Market inspection	3175	6179	2381	87	11822
Seized Fish (M.ton)	38.55	3.45	0.00	0.45	42.45
Seized Net (lac meter)	92.21	18.20	2.92	0.08	113.41
Seized Net (number)	3184	1015	263	150	4612
Seized Vessel	36	39	4	24	103
Number of filed cases	24	28	5	0	57
Fine imposed (lac taka)	6.10	10.47	1.01	4.00	21.58
Imprisoned (number)	0	18	0	0	18

Source: DoF, 2022.

Bangladesh River Police conduct operation through its 19 units with 292 members during the fishing ban period to assist the government in complying rules and regulation. A comparative picture of their operation within the sea during 2019 and 2020 is presented in the Table-6.

Table 6: River Police Operation

Year	No. of operation	Seized net (lac m)	Seized fish (kg)	Case filed	Fine (lac tk)	Inspection (number)				
						Landing station	Fish Ghat	Fish Arot	Fish market	Ice factory
2020	12875	108.80	7628	49	14.20	1213	1971	3350	1970	2964
2019	356	18.68	3325	25	2.87	205	509	536	524	522

Source: Annual Administrative Report of Bangladesh River Police, 2020

Responses from law enforcement agencies about their law enforcement, capacity and constraints are presented below:

BN and BCG are the designated authority for protecting the maritime boundary and marine living and nonliving resources. We implement the policy of the government through arresting the violator and handed over them to the Fisheries Offices in the Coastal district. BCG acts mainly in the coastal region and BN acts in the deep sea region. At this moment, we have 15 country made ships and 4 imported ships from Italy and these have enhanced our capacity. All coast guard officials come from the BN and after few years they go back. As a result, BCG could not institutionalize the experience of Navy officials (responses from BCG official).

The government has engaged the navy, coast guard, river police and administration of coastal districts and sub-districts to pay special attention to enforce the fishing ban. However, still there is some artisanal fishing trawler found in the coastal areas. What needs to be done here is to enforce the law. However, DoF does not have any high speed vehicle, we need to rely on others especially on BCG. We do the joint operation with BCG and try to make the fishers compliant through imprisonment and imposing fines (responses from UNO of a coastal district).

We do surveillance along with BCG and Bangladesh River Police. Right now, our registration of artisanal fishers is ongoing. It is expected that it will be easier to control if all the fishers come under registration system. Right now, we do not have any high speed vehicle of our own. For better enforcement, fisheries department should be well equipped too. Besides, we need to have landing stations and checkpoint for becoming more effective in imposing ban (responses from Upazila Fisheries Officer in coastal district).

Based on above, law enforcing agencies are found very active they keep fishing community under their surveillance. That's why except few artisanal fishers in the remote area and except few law-violating type fishermen in long coastal belt, fishing ban was effective. Though some encroachment happens by neighboring countries trawler, but it is under continuous surveillance too. So, it can be said that extent of law enforcement is high in implementing the ban, which resulted near success policy output and satisfaction of law enforcement agencies.

10. Capacity of the Organization

Department of Fisheries, Bangladesh was first established in the undivided Bengal of the British India in 1908 and since then it has experienced many changes. After the independence of Bangladesh in 1971, the organization is renamed as Department of Fisheries (DoF) instead of Central Fisheries Department in April 1971 under the MoFL.

Later, in 1984, the Central Marine Fisheries Department is merged with the DoF as Marine Fisheries Wing. DoF, under the MoFL has the following Wings to render its services for the development of fisheries sector (Figure 6): a. Inland Fisheries, b. Marine Fisheries, c. Fisheries Resources Survey System (FRSS), d. Fish Inspection and Quality Control (FIQC) and e. Training. Marine Fisheries Office is established for conservation and management of marine fisheries resources, implementation of policies related to marine fish capture, preservation of marine environment, controlling of commercial and mechanized trawler and improvement of socio-economic situation of the fishermen of this vast area under EEZ.

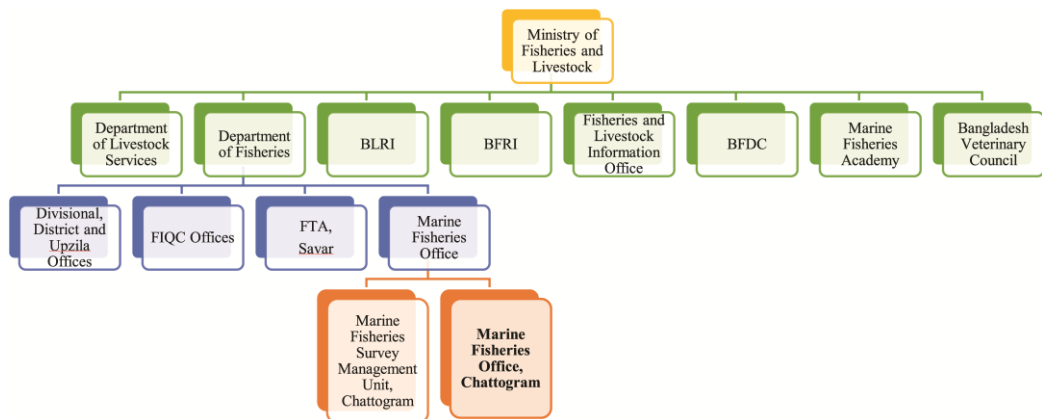


Figure 6: Organizational structure under the MoFL

Source: Authors' construction based on website information of MoFL & DoF

The organization DoF holds 5943 positions under the Director General (DG) along with one additional DG, seven Principal Scientific Officer/Directors, eight Divisional Deputy Directors, 64 District Fisheries Officers, 487 Senior/ Upazila Fisheries Officer and other staff members. During the FY 2018-19, the operational budget of the organization was 285.03 crore taka and development budget was 97.18 crore taka (Source: DoF Annual Report, 2019).

Key respondents' perception on capacity of these organizations, especially the DoF and its Marine Fisheries Office in implementing the policy ban was found as below:

DoF and Director (Marine) coordinate with other agencies including district administration for implementing the fishing ban. However, Marine Fisheries Office (MFO), Chattogram does not have sufficient logistic capacity in terms of inspection vehicles and speed boats. We have now only one inspection vehicle for all officers. Another vehicle of MFO is used by BN. (respondent from the MFO).

We do not have sufficient manpower and logistic support for implementing the ban. There is also budget limitation. In case of Mother Hilsha protection, there

were some budgetary provisions. But 65-days ban does not have such allocation whereas, we need to spend for campaign, additional fuel and for other additional charges. Most important point here to mention that the officers working in the coastal belt do not have any risk allowance. (Respondent from the DoF).

At the Upazila level, with only five people, some time it is very tough to manage the whole activity. We do have severe logistics shortage, insufficiency of Marine Fisheries Survey Vessel and Monitoring Control and Surveillance (MCS) Vessels. Besides, the Rules on the Marine Fisheries Act 2020 is yet to publish. We have deficiency in the land based survey, by which, we can get idea on how much fish are caught and brought to land. Right now, all artisanal boats are not registered. (Respondent from the DoF).

Industrial fishing has some landing facility in Chattogram and Khulna but Artisanal fishers use mainly shore side. These create an obstacle in off-loading for them. Artisanal fishers also require specific landing stations. Establishing quality landing station requires good harbor area, we have only river basin based harbor, which is mostly soil based. So, development of landing site and high quality floating jetty will be instrumental in utilizing BE in our development pathway (respondent from DoF).

All the fishing vessels are not under monitoring, control and surveillance (MCS) through vessel management system (VMS) and automated information system (AIS). If we can introduce AIS, vessels can be monitored staying in room during the ban period. In that case, we may not have to engage law enforcing agency as we are engaging now (respondent from DoF).

Nearly all respondents mentioned about manpower and logistic support shortage at the respective offices. They opined that it would have been easier to enforce the law if they had speedier vehicle. Besides, the number of officials is insufficient considering long coastlines.

It is evident that ban is implemented with deficient organizational capacity. This capacity deficiency could not surface up enough due to the support of other law enforcement agencies as there is high-level of political will. Besides, food support program and its relevant activities also assisted in creating awareness building and it had positive influence on complying the law. This study argues that if the organization was more capacitated, the implementation performance would have been better than the present situation. In these perspectives, it can be said that organizational capacity has moderate effect on policy performance.

11. Community Engagement

For increasing public awareness and community engagement, Minister, MoFL conducted inter-ministerial coordination meeting with the law enforcing agency, field administration, officers of different level of the implementing agency and the relevant stakeholders. Implementing agency also organized coordination meeting with the high officials of DoF, Marine Fisheries Office, Deputy Directors of the three Divisions, and with the 14 District Fisheries Officers of the coastal region. Initiative was taken to disseminate the ban period through publishing news in the National and local newspaper, TV scroll and special bulletin in the Bangladesh Betar. In 2021, a total of 18 awareness raising meeting and dissemination workshop is done in three coastal divisions and Chattogram Mega City (DoF, 2022).

To implement the fishing ban, district and upazila fisheries office of the coastal region circulated leaflet and poster, placed banner, conducted awareness development and information dissemination meeting in which background and justification were informed to ensure publicity prior to the ban period. This type of media briefing and information sharing was an integral part of the program. District Fisheries Officer, Political leaders and law enforcing agencies always did this briefing to get wider community informed about the ban. A newspaper quote reflecting government's communication with relevant stakeholders about the ban is presented below:

Fisheries and Livestock Minister M Sayedul Hoque told a press briefing at the Ministry. "After a long discussion with various stakeholders like the Marine Fisheries Association, the Marine Fisheries Academy, researchers, university professors and senior officials of the DoF, we've decided to ban sea fishing. The fish production will mark an extensive rise if 10-20 percent of sea fish could be conserved through the restriction period. We'll issue a circulation in this regard soon". (The Daily Star, May 5, 2015)

The sanction has been imposed in accordance with the Marine Fisheries Ordinance, 1983 to ensure smooth breeding of the sea fishes. To enforce the ban, the DoF has taken various measures, including airing special messages in radios and televisions, making the local fishermen aware of the ban, conducting drives on the sea and mobile courts in local markets, intensifying market monitoring and opening of a control room. Fisheries and livestock minister SM Rezaul Karim said his ministry wants to enforce the fishing ban effectively to ensure proper breeding of marine fishes, which would help increase marine fish stock (Prothom Alo English Desk Published: 19 May 2020)

District Fisheries Officer (DFO) in Patuakhali. "We held a meeting with the fishermen, fish traders and others concerned on April 24 at Mohipur fish landing station in Kalapara upazila to make them aware of the ban". (The Daily Star, May 20, 2019).

We have consulted with several fishers group, such as marine fishers group, coastal fishers group, and coastal aquaculture group. So far, we have developed ID card system for fishers in the coastal regions, which is around 6 lac. Half of them were applicable for VGF support. During those processes, they were informed well about the government decision. We are also focusing on co-management system (respondents from DoF).

We conducted several meetings with the stakeholder before fixing ban period. University, industry, fishermen everybody were consulted. Usually July-August are very turbulent sea and fishing is not done, April-May is the good season for catch. Therefore, few days from May and few days from July has been included in the ban period. We faced some agitation only in 2019 but there is no agitation in the year 2020 and 2021, rather fishing community cooperated with us (respondent from DoF).

Upazila Nirbahi Officer, Upazila Fisheries Officer, artisanal and industrial fishers also spoke about consultation with fishing community and engaging them in the drive through several activities. They also mentioned that local political representatives usually stay in most of the local level consultation meeting. Due to having well communication, attitude of the fishing community is changed. Some fisherfolks assisted law enforcing agencies by informing them about violation of other fisherfolks.

The study finds that fishing community at the coastal belt was well informed about timing, law enforcement, benefits and relevant other issues connected with fishing ban, which ultimately assisted in abiding law and not going for fishing during ban period and thus derived better policy performance. However, the infringement that has been found may not be regarded as due to not having community engagement. Rather pervasive psychological state of law breaking of fishers, remoteness of the location and becoming optimistic about fishing without presence of law enforcing agencies, poverty and urge for generating income, influence of opportunist people for breaking the law might be the reasons for going to fishing by few artisanal trawlers. In a nutshell, higher extent of community engagement assisted in securing nearly successful policy performance.

11. Discussion and Policy Recommendation

Success and non-success is the extreme end of a continuum of policy performance (Figure-7). Here, based on empirical evidence on achievement of policy design goals, it can be articulated as nearly successful but not a complete success. The policy outcome indicates some achievement but there are reservations too. Finally, the stakeholders are found in some sort of satisfaction whereas few of them found relatively conservative. Based on above circumstances, the extent of policy performance can be termed as 'nearly successful'.

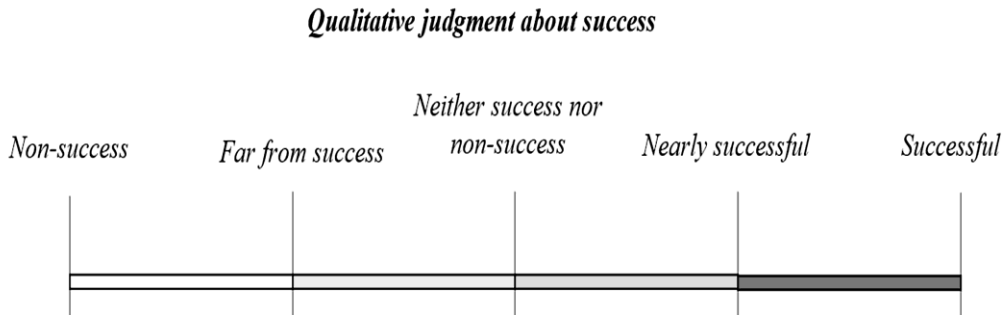


Figure-7: Qualitative judgment scale of success and non-success

Source: Authors' own construction

On the other hand, extent of effect of political commitment, community engagement and law enforcement on policy performance is found high. But policy incentive and organizational capacity have found moderate extent of effect on policy performance. The study finds policy performance as 'nearly successful' and this implies having an implementation deficit. Based on empirical evidence, this study argues that moderate extent of policy incentive and moderate extent of organizational capacity are mainly responsible for this implementation deficit. Therefore, to overcome this implementation deficit, it is important to look at improving organizational capacity and deploying more effective policy incentive. In case of policy incentive, the study finds that moderate extent mainly derives from insufficiency of food support compared to real need, low level of alternative income generating activity and few unexpected perceptions on distribution. On the other hand, moderate extent of organizational capacity mainly derives from lack of availability of sufficient budget, manpower, logistic support, required infrastructure and technical capacity of the implementing agency, i.e., in the DoF and Marine Fisheries Office, Chattogram. Therefore, to secure successful policy implementation, there is requirement of addressing policy incentive factor and organizational capacity factor.

12. Policy Recommendations

For addressing organizational capacity and policy incentive, following policy recommendations are articulated:

1. Need to develop Marine Fisheries Office as more competent authority with sufficient manpower and logistic support as if they can successfully implement the Bangladesh Marine Fisheries Management Plan: Part 1: Industrial and Part 2: Artisanal.

2. There is a requirement for introducing One-Stop Service Shop at the Marine Fisheries Office for fishing community in reducing their cost and in coping with the challenge to be faced after transition from LDC status to developing country status in 2026.
3. There is urgent requirement of infrastructure development for fish landing stations for artisanal fishing boats. It is important to conduct land based survey and feasibility study for this purpose and take preparation for small scale harbor development to cater to the artisanal ships.
4. Strengthening Monitoring Control and Surveillance (MCS) System through Vessel Tracking Monitoring System (VTMS/VMS), Automatic Information System (AIS) for both industrial trawler and artisanal trawler should be another focus of DoF and Marine Fisheries Office, Chattogram.
5. There is requirement of establishing surveillance check posts at the coastal areas. Though the initiative has been started with the ‘Sustainable Coastal and Marine Fisheries (SCMF) Project’, it needs to be expedited.
6. Government may think about offering some cash incentive instead of offering food support. However, providing cash incentive for long time may not be practically possible considering the future uncertainty and budgetary pressure. Therefore, need to give focus on Fisheries focused Income Generating Activities as if fisherfolks may get jobs easily in the fishing sector with higher payment.
7. There should have more engagement and partnership with the community and private sector. Co-management system can be considered as one important option. Partnership with the private sector can be another option for marine fisheries resources management in sustainable manner.
8. Development of fisheries value chain should be the target. For the next 20 years, fisheries sector is expected to be the major driving force in utilizing BE. Therefore, need more focus on quality catch, scientific preservation method, quality control, standard packaging, right transportation facility, marketing/exporting and market diversification.

13. CONCLUSION

Government of Bangladesh through the Ministry of Fisheries and Livestock and the Department of Fisheries has taken several Blue Economy strategies on a short, medium and long-term basis. Imposition of the seasonal fishing ban to protect the breeding of

the marine fisheries is considered as one of the short-term strategies for the conservation of marine fisheries resources. It is expected that the study findings will be of great policy importance in the effective implementation of ban in the upcoming years. This study is conducted with qualitative research approach. A mixed method approach with quantitative data would have strengthened research finding better. As this study identified fisheries-focused income-generating activities of the artisanal fishing community as one of the major policy recommendations, future research should be directed to understanding fishing societies' capability and mapping the possibility of incorporating them into the fishing-focused income generating activities within the purview of the co-management approach.

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