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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**STAKEHOLDER ENGAGEMENT IN MARINE
SPATIAL PLANNING OF BANGLADESH**

By

MOHAMMAD SAMSUL MANNAN

Bangladesh

A dissertation submitted to the World Maritime University in partial
Fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE

In

MARITIME AFFAIRS

(OCEAN SUSTAINABILITY, GOVERNANCE & MANAGEMENT)

2019

Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.



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Acknowledgment

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Abstract

Title of dissertation: **Stakeholder Engagement In Marine Spatial Planning Of Bangladesh.**

Degree: **Master of Science**

The main purpose of this dissertation is to provide an overview of the maritime stakeholders in Bangladesh and better understand their engagement process, roles, relationship and conflicts in order to facilitate the government initiative about MSP in Bangladesh. The expected outcome of the study is to discover the existing maritime stakeholders, ways to engage with them early in the MSP process, the competent authority for coordinating them and techniques to resolve existing conflicts.

After the boundary delimitation with neighboring countries, Bangladesh is in a process of managing its maritime resources in a sustainable manner to support economic growth. Subsequently, Bangladesh 7th five-year plan recognized MSP as a tool for managing maritime resources. Therefore, this study serves as a timely research about stakeholders and their conflict in the MSP effort of Bangladesh.

This research employs qualitative semi-structured interviews to identify stakeholders and their engagement options as well as their conflicts and ways of resolving those conflicts. Content analysis method was used for understanding the inner meaning of the textual material including government documents, articles, and policies. The concluding chapters examine the result of primary and secondary data and recommend some ways of engaging stakeholders and techniques for resolving conflicts among stakeholders in the MSP process. In addition, this research identifies the potential stakeholders and a competent authority for coordinating them in the MSP process.

KEYWORDS: MSP, Stakeholders, engagement, conflicts, competent authority, 7th five-year plan.

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List of abbreviations

ABNJ	Area beyond national jurisdiction.
BADC	Bangladesh agricultural development corporation.
BARI	Bangladesh Agricultural Research Institute.
BBNJ	Biodiversity beyond nation jurisdiction
BEC	Blue economy cell
BEZA	Bangladesh economic zone authorities.
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BMA	Bangladesh marine academy
BMFA	Bangladesh marine fisheries academy
BOBP	Bay of Bengal program
BOBLME	Bay of Bengal large marine ecosystem
BSC	Bangladesh shipping corporation
BSMMRU	Bongobondhu Shiek Mujibur Rahman maritime university.
BWM	Ballast water management convention
CBD	Convention on biological diversity
DOS	Department of shipping
DOF	Department of fisheries
DOT	Department of tourism
DOE	Department of environment
EBM	Ecosystem-based management
ECA	Ecologically critical area
EEZ	Exclusive economic zone
ESA	Ecologically sensitive area
FAO	Food and agricultural organization
FSRU	Floating Storage Regasification Unit
FYP	Five-year plan
GDP	Gross domestic product
HELCOM	Baltic Marine Environment Protection Commission
ICZM	Integrated coastal zoning management
ICOM	Integrated coastal and ocean management
IOTC	Indian ocean tuna commission
IUU	Illegal unreported and unregulated
IMED	Implementation monitoring and evaluation division.
IMO	International maritime organization
IMSF	Institute of marine science and fisheries
ICJ	International court of justice
IOC	International oceanographic commission

JICA	Japan International Cooperation Agency
LNG	Liquefied natural gas
LPG	Liquefied petroleum gas
MARPOL	International convention on marine pollution
MOS	Ministry of shipping
MOF	Ministry of fisheries
MOFA	Ministry of foreign affairs
MOE	Ministry of environment
MOCAT	Ministry of civil aviation and tourism
MOI	Ministry of industry
MPEMR	Ministry of power , energy and mineral resources
MSP	Marine spatial planning
NSDS	National
NGO	Non-governmental organization
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PDO	Project development office
RADAR	Radio Detection And Ranging.
RMG	Ready-made garment
SDG	Sustainable development goals
SONG	Swatch of no ground
SREDA	Sustainable and renewable energy development authority
UN	United nation
UNCLOS	United nation convention on law of the sea
UNEP	United nation
UNFCC	United Nations Framework Convention on Climate Change
UNESCO	United Nations Educational, Scientific and Cultural Organization
WAPRO	Water resources planning organization
WMS	Western marine shipyard
WMU	World maritime university

1.0 Introduction

In recent years, marine spatial planning (MSP) has become a popular tool for managing ocean uses and resolving conflicts among ocean users (Douvere, 2008). According to UNESCO-IOC “MSP is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process” (Ehler & Douvere, 2009). According to Pomeroy and Douvere, “MSP is a way of improving decision making and delivering an ecosystem-based approach to managing human activities in the marine environment” (Pomeroy & Douvere, 2008). Thus MSP is a planning process to govern, control and manage human activities in the maritime space to achieve social, economic and environmental objectives.

To date, 20 countries have implemented MSP and by 2030 at least one-third of the surface area of the world’s EEZ will have government-approved MSP (Hassan & Alam, 2019). Being a coastal country, Bangladesh is still in the primary stage to manage its maritime resources (Hussain, Failler, Karim, & Alam, 2018). Thus to manage its resources and to achieve sustainable blue growth, MSP can be used as a tool in Bangladesh (Hossain et al., 2014). Therefore, the country’s 7th five-year plan (FYP-2016) clearly states that Bangladesh wishes to adopt MSP in its maritime area including EEZ, territorial water, and continental shelf (Islam, Mahmudul & Shamsuddoha, 2018). However, there are multitudes of challenges to start the MSP process, which include identifying stakeholders and their conflicts, their engagement in the process, and identifying an authority for their early engagement in the process (Hossain et al., 2014).

1.1 Purpose and Research question

Twenty ministries are involved in Bangladesh performing sectoral management of marine living and non-living resources (Hossain et al., 2014). Fishing and shipping are the oldest sectors in the maritime field in Bangladesh. Therefore, these two sectors are well developed in Bangladesh and provide major stakeholders in the maritime area (Patil et al., 2018). However, new sectors including oil and gas exploration, coastal tourism, salt production, and renewable energy are still struggling to find their stake and are in conflict with each other in the maritime area of Bangladesh (Shamsuzzaman & Islam, 2018).

Therefore, the main purpose of this dissertation is to provide an overview of the maritime stakeholders in Bangladesh and better understand their engagement process, roles, relationship and conflicts in order to facilitate the government initiative about the MSP effort of Bangladesh. Thus this dissertation aims to answer the following questions.

1. Who are the key stakeholders in the MSP effort of Bangladesh?
2. Who could be a competent authority for coordinating the MSP process?
3. How can stakeholders be engaged early in the MSP process?
4. Is there any interest conflicts among stakeholders and if so, how could these be addressed?

2.0 Methodology

In this chapter, the methodology and the chosen design of the research will be discussed.

2.1 Appropriateness of research design

This research is a qualitative research based on both syntheses of secondary information and primary data. Qualitative research is a process of naturalistic inquiry that seeks an in-depth understanding of social phenomena within their natural setting and seeks to justify underlying reasons, opinions, and motivations (Drury, Homewood, & Randall, 2011). Unlike quantitative research, qualitative research method allows describing occurrences based on the point of view of the participants which grant ways to explore multiple realities and instigate holistic understanding of the phenomenon under research (Young et al., 2018). As Bangladesh government is still at the policy-making level of the MSP effort, there are scanty data about different maritime sectors. Therefore, quantitative analysis including regression for this dissertation was not pursued. This qualitative research is intended to help Bangladesh to formulate a policy about MSP, engage stakeholders in the MSP process and provide recommendations to resolve the existing conflict among stakeholders in the MSP effort. In addition, MSP is a new concept for a developing country like Bangladesh, so only a few people know about MSP (Sarker et al., 2018). Thus, it was difficult to obtain enough information from primary data (interviews), which would help to answer the research questions. Therefore, both secondary and primary data have been used to get the answers of the research questions.

2.2 Collection of secondary data

Secondary data is data collected by someone other than the user (Yates, Clarke, & Thurstan, 2019). To collect secondary data, different policy documents, scholarly articles,

and various government websites were reviewed. In addition, data from various government documents was collected, including the country's 7th five-year plan (FYP-2016), national sustainable development strategies (NSDS), and documents from different ministries. The manual categorization method was used to select the scholarly article (see Figure1). Google scholar was used to find the articles about MSP. Thus 419 articles related to MSP and Ocean governance were found. Considering the journal impact factor, h-index and publishing year, 50 articles among those articles, related to MSP and stakeholders engagement in the MSP effort in Bangladesh (Figure 1) were shortlisted. Since Bangladesh is still in the early stage of ocean governance, only 8 articles about MSP and 12 articles about blue economy initiatives in Bangladesh were found. It took almost 4 weeks in April to collect secondary data.

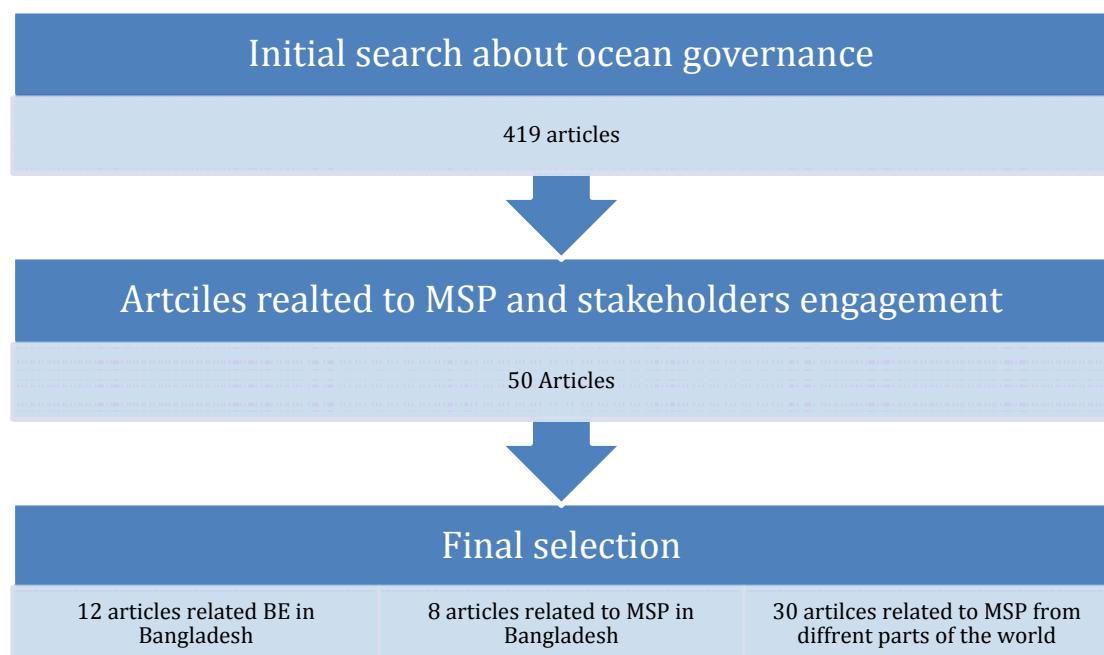


Figure 1: Manual categorization method of selecting article.

2.3 Primary data collection

Primary data is the data collected by the researcher himself (Drury, Homewood, & Randall, 2011). In qualitative research, interview is the most commonly used technique to collect primary data (Young et al., 2018). To collect primary data, a total of 16 semi-structured interviews were conducted, including interviews from government officials, policymakers, researchers, businessmen, ocean users, and entrepreneur. Figure 2 shows the main stages of the interview process.



Figure 2: Basic stages in the interview process. Adapted from Young et al., 2018.

2.4 Appropriateness of semi-structured interview method

To collect primary data, researchers use 3 types of interview techniques (see Figure 3) including structured, semi-structured and unstructured interview (Drury, Homewood, & Randall, 2011).

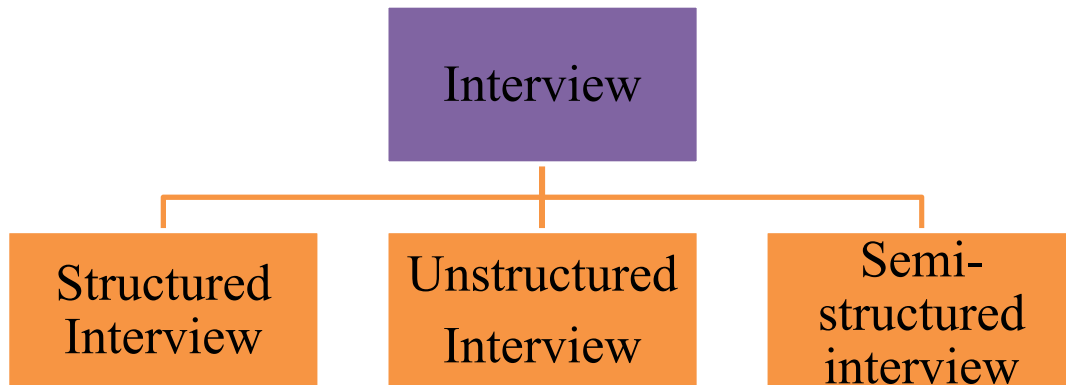


Figure 3: Interview techniques used by the researcher.

The semi-structured interview is a verbal exchange where one person, the interviewer collects information respectfully from another person, the interviewee or respondent through a series of questions (Gopnik et al., 2012). In semi-structured interviews, a standard set of guiding questions were used. These guiding questions were approved by WMU research ethics committee. Nevertheless, when an interesting or new line of inquiry developed during the interview process, additional questions about the topic were asked. Thus the semi-structured interview technique made it possible to go in-depth about a particular topic. This flexibility of asking additional questions helped a lot to get additional information. Whereas in the structured and unstructured interview method, there was not that much of flexibility of asking additional questions (Young et al., 2014). Therefore, the semi-structured interview method was used to collect primary data.

2.5 Timing and method of contacting interviewee

All the interviews were conducted face to face in July. To conduct these interviews the researcher went to different districts of Bangladesh including Chittagong, Dhaka and Cox's Bazar. All the interviews took place in the interviewee's office. As most of the interviewees were high government official, an appointment had to be made before going to their offices. The WMU Gmail account has been used to make appointment since February, 2019. Once the interviewees replied to the mail, then they were contacted by

mobile phone to confirm the interview timing. The interviews were targeted for thirty minutes. However, most of the interviews lasted for one hour. These interviews provided real-life answers and real-life scenarios about maritime issues in Bangladesh.

2.6 Method of selecting interviewees

While selecting the interviewees, the researcher tried to select people from all the major maritime stakeholders of Bangladesh. Bangladesh is still in the initial stage of planning MSP, so only a few people know about the MSP. Thus the focus was on individuals who have a professional role in the ocean governance of Bangladesh. The researcher read the articles published by different ministries about MSP and then contacted the authors of those articles through email. Some of them replied, appointments were made to conduct interviews. In addition, policymakers of different government departments and the private sector including fisheries, ports, shipping, tourism, and hydrocarbon extraction sector were interviewed. As they are well experienced in their sectors, they provided a lot of information. NGOs were approached, but NGOs in Bangladesh are more concerned about Rohingya refugee rehabilitation issue. Thus their data are not suitable for this dissertation. Therefore, there were no interviews with any NGOs.

2.7 Questionnaire and the issues of the questionnaire

While conducting the interview, the interviewees were asked about their interests, stakes and their prospects in the maritime sector in Bangladesh. Additionally, they were asked about their challenges and conflict with the other sectors in Bangladesh.

2.8 Method of storing data and Transcribing

Two devices for storing data were used, including the iPad for taking videos and Samsung Galaxy S-7 phone for recording purposes. While conducting the interviews, the dissertation notebook was used for taking important notes. After completion of every interview, the notes were reviewed and annotated (St. John, Freya A. V, Keane, Jones,

Milner & Gulland, & Cadotte, 2014). Transcribing the interviews was laborious work as it took 4-6 hours to transcribe every interview. After transcribing the interviews, a separate folder was created to store the video footage, recording and transcribed interviews.

2.9 Coding and Analyzing

Coding is the process of identifying interesting and silent features of the text within a text that relates to the research question or research objectives (St. John et al., 2014). After transcribing the interviews, Coding of the interview transcript was done by Nvivo software which helped in analyzing the data. For every interview transcript, many codes were created. Then all the codes were merged and combined to form an overarching theme which was made according to the research question. According to the research question, four themes were identified, which include identifying the stakeholders, way of engaging them early in the process, identifying the competent authority for coordinating them and identifying the existing major conflicts and way of resolving these major conflicts. Under a particular theme, all the coded data were gathered by Nvivo software. Thus different opinions of different respondents about that particular theme were obtained. The whole process was repeated for each theme. Finally, all the themes were combined by Nvivo software for developing a broader concept. For secondary data analysis, the content analysis method was used, which is a research tool for interpreting and understanding the inner meaning of the textual material, articles, and graphics (Shamsuzzaman & Islam, 2018). The content analysis method helped to understand the inner meaning of policy documents including National Sustainable Development Strategy (NDDS), 7th Five Year Plan (FYP-2016) and coastal policy- 2005. Figure 4 shows the steps of interview coding and analyzing.

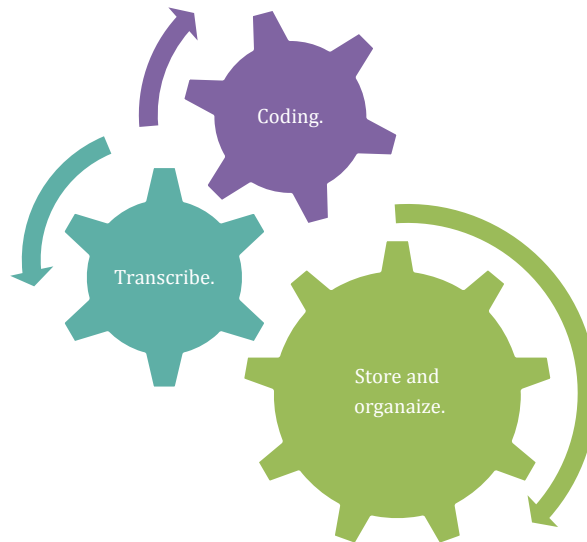


Figure 4: Steps of interview coding and analyzing.

2.10 Ethical considerations:

Researcher application for ethical approval was based on the careful understanding of ethical concerns that could emerge during the study. The Interview stage was initiated only after receiving approval from the WMU Research Ethics Committee (REC). One of the important ethical considerations in the study was the use of informed consent. The consent was signed only after participants read the form and confirmation received of their understanding. The interview data protection process in line with university guidelines was discussed prior to taking the interview. The researcher ensured that the data collected from the participants could only be accessed by the researcher, protected from unauthorized use and sharing without the approval from the participants. Confidentiality is the third ethical consideration that protects the identity of the participants, observed in this study. Considering identity as a central ethical issue which could harm the participant, the researcher ensured participants that they will be anonymous in the research. Thus the respondents are named as R1, R2, R3, and so on. Furthermore, participants were appraised on their rights not to answer or withdraw consent during the interview.

2.10 Limitations

Adequate information from fisheries and the shipping sector was collected since these two sectors are well developed in Bangladesh. However, there was insufficient information about new maritime sectors including tourism, oil and gas extraction, and marine environment protection. These new sectors are still struggling to find their stake in the maritime area of Bangladesh and they have identity crisis which is explained further in chapter 4 (Hossain et al., 2014). Thus, they could not provide enough information for the research. Furthermore, if the question had been asked from a different angle, the results could have been different. However, the focus of the dissertation is to provide an overview of the maritime stakeholders in Bangladesh and better understand their engagement process, roles, relationship and conflicts in order to facilitate the government initiative about MSP in Bangladesh. Therefore, the scope of study has been confined on gathering information about stakeholders and their engagement in the MSP process as well as their conflicts and ways of resolving those conflicts.

However, after completion of the interviews, to show the total structure of the dissertation, a flow chart was made (see Figure 5) According to the flowchart, Chapters 3, 4 and 5 will provide empirical findings about the topic, which includes background information (Chapter 3) and potential and challenges of MSP (Chapter 4), and major maritime sectors in Bangladesh (Chapter 5). In Chapter 6, primary data (Interview) will be analyzed and in Chapter 7, there will be discussion and recommendations. Finally, Chapter 8 will summarize and conclude the dissertation.

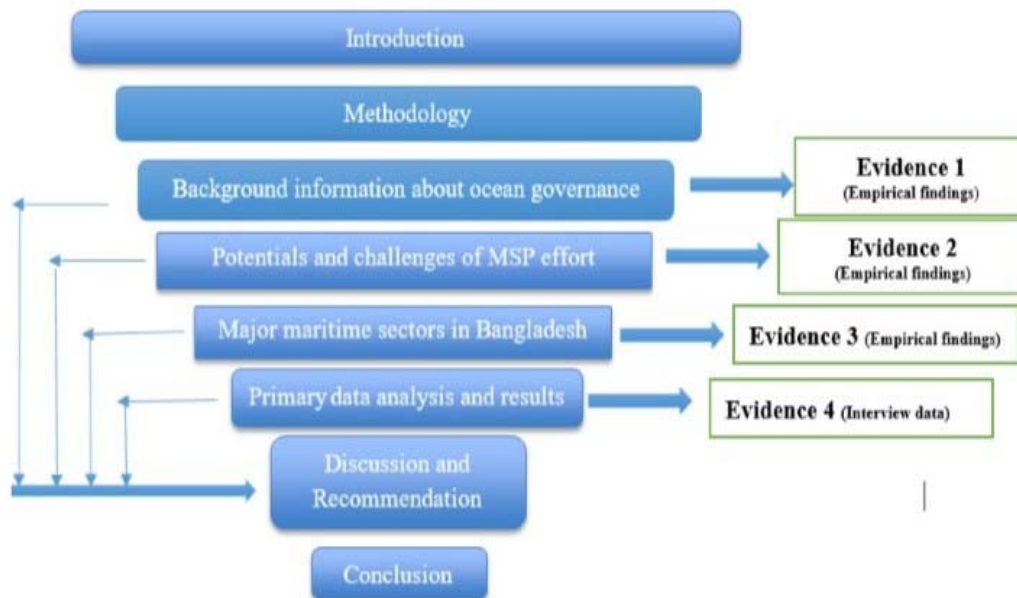


Figure 5: Flow Chart of the study.

3.0 Background information about Ocean governance in Bangladesh

This chapter aims to provide background information about ocean governance in Bangladesh. In this chapter, various issues about ocean governance will be discussed, including boundary delimitation, the maritime area, the legal framework, plans and strategy for ocean governance of Bangladesh.

3.1 Boundary delimitation

In 2012, Bangladesh has settled down its maritime boundary with its neighboring country Myanmar through the ICJ verdict and in 2014, it settled its maritime boundary with India through a negotiation process (Islam et al., 2017). Through this boundary settlement, Bangladesh has achieved full jurisdiction over its maritime area (see Figure 6) full of natural resources and hydrocarbon (Sarker et al., 2018). After the settlement of boundary disputes with its neighboring countries, Bangladesh is trying to manage its marine living and nonliving resources in the maritime area (Islam & Shamsuddoha, 2018). Thus honorable Prime Minister of Bangladesh, Sheik Hasina once said “*Bluewater is a heritage for our people. We are committed to conserving and protecting our Bay, as a time-honored responsibility*”. (Hussain, Failer, Karim, & Alam, 2018). This statement shows that political will and desperation of the Bangladesh government is at the peak level for ocean governance.

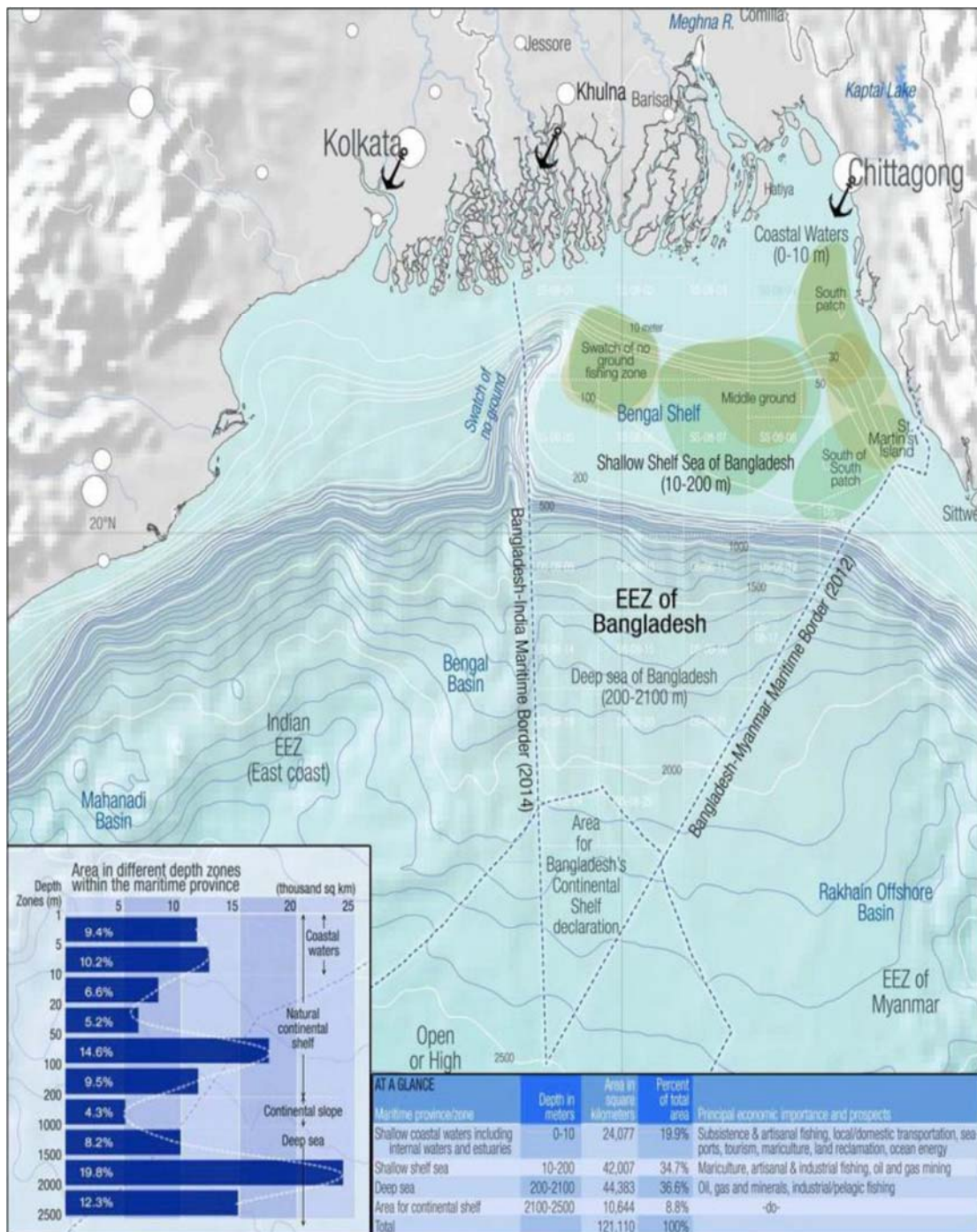


Figure 6: Maritime area of Bangladesh. (Source: www.mofa.gov.bd)

3.2 Maritime area of Bangladesh

Bangladesh is in the northeast corner of the Bay of Bengal and blessed with the Bay of Bengal large marine ecosystem (BOBLME) (Sabur, 2012). The total maritime area of Bangladesh is estimated to be 119000 sq. km, with an extended continental shelf of about 37000 sq. km. The coastline of Bangladesh extends up to 710 km, which is divided into three major coastal zones including south-east, central and southwest part (see Figure 7) (Sarker et al., 2018).

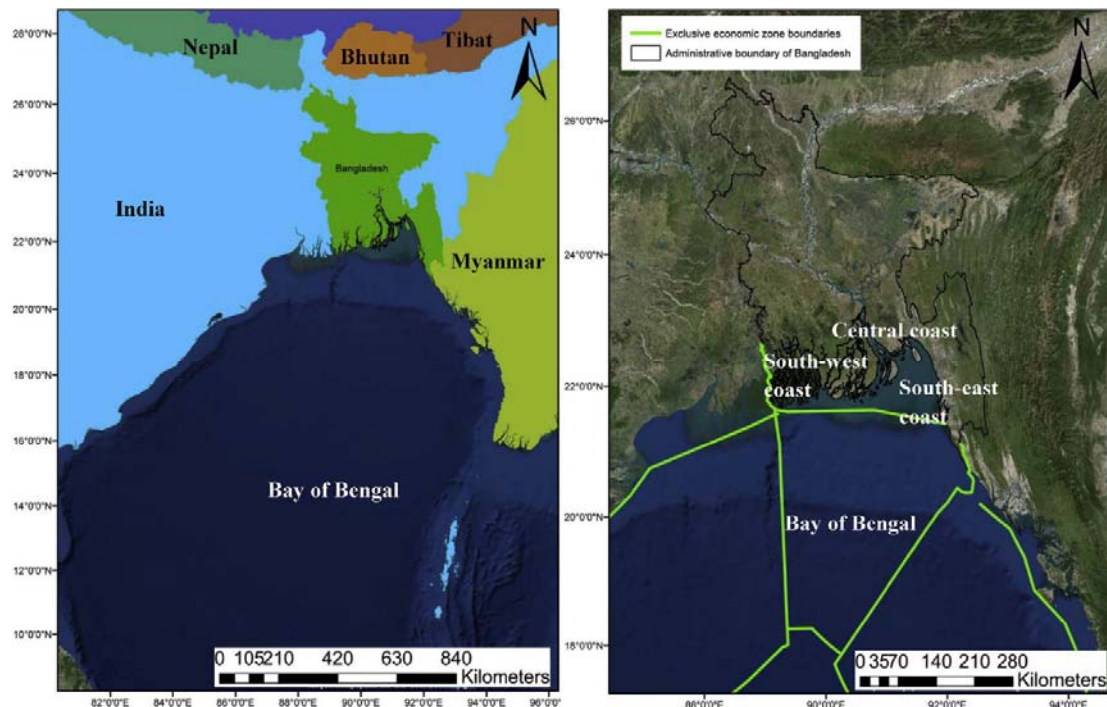


Figure 7: Continental view and geographical location of Bangladesh coast. Source: Sarker et al., 2018

However, a small part of the continental shelf of Bangladesh is overlapped by the EEZ of India and Myanmar, which is often termed as grey zone (see Figure 8), where the resources in the subsoil belong to Bangladesh but the resources in the water column belong to India and Myanmar. This zone created a new dispute in the Bay of Bengal (Islam et al., 2017).

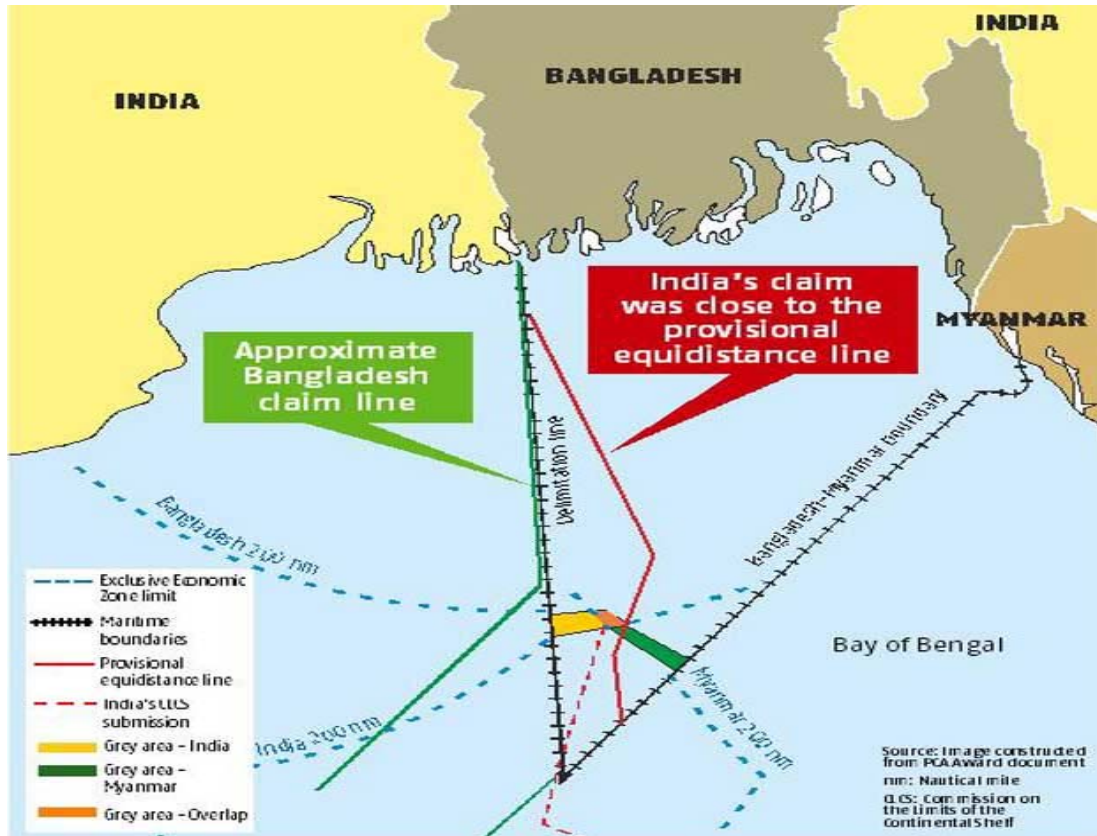


Figure 8: Grey zone in the maritime area of Bangladesh. Source: www.mofa.gov.bd

3.3 Maritime sectors in Bangladesh

Through two workshops at the national level in 2014 and 2017, the Ministry of Foreign Affairs (MOFA) has identified 26 sectors to exploit the potentials of the blue economy in Bangladesh (MOFA, 2018). Unfortunately, almost all the sectors remained untapped for lack of proper initiatives (Rahman, 2017). These sectors include shipping, coastal shipping, seaports, passenger ferry services, inland waterway transports, shipbuilding, ship recycling industries, fishery, aquaculture, coastal aquaculture and marine culture, marine acquaintance products, marine biotechnology, oil and gas, sea salt production, ocean renewable energy, tidal energy, blue energy (osmosis) and biomass, aggregate

mining (sand, gravel etc), marine mineral mining, coastal tourism, recreational water sports, yachting and marines, cruise tourism, coastal protection-artificial islands-greening coastal belts, human resource development, marine surveillance and marine special planning (Islam & Shamsuddoha, 2018).



Figure 9: Major sectors related to the blue economy of Bangladesh. Source: www.mofa.gov.bd.

Thus, to manage these ocean-based economic activities, the Bangladesh government is trying to formulate policy which will help Bangladesh to achieve UN sustainable development goals (SDGs) (Hossain et al., 2014).

3.4 Legal Framework for ocean governance

3.4.1 International and regional conventions and obligation

Bangladesh is a signatory of various international conventions including UNCLOS, CBD, BWM, MARPOL, the Hong Kong Convention, the Ramsar Convention and the UNEP Regional Seas Convention (Rahman & Mahmud, 2018). In order to ensure compliance, national and international regulations must be harmonized (Hanif, Siddik, Chaklader, Nahar, & Mahmud, 2015). Unfortunately, there is no regulation to address and ensure the compliance of international law (Patil et al., 2018). However, the Bangladesh government

is in the process of making a new act, namely the IMO Convention Act, which will address all the issues in consistence with national legislation. Thus, the IMO Convention Act will serve as a single uniform policy and law to address all maritime issues affecting everything concerning IMO Conventions and related UN and international conventions (Rahman, 2017).

3.4.2 National policies, acts, and rules:

For maritime and ocean governance, Bangladesh government has adopted various legislation and regulatory framework. These includes the Territorial Water and Maritime Zones Act, Coastal Zone Policy-2005, Coastal Development Strategy-2006, Port Act 2006, Arbitration Act 2016, Merchant Ship Ordinance of 1983, Flag Ordinance Convention 1982, Inland Shipping Ordinance 1976, Protection and Conservation of Fish Act of 1950, Marine Fisheries Ordinance and Rules 1983, Wild Conservation Act -2002, Forest Act -1927, Provision of Ecologically Critical Area (ECA) Regulation 1995, the Bangladesh Petroleum Act-1974, National Energy Policy-2004, Bangladesh Water Policy-1999, Bangladesh Water Act-2013 (Shamsuzzaman & Islam, 2018). Most of the legislation and regulations for ocean and marine governance and management were enacted a long time ago and have been amended to keep pace with changing circumstances. In the context of rapid changes in social, economic, cultural and environmental circumstances, the legal framework now appears insufficient for tackling new challenges (Islam & Wahab, 2005). Thus, an update of these legal instruments is a necessity. However, different departments including the Department of Shipping (DOS) and Fisheries (DOF) are trying to make a new shipping and fisheries act (Islam et al., 2017). Table 1 lists the institutions, laws, and policies, that are directly or indirectly related to coastal, and ocean management in Bangladesh (Shamsuzzaman & Islam, 2018).

Table 1: List of Institutions, laws & Policies related to coastal & Ocean management (Source bd.gov web site) (Shamsuzzaman & Islam, 2018)

SI	Name of the Ministry	Related Public Agencies	List of Policy/Act etc.
01	Ministry of Power, Energy, and Mineral Resources	SREDA, Petro Bangla, BPC, Bureau of Mineral Development	National Energy Policy 2005, Renewable Energy Policy 2008, Action Plan for Energy Efficiency Conservation 2013
02	Ministry of Industries	National Productivity Organization, Bangladesh Sugar and Food Industry Corporation	National Industry Policy 2016, National Salt Policy 2016
03	Ministry of Agriculture	Bangladesh Agricultural Development Corporation, Soil Resources Development Institute, Bangladesh Agricultural Research Institute, Bangladesh Jute Research Institute	National Agriculture Policy 2018, National Organic Agriculture Policy 2016
04	Ministry of Local Government and Rural Development and Co-operative	Bangladesh Rural Development Board	National Rural Development Policy 2001,
05	Ministry of Civil Aviation and Tourism	Bangladesh Tourism Corporation, Bangladesh Tourism Board	National Tourism Policy 2010,
06	Ministry of Fisheries and Livestock	Department of Fisheries, Bangladesh Fisheries Research Institute, Bangladesh Fisheries Development Corporation, Marine Fisheries Academy	National Shrimp Policy, 2014, National Fisheries Policy, 1998
07	Ministry of Water Resources	Bangladesh Water Development Board, River Research Institute,	Coastal Zone Policy 2005, National Water Policy 1999, Bangladesh Water Acts 2013
08	Ministry of Environment and Forest	Bangladesh Climate Change Trust, Department of Environment, Department of Forest, Bangladesh Forest Research Institute	National Forest Policy 2016, National Environment Policy, National Biodiversity Rule 2012
09	Ministry of Shipping	Department of Shipping, Bangladesh shipping Corporation, Chittagong Port Authority, Mongla Port Authority, Payra Port Authority	National Shipping Policy 2000
10	Ministry of Science and Technology	National Institute of Biotechnology, Bangladesh Oceanographic Research Institute	National Biotechnology Policy 2012, Bangladesh Oceanographic Research Institute Rule 2015
11	Ministry of Disaster Management and Relief	Department of Disaster Management	National Plan for Disaster Management 2010-2015, Disaster Management Rules 2014
13	Ministry of Foreign Affairs	Maritime Affairs Unit	Bangladesh Foreign Policy
14	Ministry of Home Affairs	Bangladesh Coast Guard	Citizen Charter of Coast Guard
15	Ministry of Land	Land Reformation Board	National Land Policy 2016
16	Prime Minister Office	SDG Cell, BEZA	BEZA Law, SDG Mapping
17	Ministry of Planning	Planning Commission, IMED,	National Sustainable Development Strategy, National Social Protection Strategy (NSPS), 7 th Five Year Plan

3.4.3 Legal enforcement authority: Bangladesh Coast guard

Bangladesh coastguard is the designated responsible authority for protecting the maritime boundary and marine living and nonliving resources (Sarker et al., 2018). However, due to lack of capacity, the coast guard plays a minimum role in protecting the maritime boundary. Their surveillance is confined to nearby coastal areas only (Shamsuzzaman & Islam, 2018). There are seasonal restrictions for fishing in June and July, which means any kind of fishing is restricted during that period in the Bangladesh waters. In this period, the Bangladesh coast guard must be vigilant to resist illegal, unreported and unregulated (IUU) fishing. However in reality, many fishing vessels from India and Myanmar come to the Bangladesh waters and fish during the fishing ban period (Islam et al., 2017).

3.5 Authority for policymaking: Blue Economy Cell (BEC)

In January 2017, Blue Economy Cell (BEC) was created under the Energy and Mineral Resources Division of the Ministry of Power, Energy, and Mineral Resources (MOPEMR) to make a policy and govern the newly achieved maritime area (Islam & Shamsuddoha, 2018). Nevertheless, the activities of the BEC remained confined to holding occasional meetings, as the administrative body is now inadequately equipped with a few officials sent on deputation. Amid the dismal situation, the Parliamentary Standing Committee on Power, Energy, and Mineral Resources Ministry recommended to upgrade the BEC as an authority with permanent setup, but the recommendation has gone unheeded (MOFA, 2018).

3.6 Plans and Strategy for Ocean governance

3.6.1 National Sustainable development Strategy (NSDS)

In November 2008, under the guideline of UNEP, the department of environment has prepared and published the NSDS. The vision of NSDS is to “Ensure sustainable economic growth, environmental protection, and Social justice.” (Rahman, Saha, Islam, Shen, & Bodrud-Doza, 2017). NSDS has identified four strategic priority areas including sustainable economic growth, agriculture and rural development, social security and protection, environment and natural resource management (Sabur, 2012). Being a coastal country, the sustainable economic growth along with environment and natural resource management depends upon the sustainable use and management of the ocean area. For this reason, Bangladesh government is searching for a tool to manage the ocean area to achieve the vision of NSDS (Islam et al., 2017).

3.6.2 Countries 7th five-year plan

For every five years, the Bangladesh government has been publishing a plan for development of the whole country. In 2015, the Bangladesh government has published its 7th five-year plan (FYP-2016) which is for the years 2016 to 2020 (Rahman, 2017). Just before publishing this plan, Bangladesh had achieved its maritime boundary in 2014. In addition, the first year of this plan coincides with the launch of UN post -2015 SDG goals. Therefore, the ocean governance issues received priority in the 7th FYP. The 7th FYP centered on three themes (FYP, 2016):

1. GDP growth acceleration, employment generation, and poverty reduction.
2. Empowering every citizen to take part in the development process.
3. A sustainable development strategy which entitles the sustainable use of natural resources.

Thus to achieve the goals of 7th five-year plan, the government is trying to plan an ocean-related policy which will ensure the sustainable use of the marine living and nonliving resources in Bangladesh (Hossain et al.,2014).

3.7 Tools and Initiatives for Ocean governance

3.7.1 Integrated coastal zoning and management (ICZM)

The concept of ICZM started from the Rio de Janeiro earth summit, 1992. After the Rio declaration, ICZM has become a popular approach to manage coastal areas of the world and the USA is the first country to implement ICZM (Cicin-Sain, Knecht, Vallega, & Harakunarak, 2000). ICZM is an adaptive and integrated approach for achieving sustainable resource management in the coastal areas. Following the footsteps of other coastal nations, Bangladesh started an ICZM in 2001 through the establishment of a program development office (PDO) in water resource planning organization (WARPO) at the Ministry of Water Resource (Huda, 2004). Subsequently, Bangladesh developed three main policies for ICZM including the Coastal Zone Policy-2005, Coastal Development Strategy-2006, and Priority Investment Program-2006 (Islam, Xue, & Rahman, 2009). The objectives of ICZM were achieving sustainable economic growth, meeting basic needs, reduction of vulnerabilities, sustainable management and fair distribution of the resources, gender equality and empowerment of women and preservation and enhancement of critical ecosystems (Islam & Shamsuddoha, 2018). However, all these policies and strategies became dormant with a few successes in some specific areas including disaster management, gender equality, and empowerment of women (Hossain et al., 2014).

3.7.2 Integrated Coastal and Ocean Management (ICOM)

ICOM is an approach to manage not only coastal areas but also the ocean areas including the EEZ and Continental shelf of a country (Yao, 2008). Since mid-1960 to the end of the twentieth century, about 700 ICOM initiatives were taken by over 140 countries. However,

almost half of those initiatives were unsuccessful because of lack of a monitoring and evaluation mechanism (Cicin-Sain et al., 2000). The Bangladesh government has taken some initiatives from time to time to manage the coastal areas including constructing coastal embankments, creating coastal greenbelt, and land reclamation and delta development (Islam et al., 2009). The main objectives of those initiatives were to protect coastal areas from natural disasters including cyclones, tidal surge, erosion, and salinity intrusion. Nevertheless, the issues of ocean governance and management were completely ignored in ICOM (Islam & Shamsuddoha, 2018). However, after the verdict of ICJ about maritime boundaries, the Bangladesh government is trying to take some initiative to govern and manage the ocean.

3.7.3 MSP

In recent years, MSP has become a popular tool to manage ocean areas (Bakker, de Koning, & van Tatenhove, 2019). The Bangladesh government is also planning to adopt MSP in the country's maritime area. Hence, in the country's 7th FYP (2016-2020), MSP has been recognized as a key tool to manage and govern the ocean area of Bangladesh (Shamsuzzaman & Islam, 2018). MSP is a holistic approach to manage the ocean uses. In the ocean, different users have different objectives. Since they have a different objectives, they are overlapping with each other. Thus, they are competing for their space in the ocean. Most of them are not compatible with each other and have adverse impacts on each other. Thus, MSP has become a management tool to reduce the conflicts among ocean uses (Douvere, 2008).

Many people have a misperception about MSP. Some tend to perceive MSP as map of the ocean, some other people perceive MSP as ocean zoning. In reality, these are parts of the MSP process. Another misconception of MSP is that it deals with only permanent elements like ocean space; but in reality, it deals with temporal elements like seasons,

years, decade and agents like human, natural forces and biological agents. In fact, MSP can influence the space, time and process of human interventions (Gee et al., 2019).

Bangladesh is still at a policymaking stage of MSP. Pioneer government departments including blue economy cell, department of shipping, department of environment, and department of fisheries are thinking to implement MSP in Bangladesh waters. To start an MSP in any area, the UNESCO step by step approach for MSP has identified 10 steps (see Figure 10) (Shamsuzzaman & Islam, 2018). Though, region to region these steps vary, Bangladesh is considering to follow these 10 steps (Hossain et al., 2014).



Figure 10: UNESCO step by step approach for MSP, Source: UNESCO step by step approach for MSP

To start the MSP process in any area, the UNESCO step by step approach suggested to identify existing stakeholders and their conflicts as well as establish a competent authority to coordinate the MSP (Hassan & Alam, 2019). To identify the stakeholders, Bangladesh needs to know the potential sectors in the blue economy (Sarker et al., 2018). Therefore, the Ministry of Foreign Affairs of Bangladesh identified 26 sectors related to blue economy in 2017 (MOEPMR, 2018). After that initiative nobody has taken any step to identify the stakeholders in particular sectors. Thus, identifying the stakeholders, their

stakes and conflicts in the maritime area are a time bound necessity (Shamsuzzaman & Islam, 2018). This research is intended to help the Bangladesh government identifying the stakeholders and their conflicts in the maritime area in order to facilitate the MSP initiative in Bangladesh.

3.7.4 Ocean zoning

Ocean zoning is a planning approach to ocean management to demark the areas of ocean use (Meiner, 2010). It allocates suitable areas to the ocean users for sustainable use of marine resources. It is widely used to reduce conflict among users by separating incompatible uses and to place compatible user side by side (Fletcher, McKinley, Buchan, Smith, & McHugh, 2013). It also helps to safeguard the ecologically important areas and enable economic initiatives with certainty. Recently, the Bangladesh government has taken some steps towards ocean zoning including declaring marine protected areas (MPA), fishing zones, and ecologically sensitive areas (ESA) (Karim & Uddin, 2019).

3.8 Protected and Ecologically sensitive Ocean areas of Bangladesh

3.8.1. MPA

Marine protected areas (MPA) are widely used management tools for biodiversity conservation in the marine and coastal ecosystem around the world (Agardy et al., 2011). To date, over 14,000 MPA's have been designated, covering 4.1% of the oceans and 10% of the coastal areas under national jurisdiction (Yates et al., 2019). Although MPAs are designated for conserving biodiversity, there are also some socio-economic consequences related to their establishment (Pomeroy & Douvere, 2008). In many areas, MPA has increased economic opportunities and alternative livelihood provision for the local community (Rees, Rodwell, Attrill, Austen, & Mangi, 2010). Thus, to protect the biodiversity and increase the socio-economic opportunities, the Bangladesh government

has declared an MPA – Swatch of no ground (SONG) in the Bay of Bengal (see Figure-11). SONG is a ravine, which engraves the Ganges delta near the Sundarbans area, and cuts the seabed of the subaqueous shallow shelf and acts as dead center between river mouth and Bengal fan (Islam & Shamsuddoha, 2018). It is a world-famous breeding and spawning ground for various aquatic fauna including whales, dolphins, sharks, and porpoises. The depth of SONG is approximately 1200 m and the width is 7km (Hossain et al., 2014).



Figure 11: Swatch of no ground. Source: www.moe.gov.bd

3.8.2 Ecologically sensitive areas (ESA)

The southwest coastal area of Bangladesh has been blessed by the world's largest single track Mangrove forest- Sundarbans (see Figure 12), which is a UNESCO world heritage site providing huge marine and terrestrial biodiversity (Al Mohit et al., 2018). The Bangladesh government has taken initiatives for protecting this ecologically sensitive area (ESA). In addition, a Coral Island, Saint Martin Island (see Figure 12) in the southern tip of Bangladesh, is a vulnerable place for marine ecosystem providing hiding and breeding

ground for various aquatic species including juvenile fish, turtle, and crabs. Bangladesh is in the process of declaring Saint Martin Island as ESSA (Islam & Wahab, 2005).

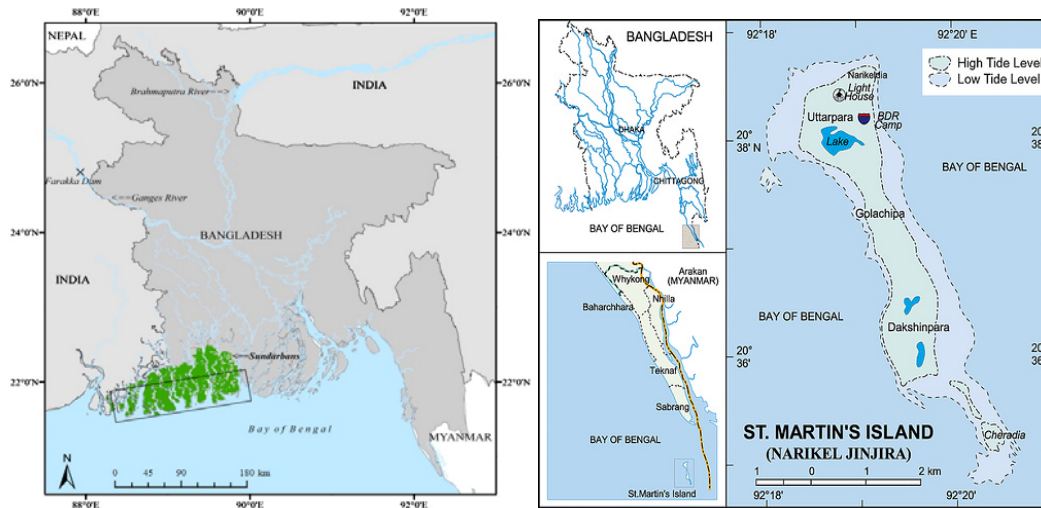


Figure 12: Sundarbans and Saint Martin Island, Source: www.moe.gov.bd

3.9 Management approach for ocean governance in Bangladesh

According to Crowder and Norse, to get the best output of MSP, policymakers should go for a place-based approach rather going for the sector by sector approach (Crowder & Norse, 2008). Unfortunately, the maritime space and utilization of that maritime space are still very much sectoral in Bangladesh. All the sectors including shipping, fishing, offshore energy, and eco-tourism are working in their own sectors and trying to use ocean resources in their own way (Hussain, Failler, Karim, & Alam, 2018). Nevertheless, the maritime area of Bangladesh is very limited and in that limited area, every sector wants its own stake. Thus, in some places, the concentration of use is excessive putting huge anthropogenic pressure (Islam, Jahan, & Al-Amin, 2016). Therefore, to reduce the pressure on one specific area, Bangladesh is trying to adopt a place-based management strategy.

From the above discussion, it is evident that Bangladesh has made many efforts including ICZM, and ICOM to govern and manage the ocean sustainably. However, all the efforts

were unsuccessful for various reasons, including lack of proper planning, manpower, and expertise, as well as coordination among authorities' and stakeholders' engagement (Hossain et al., 2014). Many countries around the world have implemented MSP for managing the ocean sustainably (Gopnik et al., 2012). Following the footsteps of other countries, in the country's 7th five-year plan, the Bangladesh government has shown strong commitment to implement MSP for managing the ocean uses (FYP, 2016). In the next chapter, the potentials and challenges of the overall MSP effort in Bangladesh will be discussed.

4.0 Potentials and Challenges of MSP effort In Bangladesh

Being a coastal developing country, the maritime area of Bangladesh is occupied by various ocean uses including fishing, shipping, oil and gas exploration, ship building, ship recycling, salt production and many more (see Figure 13) (Sarker et al., 2018). Thus, to manage these ocean uses, it is time-bound to adopt some management tools in the maritime area of Bangladesh. As all the previous efforts, including ICZM and ICOM have become dormant, Bangladesh is trying to adopt MSP in its maritime area (Hossain et al., 2014). In this chapter, the potentials and challenges of adopting MSP in Bangladesh will be discussed.

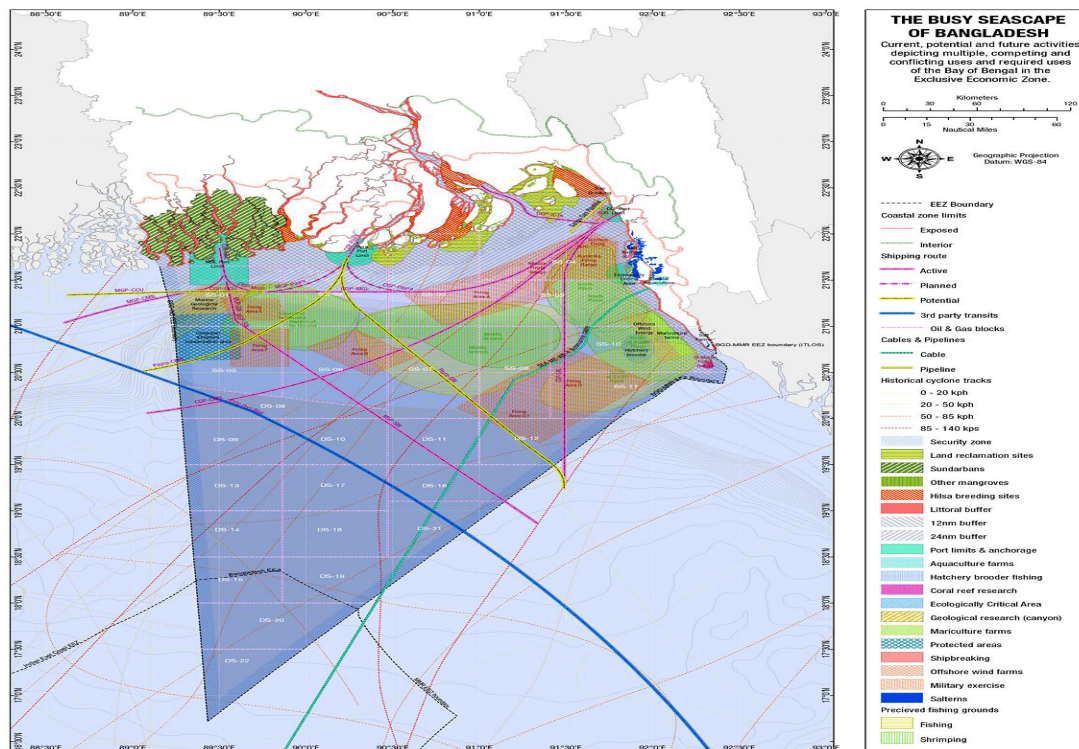


Figure 13: The busy seascape of Bangladesh. Source: Hossain et al., 2014.

4.1 Potentials of MSP in Bangladesh

Bangladesh is one of the fastest developing countries in the world. In the past ten years, the country's GDP growth was over 7% (Al Mohit et al., 2018). To support the tremendous economic growth, Bangladesh wants to use its ocean space in all possible manners. Accordingly, the ocean uses have increased in recent years putting huge anthropogenic pressure on the ecosystem (Shamsuzzaman & Islam, 2018). Apart from the existing sector, new sectors are appearing in the ocean areas, having their own goals and targets. MSP may help these sectors to achieve their targets in a sustainable way. Evaluations of existing MSP cases around the world shows that MSP can connect sector to sector, people to places and development to biodiversity (Janßen, Varjopuro, Luttmann, Morf, & Nieminen, 2018). Following are the main potentials of MSP in Bangladesh.

4.1.1 Resolving the conflict of use

To support the economic growth of the country, Bangladesh requires new ports and LNG terminals (Saha, 2018). Consequently, the government is constructing new ports, including Payra and Matarbari ports and new terminals, including bay terminal and LNG terminal in coastal areas (Rahman & Mahmud, 2018). As the space is limited, these new ports and terminals will be in conflict with existing sectors including fisheries and salt extraction (Shamsuzzaman & Islam, 2018). In the MSP process, the government may adopt the zoning and place based management approach to demark the area of fisheries and salt extraction (Rodriguez, 2017). Once the areas of different sectors, including fisheries, salt extraction, port, and terminals are been demarked by zoning, conflicts among those sectors may be reduced. Hence, MSP with the place based management approach may reduce the conflicts. (Sarker et al-2019).

4.1.2 Reducing the negative impacts on biodiversity:

Bangladesh is one of the most densely populated countries in the world with 180 million people. The coastal areas are more populated than the other areas (Islam, Mohammed, &

Ali, 2016). These enormous numbers of people are trying to collect resources from the ocean as much as they can. In addition, to support these coastal people, new industries including shipbuilding, readymade garments (RMG) and fish processing industries are growing in the coastal region (Rahman & Mahmud, 2018). These industries are polluting the ocean with their residues causing negative impacts on the biodiversity. According to UNESCO, the EEZ of Bangladesh is breeding and feeding ground of many endangered species including Irawati dolphin and shell spotted turtle (Momtaz, 2005). Therefore, Bangladesh is trying to develop the ecosystem-based management (EBM) approach in the ocean and coastal areas to reduce the human intervention in the ecosystem. In many countries including Australia, the Netherlands, and Belgium, EBM based MSP has become a primary tool for reducing human intervention in the ecosystem (Gopnik et al, 2014). In EBM based MSP, conservation and protection of ecosystem goods and services get the highest priority that denies unnecessary human intervention in the ecosystem (Pomeroy & Douvere, 2008). Following the footsteps of developed countries, EBM based MSP may help Bangladesh to reduce human intervention in the ecosystem.

4.1.3 MSP builds resilience against climate change:

According to the Paris agreement held in 2016, the world is trying to keep the increase in global average temperature to well below 2 degrees Celsius above pre-industrial level (Rogelj et al., 2016). To date, 186 members of UNFCCC have become a party of this agreement and Bangladesh is also a signatory of this agreement (Dimitrov, 2016). According to this agreement, every country should have a long term goal and plan to fight against climate change impacts. Climate change impacts, including global warming, sea-level rise, and ocean acidification are influencing the physical, biological and chemical properties of the seas around the world (Mukul et al., 2019). Being a coastal nation, Bangladesh is highly affected by climate change impacts reallocating the marine uses including fisheries, tourism, aquaculture, shipping and recreation (Razzaque & Alamgir, 2019). Thus, climate-informed MSP can be an effective tool to adapt future challenges

and uncertainties with inclusion of climate-related disturbances in marine conservation planning.

4.1.4 MSP improves connectivity among other plans:

One of the administrative benefits of MSP is that it improves management capacity by linking different authorities for good governance (Ehler & Douvère, 2009). A lack of connection between the various authorities responsible for individual activities can lead to serious uncertainty over future development objectives. MSP with an ability to deal with multiple objectives improves decision making and accountability to coordinate between different plans and sectors to achieve a cumulative result (Lester et al, 2013). Therefore, MSP can be a connecting agent between authorities in Bangladesh.

4.1.5 MSP enhances regional co-operation

Bangladesh has maritime boundaries with Myanmar and India. These three countries are members of BIMSTEC. MSP can be a tool for solving cross border issues including IUU fishing and mineral extraction (Flannery et al., 2015). Around the world, there are many successful examples of cross border MSP, including Planning Bothnia Sea, Maritime Spatial Planning in the Adriatic Sea and ESPON between Portugal and Spain (Janßen et al., 2018). Thus BIMSTEC also may consider adopting a cross border MSP in the Bay of Bengal region, which will enhance the regional cooperation among these countries.

4.1.6 MSP protects Biodiversity beyond national jurisdiction (BBNJ)

Recently the world is considering to protect the BBNJ and awareness about BBNJ is increasing in coastal nations. Aquatic species do not follow legal boundaries in the sea (Hasan et al., 2019). They migrate from one place to another place through currents. At the larval stage they disperse themselves to a suitable habitat, which is often termed as connectivity (Crowder & Norse, 2008). Thus, if the suitable habitat for large migratory aquatic species could be determined in the area beyond national jurisdiction (ABNJ), those

areas might be protected through some cross-boundary MSP initiatives (Foley et al., 2010). Therefore, MSP can be an effective management tool to protect BBNJ.

4.2 Challenges of implementing MSP in Bangladesh

As ocean governance and management is still developing, Bangladesh is facing a lot of challenges to implement MSP. The main challenges of implementing MSP in Bangladesh are as follows:

4.2.1 Institutional framework

There is a lack of coordination between the ministries of Bangladesh. There are many ministries including MOS-looking after shipping, MOFL- looking after fisheries, MOE-looking after environment, MOCAT- looking after tourism, MOI- looking after ship breaking, MPEMR- looking after mineral resources, but there is no ministry to co-ordinate all these ministries (Islam et al., 2016). BEC under MPEMR is supposed to co-ordinate all these ministries. However, they do not have authority, manpower and expertise to co-ordinate all these ministries (MPEMR, 2018). As in the MSP effort, all the ministries need to be coordinated. This issue has become a big challenge to start the MSP effort.

4.2.2 Availability of data

The geospatial data about ocean governance is still not well developed in Bangladesh. Most of the sectoral data are owned by that particular sector and all these sectors are not ready to share their data (Sarker, Rahman, Yadav, & Islam, 2019). There is no central database to store all these data. The Institute of Marine Science and Fisheries (IMSF) has recently taken initiatives for gathering all these data but the process is very slow. However, in 2017, they published a marine area map -“Maritime Province of Bangladesh”, which provides some zonal data about EEZ of the country. In addition, since 1958 until 2006, a total of 15 researches were conducted through FAO to ascertain the fish stock, but after

that Bangladesh did not conduct any fish stock assessment (Shamsuzzaman and Islam, 2018). In 2014, Researchers from Chittagong University performed research work on seaweeds, but they did not create any taxonomy of seaweeds. Thence, their work has become of no use (Hasan et al., 2019). Therefore, Bangladesh does not possess adequate data about ocean governance.

4.2.3 Lack of knowledge

Bangladesh has huge lack in capacity building. In Chittagong University, the Institute of Marine Science and Fisheries (IMSF) has been operating from 1978, but they did not have an oceanography department. IMSF used to teach only marine biology. In 2011, they started the Oceanography Department. If they had started this department in the 1980's, Bangladesh would have skilled manpower in this sector today (Hossain et al., 2014). Another major issue is the mindset of Bangladeshi people. Since independence, Bangladesh is called a riverine country, without considering the ocean and its resources. To date, there are no stories developed about the ocean in Bangladesh, which will inspire youngsters to explore the ocean. Thus, from childhood Bangladeshi kids do not think about the ocean and its uses.

4.2.4 Stakeholder's engagement

As discussed in chapter 3, stakeholder's engagement is the prerequisite to start the MSP process (Ehler & Douvere, 2009). In Bangladesh, political and administrative bodies take part and they show their interest in any policy-making issue, but nonpublic entities and NGOs are not that much active (Rahman, 2017). Further, there is no active organization to co-ordinate all these stakeholders. Quite often, administrative entities do not engage stakeholders early, which creates many problems during the time of implementation of any plan (Patil et al., 2018). Sometimes, in a particular sector, stakeholders also do not know their exact position, stake and responsibility within that sector. This identity crisis of stakeholders creates major problems later on within that sector (Hasan, 2015). To

engage the stakeholder early in the MSP process, stakeholder analysis is an important step to be taken (Pomeroy & Douvere, 2008). However, nobody knows who will do the stakeholder analysis and who the major stakeholders within a sector are. Miscommunication within the stakeholders, fragmented governance, biased decision, lack of trust, and misperception about other stakeholders are some of the challenges while engaging stakeholders in the MSP process (Hossain et al., 2014).

4.2.5 Climate change impacts

Bangladesh is highly affected by climate change impacts including sea-level rise, ocean acidification, and global warming (Miah, 2015). Because of climate change impacts, marine living and nonliving resources are changing their position in the ocean space. This reallocation of ocean resources is creating new conflicts within the EEZ of Bangladesh (Hossain, Hossain, & Chowdhury, 2006). In addition, because of climate change, coastal areas are becoming more and more disaster-prone damaging the existing sector in the coastal region.

4.2.6 Transboundary issues

Managing transboundary issues, including IUU fishing, mineral and gas extraction and ecological connectivity is another big challenge in implementing MSP (Hussain et al., 2018). To date, no discussion is going on to manage all these issues. However, recently department of fisheries and the coastguard have taken a few initiatives to control IUU fishing, which includes RADAR surveillance in the EEZ and a fishing vessel monitoring system (FVMS) (Rahman, 2017). In the BOB, there are a few gas blocks situated at the maritime boundary. As a result, Bangladesh and Myanmar are competing with each other to extract gas from this boundary line gas blocks (Alam, Saleque, Alam, Mustary, & Chowdhury, 2019). Additionally, migratory species including Tuna and Irawati dolphin has spawning grounds in the EEZ of Bangladesh. There is no regional co-operation and co-ordination in the BOB region to support this connectivity issue (Shamsuzzaman and

Islam, 2018). Recently, Bangladesh signed BWM Convention. According to the BWM Convention, Bangladesh should have technology to monitor and identify the invasive species (Sarker et al., 2019). However, Bangladesh does not yet possess any technology to test the presence of invasive species. Invasive species may become a threat to the existing ecological balance (Bishop et al., 2017). Thus, managing and preventing intrusion of invasive species have become a new challenge for Bangladesh while implementing MSP.

4.2.7 Balancing between economic growth and conservation

The economy of Bangladesh is growing faster than before. To meet the demand for economic growth, more and more industries including new ports, shipbuilding industry, salt production, and shrimp and crab production are expanding their stake in the coastal area of Bangladesh (Karim & Uddin, 2019). The government is trying to ensure their space in the maritime area. Simultaneously, the government has to ensure that these new industries are not hampering ecological balance (Sarker et al, 2018). Thus, in article 18a, the constitution of Bangladesh, it is stated that the state should endeavor to preserve the wetland and biodiversity and the marine environment (Shamsuzzaman & Islam, 2018). However, Bangladesh does not have a department with all the logistics support to combat all the environmental issues. Therefore, balancing between blue growth and conservation has become more challenging in recent years.

From the above discussion it is evident that, despite several challenges including lack of stakeholders' engagement, stakeholders' analysis, data, knowledge and institutional framework, and climate change impacts, Bangladesh has a huge potential to implement MSP in its maritime area. In the next chapter, the major maritime sectors in Bangladesh will be discussed.

5.0 Major maritime sectors in Bangladesh

To implement a successful MSP, it is mandatory to have a clear idea about existing major sectors (Hossain et al., 2014). In this part, the status of the major sectors of MSP effort in Bangladesh will be discussed.

5.1 Fishing Sector

Bangladesh can divide its fishing activities into two major segments including industrial fishing and artisanal fishing (Islam et al., 2017). 70,000 wooded fishing boat (Length 30 to 35 feet) are regularly plying in Bangladesh water. Because of their size, they cannot go beyond 20 to 30 km from the coastline for fishing. Among these seventy thousand wooden vessels, very few are registered (DOF, 2018). At least ten people work in every wooden boat. As a result, Bangladesh has $(70,000 \times 10 = 7,00,000)$ seven hundred thousand people fishing at sea at any time of the year, which is a big community. They live near the coastal areas of Bangladesh putting huge anthropogenic pressure (the location of fisher's village shown in Figure 17). Most of these fishermen are illiterate and do not have any knowledge of environmental sustainability and policy planning about ocean space. Quite often this big community has been ignored by the policymakers in Bangladesh (Shamsuzzaman & Islam, 2018). For sustainable fisheries management, Bangladesh has declared seasonal restriction of 65 days –lasting from 20th May until 23rd July (DOF, 2018). Within this time any fishing activity is banned in the Bangladesh waters. The government is providing forty kg of rice per family per month. However, these fishermen are going with wooden boats to catch fish in the ban period (Shamsuzzaman & Islam, 2018). Additionally, the Meghna river estuary is the breeding and nursery ground of plenty of fish species including, Hilsa and Vetki (Barramundi or Asian sea bass), which is declared as Hilsa Sanctuaries by the Fisheries Department (see Figure 14) (Islam et al., 2016). Nevertheless, these fishermen frequently go to Hilsa sanctuaries to fish even in the ban period.

Over 250 steel body registered trawlers are plying in Bangladesh waters (DOF, 2018). They go up to 50 nautical miles for fishing. Bangladesh has a 660 km long sea area from the coastline, and 2,300 m deep sea. As fish stock assessment has not been done beyond 50 kilometers from the coastline, fishermen are only fishing within 50 kilometers from the coast line (Islam et al., 2017). Therefore, the space for fishing has become very limited regarding the number of vessels and boats, which leads to competition of space and conflicts within fishers. As the concentration of fishing boats are very high near the shoreline, it creates conflicts with other ocean users including shipping, tourism, and gas exploration (DOF, 2018). Further, Bangladesh has few fish processing zones or factories in the coastal area. From this fish processing zone, Bangladesh exports different types of fish including, Hilsa, tuna, shrimp, and crab (Hossain et al., 2018).

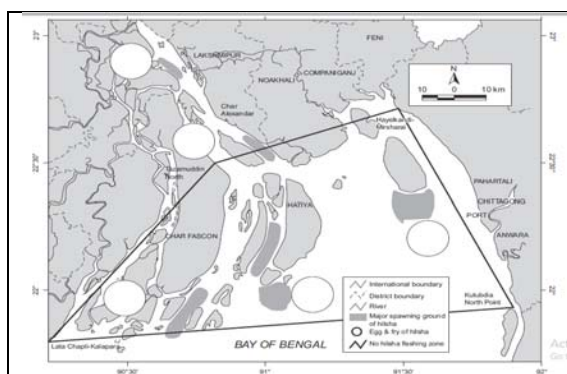


Figure 14: Hilsa Sanctuary (Monirul et al, 2016).

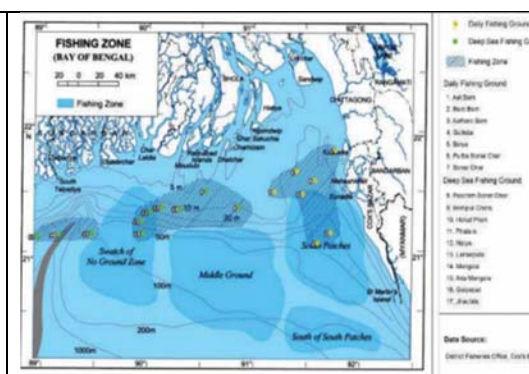


Figure 15: Industrial Fishing Zone (Nabi, 2012).

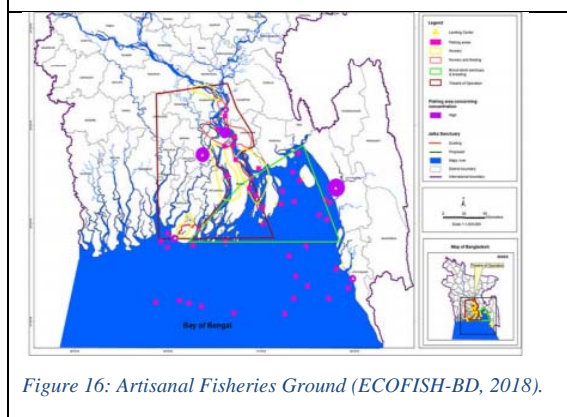


Figure 16: Artisanal Fisheries Ground (ECOFISH-BD, 2018).

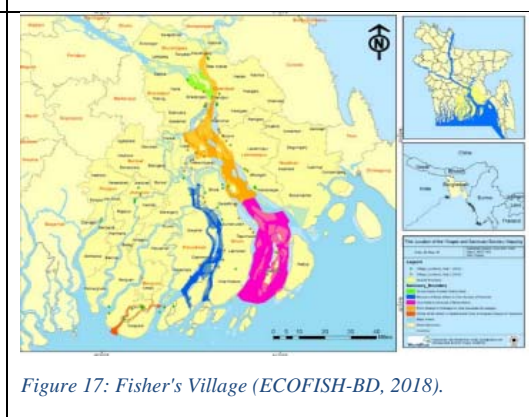


Figure 17: Fisher's Village (ECOFISH-BD, 2018).

5.2 Port and Shipping sector

Bangladesh is an ancient shipping nation. Because of the strategic location of Bangladesh in the BOB region (see Figure 18), the shipping sector is escalating very fast (Hung, Lu, & Wang, 2010). Presently, the estimated value of import and export trade is 80 billion dollars and the shipping trade is growing 10 to 15% per year (Uddin, Islam, Awal, & Newaz, 2017). However, to support this huge trade volume, Bangladesh has only two ports, including Chittagong Port and Mongla Port. Thus, to fulfill the escalating demand of import and export, Bangladesh is constructing new ports including Matarbari port (see Figure 20), Payra Port, Sonadia Deep Sea Port, Kutubdia FSRU LPG and LNG Terminal (see Figure 21) and Bay terminal (Saha, 2018).

Bangladesh can divide its shipping sector into three major categories, including merchant shipping, inland shipping, and coastal shipping. Bangladesh has a considerable number of seafarers but it does not own enough ships for their sea placement. Presently, Bangladesh is owning only 46 ships (Rahman, 2017). If Bangladesh owned more ships, Bangladesh could have more job opportunities for local people, including seafarers, repairers, tugs crew, managers, ship designers and builders. Every year, almost 3000 foreign ships visit Bangladeshi ports for carrying cargo. As Bangladeshi ports have draft restriction and there is no recommended route or traffic separation scheme, foreign ships face difficulties in coming to Bangladesh (Uddin, Islam, Awal, & Newaz, 2017). Further, most of the feeder vessels go to Singapore for feeder service, but if there were proper recommended routes, policy and planning, these ships could have gone to the Colombo. Thus, shipping time could have been saved (Saha, 2018).

Except India, Bangladesh does not have any coastal trade with other countries (see Figure 19). As 65 % of the industries are in Dhaka, containers are brought from Chittagong to Dhaka by train. As Bangladesh does not have Proper Ocean planning, sea/river routes are not used to transfer containers (Padmaja, 2016).

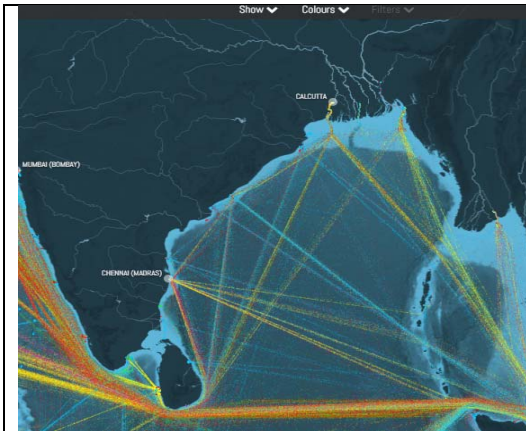


Figure 18: Common Shipping Routes in BOB (Plumer, 2017)



Figure 19: Coastal Shipping Routes (Padmaja, 2016)

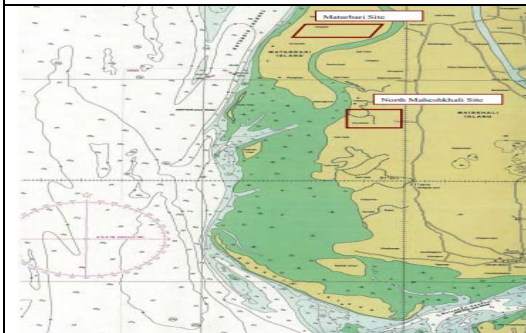


Figure 20: Matarbari Port (TEPSO, 2013)

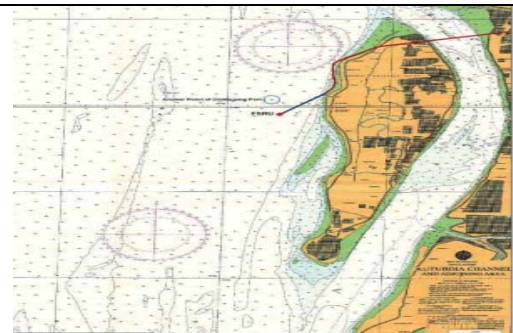


Figure 21: Kutubdia LPG Terminal (ERM, 2017)

Most inland ships are single-hull tankers. Often, they try to cross the Bay of Bengal to go from the eastern coast to the western coast of the country. On the way, because of natural disaster and stability problems, they sink in the territorial waters of Bangladesh causing huge environmental pollution and biodiversity degradation. In addition, after sinking, they become permanent wrecks in the territorial water creating new threats to other ocean uses, including merchant shipping, fishing, tourism and salt extraction (Saha, 2018).

5.3 Ship recycling sector

Bangladesh has become a graveyard of the scrap ships of the world and recycles 300 ships every year, which is 24% of the total scrapped ships in the world (MOI, 2019). Bangladesh has 105 yards and around 60-70 percent of the yards are in operation (Alam et al., 2019). But unfortunately, ship recycling industries have been the main polluter of the coastal environment. Recently, the Bangladesh government has taken serious steps to control the pollution because of ship recycling. Every ship recycling yard has to take clearance from Environment Department prior to recycling a ship (Rabbi & Rahman, 2017).

5.4 Oil and Gas Exploration sector

Bangladesh is the nineteenth largest producer of natural gas in Asia (Alam et al., 2019). Geologists believe that Bangladesh has a huge amount of gas reserves in the EEZ. Lack of technical capacity and skilled manpower within this sector have impeded the potential of Bangladesh to become a major hydrocarbon producer within the region. Bangladesh has 26 blocks in the Bay of Bengal 15 of which are deep-sea blocks and 11 are in shallow water blocks (Bari, 2017). Since 1998, Bangladesh has been producing and using natural gas from offshore block-16. Primary tender and negotiation on more six-block including block no 4, 9, 11,12,16,21 have been done (see Figure 22) (Hussain et al., 2018). Bangladesh is expecting exploration on those blocks within a very short period. Exploration in these blocks will create new conflicts with other sectors including fisheries and the environment conservation sector because of the close proximity of those block to the Hilsa sanctuary and ecologically sensitive areas (see Figure 23) (Islam & Shamsuddoha, 2018).

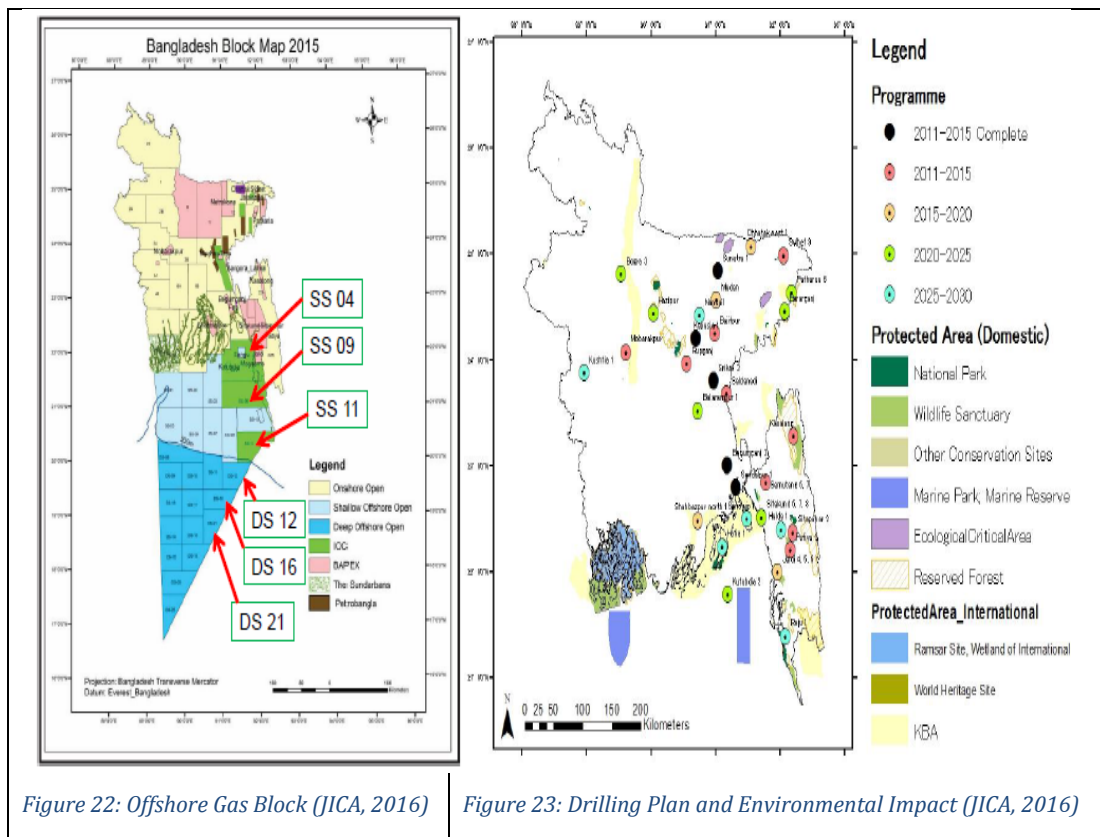


Figure 22: Offshore Gas Block (JICA, 2016)

Figure 23: Drilling Plan and Environmental Impact (JICA, 2016)

5.5 Tourism sector

Around the world, tourism is a huge industry worth of 1.3 trillion dollars. Bangladesh has the potential of becoming a major tourist destination with its longest unbroken sea beach- Cox’s Bazar, Coral Island-St. Martin and largest single tract mangrove forest- Sundarbans. However, Bangladesh could not develop any system to enjoy these sites by waterways (Hassan, Hassan, & Islam, 2014). In Cox’s Bazar, Bangladesh has over 100 hotels and motels where over 10,000 people work (Bari, 2017). Quite often, this community has been ignored by the policy makers. Currently, tourists from different parts of the country are visiting Cox’s Bazar and St. Martin Island. As ocean and environmental awareness culture

has not been developed yet in Bangladesh, local tourists throw their garbage and used plastic here and there polluting the coral and ocean waters (MOCAT, 2018).

5.6 Marine Environment Protection and Conservation

The Bangladesh government has taken various legislative measures to protect, conserve and enhance the ecological sustainability of fish and other marine resources. These measures include a 65-day fishing ban for all types of fish, an 8-month fishing ban for juvenile Hilsa fish of less than 25 cm, a 22 days ban on catching broad Hilsa and a total ban on destructive fishing practices in the maritime area of Bangladesh (Islam & Shamsuddoha, 2018). In 2012, under the Wild Conservation Act, Bangladesh declared the country's First MPA-SONG. Besides, In 2015, IUCN developed and published a framework for establishing MPA in Bangladesh, which suggested a total of 67 sites for declaring MPA including St. Martin Island and Nijhum Dip (see Figure 24) (Karim & Uddin, 2019). Department of fisheries has already declared the south patch as a marine reserve and Ministry of environment has declared Sundarbans as ECA. However, no policy has been made to manage all these MPAs and ECAs. MSP is a continuous process which can change its role in the marine spaces according to the need of the environment and policy (Agardy et al., 2011). Initially, the Bangladesh government thought to use MSP as a tool to establish MPAs; but now Bangladesh is considering MSP as a tool to manage MPAs and ECAs (FYP, 2016).

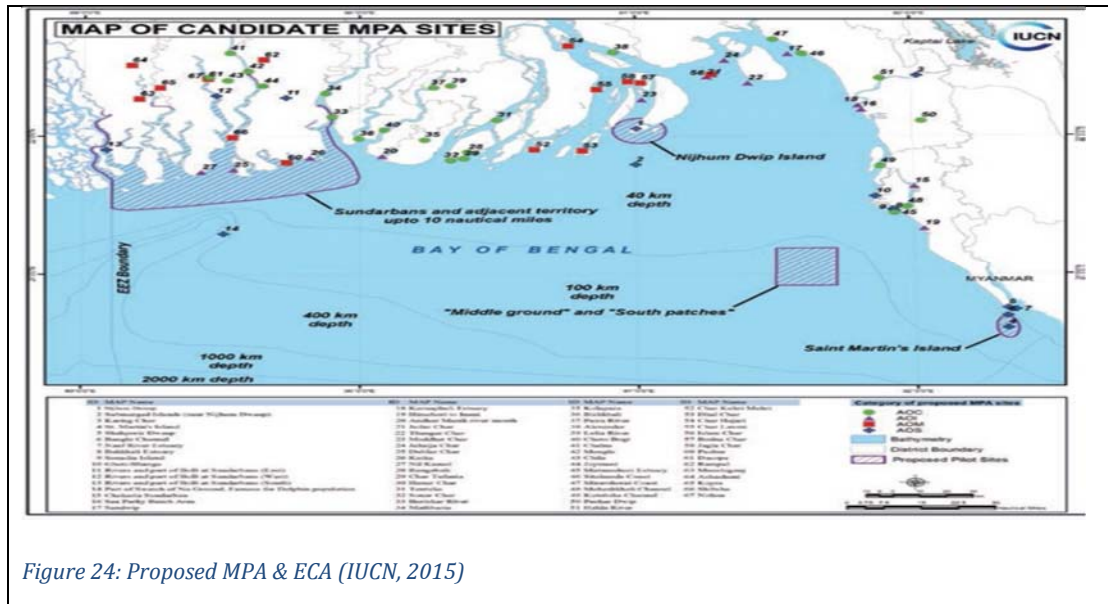


Figure 24: Proposed MPA & ECA (IUCN, 2015)

From the above discussion, it is evident that Bangladesh has a number of maritime sectors. Each sector has many stakeholders, who are struggling to find their stake in the maritime area and conflicting with each other. Therefore, to manage all these sectors and stakeholders, Bangladesh wants to formulate a policy for implementing MSP in its maritime area (FYP, 2016). According to UNESCO, the step by step approach (see Figure 10), before making a policy for MSP, every country needs to identify the stakeholders and their conflicts as well as a competent authority for coordinating MSP (Ehler & Douvere, 2009). Thus, in the next chapter, based on the interview results, the existing stakeholders, way of their engagement, a competent authority as well as their areas of conflicts and ways of resolving those conflicts will be identified.

6.0 Interview analysis

As Bangladesh is still in the early stage of the MSP process. The research has been confined in finding the potential stakeholders and their conflicts for implementing the MSP process in Bangladesh as well as discover some ways to engage all stakeholders and reduce conflicts among stakeholders in the MSP process. According to the research problem, four themes have been chosen, including identifying the stakeholders, identifying the competent authority for coordinating all stakeholders for MSP, the way of engaging stakeholders in the MSP process and identifying the existing major conflicts and the way of resolving the existing conflicts among the stakeholders. In this chapter, based on the interview coding, these four themes will be discussed. Table 2 provides the details of interviewees (see Figure 25).

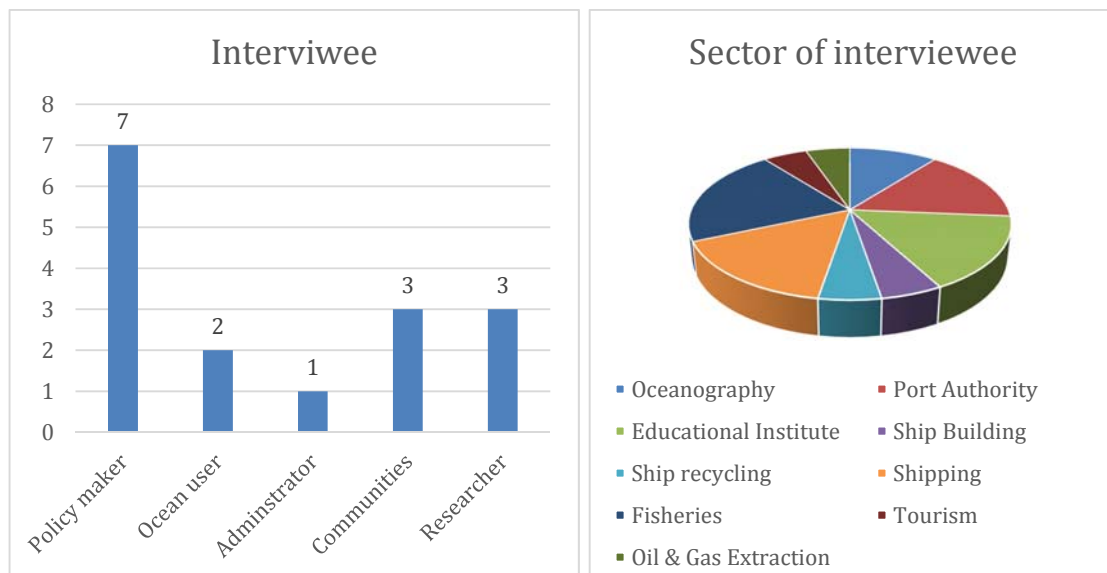


Figure 25: Details of Interviewee.

Table 2: Details of Interviewee.

Serial no	Interviewee	Date of Interview	Duration of interview	Organization	Sector	Position	Work Experience	Age
1.	R1	07.7.19	56 Min	Blue Economy cell	Blue Economy	Policy Maker	35y	60y
2.	R2	08.7.19	30 Min	Department of shipping	Shipping & Fisheries	Administrator	30y	56y
3.	R3	08.7.19	45 Min	Department of shipping	Shipping & Fisheries	Policymaker	25y	52y
4.	R4	08.7.19	30 Min	Maritime University	Oceanography	Researcher	10y	35y
5.	R5	14.7.19	30 Min	Chittagong Port	Port Authority	Ocean Planner	17y	39y
6.	R6	14.7.19	47 Min	Chittagong Port	Port Authority	Policymaker	25y	53y
7.	R7	14.7.19	30 Min	Chittagong port	Port Authority	Environmental ist	25y	54y
8.	R8	15.7.19	30 Min	BMA	Educational Institute	Researcher	20y	45y
9.	R9	15.7.19	30 Min	BMA	Educational Institute	Researcher	20y	45 y
10.	R10	18.7.19	52 Min	WMS	Ship Building	Policymaker	30 y	55 y
11.	R11	21.7.19	57 Min	Ship recycling Yards Ass.	Ship recycling	Policymaker	35y	65 y
12.	R12	22.7.19	42 min	BSC	Shipping	Policymaker	25 y	53 y
13.	R13	25.7.19	47 min	Fisheries Academy	Fisheries	Researcher	18 y	40 y
14.	R14	27.7.19	23 Min	-----	Fisheries	Fisherman	22 y	52 y
15.	R15	28.9.19	22 Min	DOT	Tourism	Policymaker	15 y	47 y
16.	R16	29.9.19	21 min	Petro Bangla	Oil & Gas Extraction	Engineer	19 y	49 y

6.1 First theme: Identifying stakeholders

The implementation of MSP largely depends on successful identification and understanding and involvement of different stakeholders, their practices and interests. According to Pomeroy and Douvere stakeholders are “Individual, groups or organizations who are, in one way or another, interested, involved or affected (positively or negatively) by particular project or action towards resource use.”(Pomeroy & Douvere, 2008). There are many reasons which describe the importance of identifying stakeholders. These reasons include understanding the complexity of the ecosystem and human uses, examining the compatibility and conflicts among users, discovering the existing pattern of interactions and identifying and resolving the conflicts among stakeholders (Ehler & Douvere, 2009). Thus, from the interview result, the researcher tried to identify the stakeholders of each sector, which helped to perform a stakeholder’s analysis. The stakeholder’s analysis will enable the government to have a clear scenario of the stakeholders of different sectors in the whole MSP process (Pomeroy & Douvere, 2008). For better understanding of the complexity of each sector, the stakeholders of each sector have been divided in 3 groups, including primary stakeholder, secondary stakeholders, and tertiary stakeholder:

Primary stakeholder: Primary stakeholders in any sector are those who are directly related or whose livelihood largely depends on this sector.

Secondary stakeholders: Secondary stakeholders in any sector are the authorities and institutes who govern and train the people of that sector.

Tertiary stakeholders: Tertiary stakeholders are those peoples who are indirectly related with that specific sector or whose livelihood does not depend on that sector only.

Table 3 : Existing stakeholders in a different sector.

Sectors	Primary	Secondary	Tertiary
Fishing	Artisanal fisherman, industrial fisherman, recreational fisherman, fishing vessel owner, fishing gear suppliers, fish processing factories, fish traders, cold storage owners.	MOF, DOF, Marine fisheries academy, IMSF, BORI.	Fish consumers, superstore owners, C & F agents, port authorities, shipbuilders.
Merchant Shipping	Ship-owner, Seafarer, ship manning agents, Shipbuilders, Port authorities, Dry dock, Ship Supplier, Ship managers, Ship Breakers, Stevedores, Ship agents	MOS, DOS, BOMMA, BMA, BSMMRU, private marine academy, NMA,	BGMEA, Exporters, and Importers,
Seaports	Ship Agents, Stevedores, watchman's, C & F agents, ship repairer, Dry Dock, Ship-owners. Exporters and Importers,	MOS, Port authority, DOS, BGMEA	Seafarer
Shipbuilding	Shipyard Owner, Worker, Ship recycling industries,	MOI, MOS, DOS	Plumbers, Electricians
Ship recycling industries	Shipyard Owners, Worker, Ship Building Industries.	MOI, MOS, MOE, DOE, DOS	Shipbuilding Industries. NGOs
Coastal aquaculture and marine culture.	Fisherman, Fish farmers, Fish Feed supplier, Fish processing industries.	MOF, DOF, IMSF, BORI	Fish consumers, superstore owners, C & F agents, port authorities, shipbuilders.
Oil and gas	Consumers, Industries, Gas exploration industries. Gas exploration workers, engineers.	Petro Bangla, MOI, MOE,	Ports, shipbuilders, LNG sellers.
Sea salt production	Sea salt producers, Salt traders	MOA, BARI, BADC.	Salt consumers, Superstore Owners
Coastal tourism	Owner of Hotels, Motels, Travel agents, Tour guides, Passenger ferries.	MOT, DOT	MOE, DOE
Marine surveillance	Coast guard, Port Authorities.	MOS, DOS.	Shipbuilders, Seafarer.
Human Resource Development	BMA, NMI, BEPTC, BSMMRU, BORI, IMSF	MOS, DOS	Seafarer, Maritime professionals,

Table 3 shows that there are some stakeholders common in two or three sectors and there are some stakeholders who are a primary stakeholders in one sector and secondary or tertiary stakeholders in another sector. All these stakeholders are equally important in making a policy for MSP. Thence, the stakeholders have been divided into 7 major categories, including ministries, authorities, departments, corporations, industries, institutes and communities. Table 4 aims to provide a stakeholder's analysis for the MSP effort in Bangladesh (see Figure 26).

Table 4: Stakeholder's analysis based on interview data.

Stakeholders						
Ministries	Authorities	Department	Corporations & Cells	Industries	Institutes	Communities
Ministry of fisheries & Livestock	-----	Dept. of Fisheries	Bangladesh Fisheries Development Corporation	Fish Party, Fish processing Industries, Aquaculture Industry	Bangladesh Fisheries Research Institute, Bangladesh Marine Fisheries Academy	Artisanal Fisherman, Industrial fisherman, Fishing vessel owner, Fishing gear suppliers, Cold Storage owner Fish exporter & Importer,
Ministry Of shipping	Chittagong port authority, Payra Pot authority, Mongla Port authority,	Dept. of shipping,	Bangladesh Shipping corporation	Ship Builders, Chittagong dry dock,	Bangladesh marine academy, national maritime training Institute, Deck and engine personnel training center.	Seafarer, Shipowners, Ship agents, Stevedores, Ship repairer
Ministry of Industry	-----	-----	-----	Ship Recycling Industry	-----	Shipyards owner.
Ministry of power, energy and mineral resources.	Sustainable and renewable energy development authority	Bureau of mineral development	Bangladesh petroleum corporation, Petro Bangla, Blue economy cell	Oil & gas exploration companies. Sand extraction companies	-----	Oil & Gas exploration Engineers, Sand extractor
Ministry of civil aviation and tourism	-----	Bangladesh Tourism Board.	Bangladesh Tourism Corporation.		National hotel & tourism training institute.	Hotel & Motel owners, Travel agencies, Tour guides, Owner of Passenger ferries.
Ministry of Environment & forest.	-----	Bangladesh Climate Change trust, Department of environment,	-----	---	Bangladesh forest research Institute	Environmental NGOs

		department of forest.				
Ministry of planning	Implementation, monitoring & evaluation division	Bangladesh Planning commission	-----	--	-----	Ocean Planners
Ministry of education	-----	Department of secondary and higher education	-----	--	Bangabandhu Sheikh Mujibur Rahman Maritime University	Researchers, University Professors
Ministry of Agriculture	-----	-----	Bangladesh agricultural development corporations	Sea Salt producing industry	Bangladesh agricultural research institute	Sea salt producer
Ministry of local government and rural development and co-operative	Bangladesh Rural development board	-	-----	-----	-----	-----
Ministry of foreign affairs	Maritime affairs unit,	-----	-----	-----	-----	-----
Ministry of home affairs	Bangladesh coast guard	---	Chittagong city corporation, Khulna city corporation	-----	-----	-----
Ministry of water resource	Bangladesh water development board	-	-----	-----	Bangladesh river research institute	-----
Ministry of science & technology	-----	-----	-----	-----	Bangladesh institute of biotechnology, Bangladesh oceanographic research institute	-----
Ministry of disaster management	-----	Department of disaster management	-----	-----	-----	-----
Ministry of land	Land reformation board	-----	-----	-----	-----	-----
PM Office	Bangladesh economic zones Authority	-----	Sustainable development goal cell	-----	-----	-----
17 Ministries	12 Authorities	11 Departments	8 corporation & 2 cells	9 industries	12 institutes	22 communities

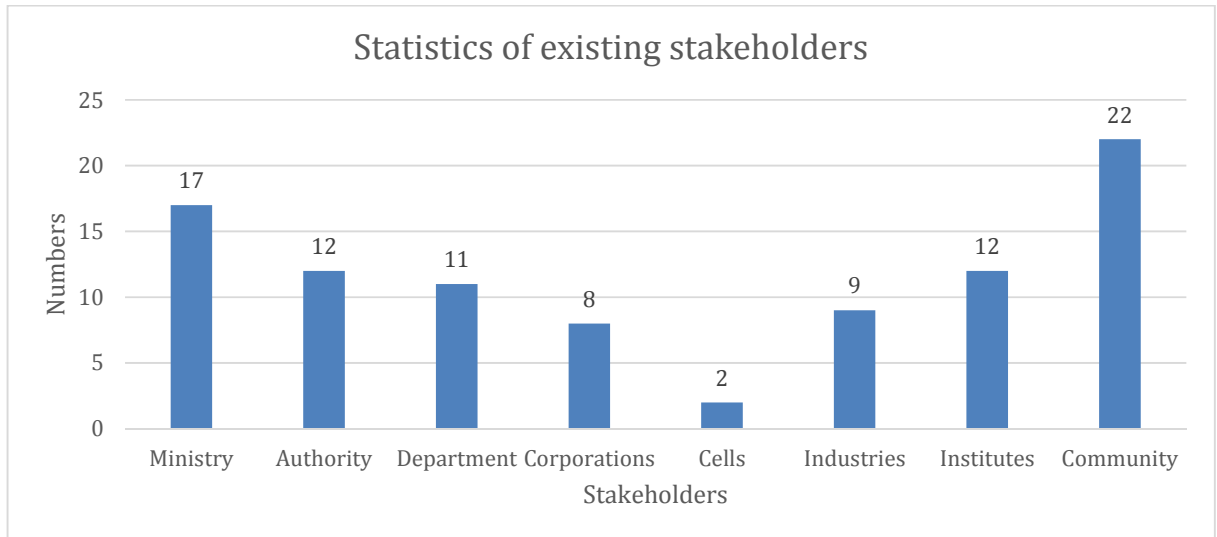


Figure 26: Statistics of existing stakeholders.

From the stakeholder’s analysis, it can be seen that there are a number of stakeholders who need to be coordinated together for starting the MSP process. But unfortunately, there is no competent authority who can co-ordinate all these stakeholders (MOFA, 2018). Therefore, the second theme is “Identifying the competent authority for coordinating the stakeholders of the MSP effort”.

6.2 Second theme: Identifying the competent authority for coordinating the stakeholders

As Bangladesh is still in the early stage of the MSP process, no organization is still ready to coordinate all these stakeholders. Almost all the respondents mentioned that Bangladesh does not have skilled manpower for starting the MSP process. R1 mentioned:

“The main challenge, I am facing in the ocean sector is unavailability of educated people.” (R1, 7.7.19. BEC).

10 respondents have mentioned that BEC can be the key organization to coordinate all these stakeholders. However, when the researcher asked BEC whether they have the

capacity and capability to co-ordinate all these stakeholders. BEC replied that they do not have such capacity to coordinate all these stakeholders.

“Government has told us to make a part about MSP in country’s 7th five-year plan. We made it, but in reality, still, we are far away from MSP. We do not have skilled manpower in the BEC to start the MSP process and to co-ordinate all these stakeholders” (R1, 7.7.19, BEC.)

About this issue, R2 advised having a separate ministry to look after the Blue Economy activity. That ministry can coordinate all these stakeholders.

“BEC in under the prime minister’s office, they are looking after the blue economy activity. May be in future we will require some ministry in this sector.” (R2, 8.7.19. DOS.)

In Bangladesh, Cell is a temporary authority, R7 mentioned having a department with skilled manpower to co-ordinate all these stakeholders.

“The cell is a temporary thing. In our country there was an LGRD Cell, Now the LGRD is a big department. Now it handles all the rural roads and bridges. So in my opinion, if you give the whole marine environment to a cell it will not work. But the government thinks cell is enough and after the preliminary work is done, it may be turned into a self-sufficient department.” (R7, 14,7,19, Environmentalist, CPA)

In addition, R3 mentioned that the Department of Shipping (DOS) can coordinate all these stakeholders. R3 thinks that DOS has sufficient manpower to coordinate all the stakeholders.

“I am not aware of any master plan right now. My organization can do a draft about this master plan and can coordinate all the stakeholders.” (R3, 8.7.19, DOS)

Thus, after coding all the interviews a table was created (see Table 5), representing the respondents view about the competent authority to coordinate all the stakeholders (see Figure 27).

Table 5: Who can coordinate all the stakeholders?

Who can coordinate all these stakeholders?						
Answer	Existing BEC	Existing BEC with skilled manpower and authority	BEC needs to be a department	Separate ministry	Other departments	No Idea
Respondent	R15, R16, R11, R12	R1, R4,R5,R6,R8,R9	R7	R2	R3	R10,R14,R13
Total Respondent	4	6	1	1	1	3

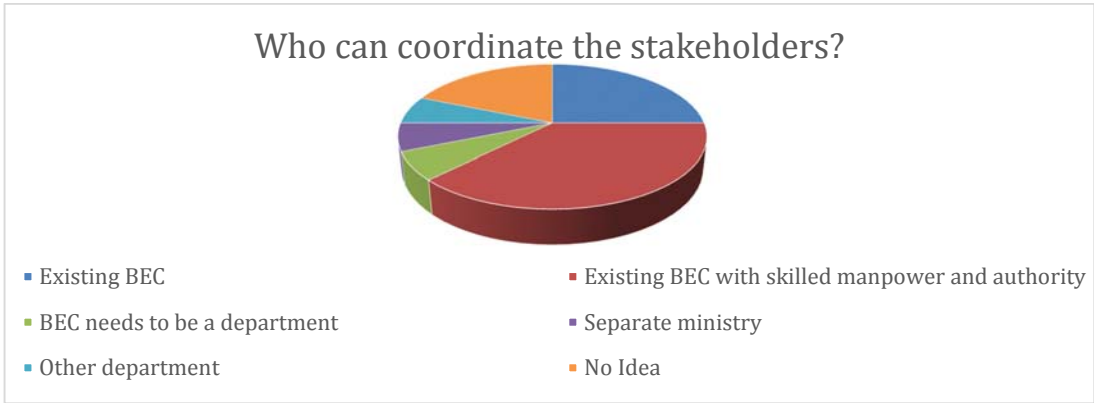


Figure 27: Competent authority for coordinating stakeholder.

According to Table 5, most of the respondents agreed that the present BEC with skilled manpower and authority can coordinate all the stakeholders to engage them early in the

MSP process. They have advised different views and ideas to engage stakeholders early in the MSP process. Thus the third theme is “The way of engaging stakeholders early in the MSP process”

6.3 Third theme: The way of engaging stakeholders early in the MSP process

For engaging stakeholders early in the MSP process, different respondents advised different ideas. Most of them agreed that proper education about the ocean is the best way to engage stakeholders early in the MSP process.

“To bring all these people together, what we need is education. Syllabus of every school & college has to be changed. Our country is no more riverine country rather we are oceanic country. Thus our mindset has to be changed. We have to keep telling the people about ocean and its uses. Then only we can think, these stakeholders will come together”
(R1, 7.7.19, BEC)

About education R1, R10, R9, R7 suggested to include ocean literacy and ocean awareness from the Scholl level. Moreover, R9 suggested making some drama in Bengali and stage that drama to build ocean awareness.

“The common thing to do is there should be ocean-related subject from time to time in different stages. I have done something in that regard in my little capacity. In our KG school and primary school here in BMA, we try to teach them about ocean especially pollution, if we pollute the chain how it will affect the chain, how it will affect the food generation, how it comes to us. We have made it into a story. We have made this story in Bengali and staged a drama from our perspective. And then we try to show them. I think it’s a very effective way if you want to change somebody from the inside.” (R9, 15.7.19, BMA)

R13 suggested to take the help of the media including radio and television. Besides, R4 suggested making YouTube videos to increase ocean awareness and literacy.

“We can make a program on radio or television for increasing ocean awareness. This program will create ocean awareness. Once the people are aware of the ocean and its uses, they will automatically engage themselves for managing the ocean” (R13, 25.7.19, BMFA).

When stakeholders meet with one another, they can share their ideas, views, and perception about the ocean. Thus R6, R8, R11 suggested having regular meetings and dialogues to engage stakeholders early in the process.

“Regular meeting and Dialogue among stakeholders can encourage early stakeholders’ participation in the MSP Process” (R6, 14.7.19, CPA)

On the other hand, R3 thinks stakeholder’s engagement comes from business interest. If stakeholders feel that the proposed MSP will help their business, then they will automatically engage themselves in the MSP process. Besides, R14 thinks there is a lack of trust among stakeholders, and stakeholders and government. He suggested the government to arrange workshop, seminar, and symposium for building trust among stakeholders

Thus after analyzing all the interviews, a table was created (Table-6) to represent the respondent’s view about the way of engaging stakeholders (Figure 28).

Table 6 : Way of engaging stakeholders early in the MSP process.

How to engage stakeholders early in the MSP Process?						
Education				Meetings and dialogue	Workshop, Seminar & symposium	Commercial Interest
Education from school level	Education through media	Education through YouTube	Education by staging Drama			
<i>R1,R2 R10, R9,R7, R15,R16, R12</i>	<i>R13</i>	<i>R4</i>	<i>R9</i>	<i>R5,R6,R8,R11</i>	<i>R14</i>	<i>R3</i>
<i>10</i>				<i>4</i>	<i>1</i>	<i>1</i>

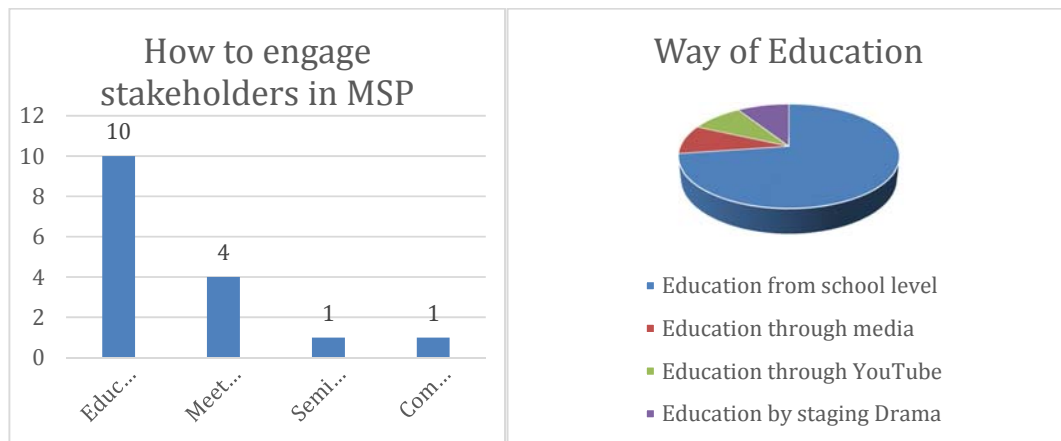


Figure 28: Way of engaging stakeholder.

According to Table 6, ocean awareness and education are the key to engage people early in the MSP process. In addition, meetings and dialogues can help to engage stakeholders early in the process.

6.4 Fourth theme: Identify the existing conflicts and the way of resolving conflicts among stakeholders.

The maritime area of Bangladesh has been used by the various potential stakeholders including fisheries, ship recycling, shipbuilding, shipping, oil and gas exploration, tourism, wind energy, military, and MPAs. According to Douvere – “*In the ocean different user have different objectives. Since they have different objectives, these objectives are overlapping with each other. Users of the ocean are competing with each other to get their space in the maritime area. And most of the users are not compatible with each other and have an adverse effect on each other.*” (Douvere, 2008). As all the stakeholders in the ocean have different goal and objectives, they want their ocean space in their own way. Thus stakeholders are conflicting with each other to get their space in the maritime area where each of them has potential growth.

Bangladesh has two types of conflict in the maritime area including user-user conflict and user-environment conflict. Therefore, to resolve all these conflicts the government is trying to involve all the stakeholders to set the priorities (Hossain et al., 2016). While conducting the interviews, the interviewees were asked about the major sectors in the ocean space. According to their answers, 6 major sectors in the ocean space have been taken and prioritized (see Table 7).

Table 7 : Priorities of stakeholders.

SI No	Sectors	Ranking
1	Fisheries	1
2	Port & Shipping	2
3	Nature conservation	3
4	Oil & Gas extraction	4
5	Coastal industries (Shipbuilding, ship recycling, Salt Production)	5
6	Recreation	6

According to the UNESCO step by step approach, before resolving the existing conflicts, the government has to identify the existing conflicts among users. Thus, the interviewees were asked about the existing conflicts among stakeholders. R1 mentioned about the conflicts among stakeholders within one sector and stakeholders in different sectors.

“Yes, of course, there are conflicts among the stakeholders. Like fishing, they have a huge conflict with tourism department. Even they have internal conflict among themselves. Like shrimp fisheries, they have conflict with Hilsa fisheries. Where people think there is money, conflict starts to grow.” (R1, 7.7.19, BEC)

Sometimes conflicts start with overlapping responsibility, thus R2 emphasized overlapping responsibility among the stakeholders. For example, in search & rescue (SAR) operations, DOS is the national coordinator of SAR and Bangladesh Navy is the maritime SAR center. Hence, for overlapping responsibility, sometimes conflicts start between DOS and the Navy.

“There are some overlapping areas with other departments. Like in Search and rescue, DOS is the national co-coordinator of SAR and Bangladesh navy is the maritime SAR center. For this reason, sometimes conflicts start to grow.”(R2, 8.7.19, DOS)

Sometimes stakeholders do not know the exact authority to implement a matter; therefore, the conflicts start to grow. As a result, R3 mentioned that an unidentified authority for implementing or controlling a sector creates conflicts among stakeholders.

“There are conflicts, sometimes you cannot identify which is the main authority to implement a matter. Like in Bangladesh, we have a big challenge for controlling the fisheries. All kind of fishing permission comes from the ministry of fisheries. And fitness and other issues of the vessels come from DOS. Thus there is a dilemma about controlling the fisheries.”(R3, 8.7.19, DOS)

As Bangladesh does not have fish stock assessment beyond 50 kilometers from shoreline, quite often industrial fishing boats fish in the fishing zone of artisanal fishing. Thus, industrial trawlers cut the fishing nets of artisanal boats and conflicts arise.

“Fishermen have conflict among themselves. The artisanal fishermen complain that fishing trawlers are destroying their nets and sometimes the nets go missing. For example one of their nets can cost around 12000 US dollar. If they keep losing one or two of these nets every year then they suffer a big loss.”(R13, 25.7.19, BMFA)

As Bangladesh does not have designated shipping route or lane for approaching Chittagong Port, often merchant ships approaching Chittagong Port have to pass through the fishing grounds, which creates conflict between shipping and fisheries. Sometimes they cut the net of the fishing vessels and hit the fishing boats.

“The ships approaching Chittagong port near Saint Martin Island sometimes have the problems and misunderstanding with our boats which are fishing near elephant points. Three years ago one vessel was missing because of this – It was late at night the vessel hit fishing trawler and the trawler sank. Many people died because of this incident. If there were any lighting or buoys in this area which would indicate that this area is for merchant ship, then fishing vessels would have avoided those areas and it would have minimized their risks.”(R13, 25.7.19, BMFA)

In addition, the economy of Bangladesh is escalating fast. To cope up with the growing economy, Bangladesh is building new ports in the coastal area creating new conflicts with the existing sectors, including fisheries and tourism. Moreover, Bangladesh is exploring six new gas blocks, which are near the fishing ground and ecologically sensitive area. This new gas exploration will create new conflicts in the maritime area of Bangladesh.

“Our economy is growing fast and with that economic growth, we need a quick expansion of port, which is going on. At the same time, our offshore energy extraction is still in process. And fishing is long practice and has a long heritage. But area is very limited and with that limited area the concentration of use is extreme, which creates conflicts among stakeholders.”(R8, 15.7.19, BEC)

From the above discussion, it is clear that there are many conflicts among stakeholders. Thus, after coding all the interviews, the researcher tried to identify the existing major conflicts among ocean users (see Table 8). Table 8 reflects the answers of interviewees about stakeholders' common conflicts. However, if the interviewees had been asked the question in a different way and angle, different answers would have been obtained. For example, during seasonal restriction (in June and July) for fishing, there are no conflicts between fishing and shipping because of the fishing ban in that period. Therefore, seasonal variation of conflicts and synergies would have been found among stakeholders from the interviews. However, such in depth questions were not asked about the conflicts among stakeholders. The scope of the thesis was to investigate the existing common conflicts; therefore, the questions about existing common conflicts were prepared and answers were obtained.

Table 8 : Existing major conflicts among stakeholders.

Existing major conflicts among stakeholders										
Stakeholders	Industrial fisheries	Artisanal fisheries	shipping	port	Ship recycling	Oil& gas extraction	Salt producers	Sand extraction	Tourism	Nature & Biodiversity Conservation
Industrial Fisheries	----	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Artisanal fisheries	Yes	----	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Shipping	Yes	Yes	----	No	No	Yes	Yes	Yes	No	No
Port	No	Yes	No	---	No	No	No	Yes	Yes	No
Ship Recycling	Yes	Yes	No	No	----	No	No	No	Yes	Yes
Oil& gas extraction	Yes	Yes	Yes	No	No	----	No	Yes	No	Yes
Salt producer	Yes	Yes	Yes	No	No	No	----	No	No	No
Sand extraction	Yes	Yes	Yes	Yes	No	Yes	No	----	No	Yes
Tourism	Yes	Yes	No	Yes	No	No	No	Yes	----	No
Nature & Biodiversity Conservation	Yes	Yes	No	No	Yes	Yes	No	Yes	No	-----

As all the existing major conflicts are identified. The interviewees were asked about the way of resolving conflicts. Different interviewees suggested different ideas; R11 emphasized one-stop service to resolve the conflicts.

“We have many rules but there are a lot of ambiguities. Here, several ministries are doing same thing, thus we have overlapping responsibilities. My suggestion is one-stop service is the best solution where you bring all concerned stakeholders in one room and they should decide about an issue. Then there would be no chance of conflicts.”(R11, 21.7.19, Ship Breaking yard association.)

R6 mentioned that the operational and knowledge gap among stakeholders creates conflicts. He suggested that negotiation can resolve such conflict.

“To wipe out conflicts we have taken some initiatives from time to time. Like earlier, we had operational gap with customs. For a cargo in the jetty, Customs and port both have jobs and formalities to do. Since we go by different regulations and we work under different organization, our interactions were not simple and used to have conflicts. During the last two years, with previous minister of shipping, we did several meetings and negotiated with customs to solve our long-lasting complicated matters. In that way we got some positive outcome in solving the problem with auctioned containers, which used to create big mischief in the jetty. Now, after discussion with customs, we have constructed an auction yard and we have taken out all the auctioned containers there. Thus we got a positive outcome.” (R6, 14.7.19, Chittagong port authority)

However, R1 mentioned that stakeholders need to change their mindset to reduce conflicts among themselves.

“We need to change our mindset. We have to change our habit. We have taken granted that whatever we throw to the ocean and whatever we do with the ocean, nothing will happen. We have to change this mindset. We need to increase maritime awareness. Then the existing conflicts will reduce automatically” (R1, 7.7.19, BEC)

In addition, R8 mentioned that there is a lack of integration between stakeholders; if the government can integrate all the stakeholders, conflicts will reduce.

“We have a lack of integration among stakeholders. Once we can integrate all the stakeholders, conflicts will die down.” (R8, 15.7.19, Bangladesh marine academy)

However, most of the interviewees agreed that regular meetings among stakeholders are the best solution to reduce the conflicts, to integrate the stakeholders and to reduce the knowledge gap among stakeholders, because in the meetings stakeholders can express their views and objectives of ocean uses. Thence, they may get a solution about a conflicting issue. Based on the interview answers, a table was prepared (see Table 9) to show the ways of resolving conflicts among stakeholders (see Figure 29).

Table 9 : Ways of resolving conflicts among stakeholders.

How to resolve conflicts among stakeholders?					
Answer	Regular meeting	One-stop service	Negotiation	Change of Mindset	Integration
Respondents	R2, R3, R7, R9, R10, R12, R15, R16	R11	R4, R5, R6	R1	R8,R13, R14
Total	8	1	3	1	3

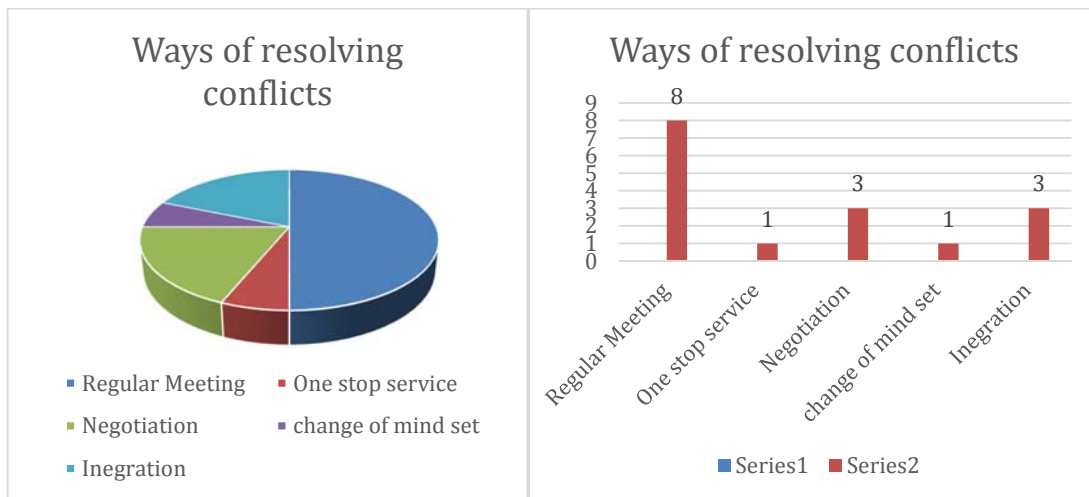


Figure 29: Ways of resolving conflicts among stakeholders.

From the above discussed themes, a number of stakeholders were identified and some ways were found to engage all these stakeholders, including meeting, seminars, symposium, ocean awareness, and literacy. Additionally, the existing major conflicts and way of resolving all these conflicts were identified. Thus, in the next chapter, all the collected data will be discussed and some ways to engage all these stakeholders and to reduce conflicts among stakeholders will be recommended. Besides, a competent authority will be recommended for engaging them early in the MSP process.

7.0 Discussion & Recommendations

7.1 Discussion

From the analysis of the first question, it is observed that Bangladesh has a multitude of stakeholders in different sectors (see Table 3), who are relevant to consider when developing MSP. According to interview results, In Bangladesh, there are six priority sectors including fishing, port, and shipping, nature conservation, oil and gas exploration, coastal industries and recreation sector. Each sector has many stakeholders, for example in fishing sectors, there are many stakeholders including artisanal fisherman, industrial fisherman, fishing vessel owner, fishing gear suppliers, fish party, Department of Fishing, Bangladesh Fisheries Development Corporation and many more. Like the fishing sector other sectors have also many stakeholders. Thus, to provide a clear picture of the stakeholders, this study has done a stakeholders analysis (see Table 4) based on the primary data provided by the interviewee. According to the interviewee and secondary data, among the stakeholders, fisheries and shipping are well developed. They are the prime stakeholders and they are concerned about their stake. They are trying to get more stake in the maritime area. Simultaneously, other new sectors including oil and gas exploration, salt extraction, tourism, mineral harvesting, and pearl harvesting are also trying extend their stake in the maritime area, creating huge concentration of ocean uses in the country's maritime area (Hossain et al, 2014). Thus, respondents suggested to identify the all the stakeholders before starting the MSP process. This corresponds to the scholarly discussion, where identifying stakeholders is considered as one of most important cornerstones of MSP process (Pomeroy & Douvere, 2008).

From the analysis of the second question, it is observed that Bangladesh already has a mandated body (Blue Economy Cell) to work with MSP and coordinate stakeholders in the MSP process, but it suffers from lack of knowledge and technical ability to implement MSP. According to the interview results, this cell does not have permanent manpower and expertise to co-ordinate all the stakeholders of the MSP effort. Thus respondent suggested that this cell should be promoted to a permanent department with expertise who has technical know-how about the MSP process (see Table 5, Chapter 6). This also corresponds to the scholarly discussion on MSP, where establishing authority for MSP often is suggested as one of the first steps in the MSP process (Douvere & Ehler, 2009).

From the analysis of third question, it is seen that there are several ways of engaging stakeholders early in the MSP process, including meetings, dialogues, workshops, seminars, and symposiums. Most of the respondents mentioned to change people's mindset about ocean and its uses by education. This education can be given in different ways, which include education from school, education through media (TV, Radio) and education through social media (YouTube, Facebook) (see Table 6, Chapter 6). Scholarly discussion about MSP also suggested that regular meetings, dialogues, and symposium can be arranged by a competent authority to engage the stakeholders early in the process (Gopnik et al., 2012).

From the analysis of the fourth question, a multitude of interest conflicts were identified between different stakeholders, including fishing with shipping, oil and gas extraction with fishing, tourism with port extension and many more (see Table 8, Chapter 6). Moreover, according to secondary data, as fishing and shipping are the prime sectors in the maritime area of Bangladesh, at first the government needs to identify the challenges and conflicts of these two sectors (Shamsuzzaman & Islam, 2018). Thus, to resolve these major conflicts respondents suggested different ways, which include conducting regular

meetings, one-stop services, negotiations, change of mindset and integration among stakeholders (see Table 9, Chapter 6). In addition, scholarly articles also suggested that ocean zoning and the place-based management approach can reduce conflicts among stakeholders (Crowder & Norse, 2008).

7.2 Recommendations

As mentioned in the country's 7th five-year plan (FYP-2016), to ensure the sustainable use of marine resources, Bangladesh wishes to implement MSP in the maritime area. However, before implementing MSP, all the ministries related to blue economy need to sit together and decide the objectives of MSP (Sarker et al., 2018). In addition, they need to think about the time period of MSP (Long term or short term). Then Bangladesh needs to collect the data of every existing and upcoming sector in the maritime area (R1, 7.7.19, BEC). Since preventing IUU fishing is a major challenge in the maritime area of Bangladesh, Bangladesh should increase the capacity of the coast guard and the Bangladesh coast guard should be more vigilant to protect the marine resources (R2, 8.7.19, DOS). Bangladesh should conduct fish stock assessment in the area beyond 50 kilometers from shoreline so that industrial trawlers can fish in the high seas, which will reduce the concentration of industrial trawlers in nearshore areas (R1, 7.7.19, BEC). As discussed in chapter 6, government should take initiative to register the artisanal fishing boat, which will reduce the conflicts between artisanal and industrial fishing boats (R1, 7.7.19, BMFA). To reduce conflicts between fishing and shipping, there should be a recommended route for approaching Chittagong and Mongla port (R13, 25.7.13, BMFA). There should be a data management policy and central database, where all the sectoral data should be stored. As blue economy is a new era in Bangladesh, the government should engage more researcher in this sector, who can help Bangladesh to make an effective policy for sustainable use of marine resources (Sarker, Rahman, Yadav, & Islam, 2019). While making the policy, Bangladesh should have a policy to balance between environmental conservation and economic growth, because user- environment conflicts

are the basic conflicts in the maritime area of Bangladesh. As discussed in Chapter 3, most of the existing legislation was enacted long time ago and is now insufficient for tackling new challenges and conflicts, so the government should review the existing policies to reduce the conflicts (Islam et al., 2017). As Bangladesh is trying to achieve the goals of NSDS, the government should ensure the sustainable use of the marine resources by adapting a proper management approach. Thus, Bangladesh should adapt the place-based management approach for managing the marine uses, which will reduce the conflicts among marine uses (Shamsuzzaman & Islam, 2018). After taking all these prerequisite steps mentioned above, Bangladesh may consider making a policy about MSP. However, while making the policy, the stakeholders' engagement is a necessity.

Therefore, to start the MSP process the government has to identify the stakeholders in the MSP process. To identify the stakeholder's, government may conduct a stakeholder analysis which will help the government to have a clear picture of the existing stakeholders that need to be involved in the MSP process. As most of the sectors are not compatible with one another, the government should check the compatibility of the stakeholders with one another. To check the compatibility, the government should arrange regular meetings, where all the stakeholders can share their views and objectives of ocean uses. To coordinate the meetings, the government should assign a separate department with an authority. The present BEC can coordinate this meeting, but for that, BEC should be promoted to a department with skilled manpower. To develop skilled manpower, the government should increase oceanic research activities in the universities. Once the BEC is manned with skilled manpower, BEC should engage the stakeholders early in the MSP process. Moreover, BEC should consider engaging stakeholders in all phases of the MSP process, which include planning, implementation and post-implementation phase. To encourage the early engagement of stakeholders, the government should educate the people through seminars and symposiums. Schools and colleges should include ocean

literacy in their syllabus. The government may take the help of media including T.V., Radio, YouTube and Facebook to make people aware of the ocean and its uses. In addition, workshops, dialogues, and consultations should be there, for identifying the major conflicts among existing Stakeholders. Government should arrange meetings regularly to resolve these conflicts. Moreover, stakeholders can start negotiations with one another to resolve the exiting conflicts.

8.0 Summary and Conclusion

The main purpose of this dissertation is to provide an overview of the maritime stakeholders in Bangladesh and better understanding of their engagement process, roles, relationship and conflicts in order to facilitate the government initiative about the MSP in Bangladesh. In order to meet this aim, four research questions were formulated, which would provide the information needed to better understand the overall aim of this research. To answer the research questions, the present study employed qualitative semi-structure interviews for primary data collection and the content analysis method for understanding the inner meaning of secondary data including articles, government policy documents, and graphics. While answering these four questions, this study discussed the present status of institutional and regulatory framework for ocean governance in Bangladesh, and suggested that the current piecemeal governance is inadequate to manage the ocean resources and an update of legal framework is required. In addition, this study discussed the plans, strategy, tools, and initiatives for ocean governance and proposed that MSP can be a suitable solution for managing ocean resources. Thus, this study discussed the potentials and challenges of the MSP effort in Bangladesh and provided information to overcome these challenges. Moreover, this study discussed the major maritime sectors in Bangladesh, which include fishing, ports and shipping, ship recycling, oil and gas exploration, tourism and marine environment protection and conservation sector. Thence, this study found that each sector has a number of stakeholders and these stakeholders are conflicting with other stakeholders within the sector. In addition, cross-sectoral conflicts are also available in Bangladesh where stakeholders of a sector are conflicting with stakeholders of another sector. Thus, the study attempted a stakeholder's analysis to provide a clear picture of the stakeholders in the maritime area of Bangladesh.

After analyzing all the data, this study has identified the key stakeholders that need to be involved in MSP process and the way of engaging them early in the MSP process as well as major existing conflicts among them and way of resolving these conflicts. Furthermore, since Bangladesh is still struggling to find a competent authority to make policy for MSP, this study recommended that a department with skilled manpower should coordinate stakeholders and make policy for MSP.

Bangladesh is one of the fastest growing economies in the world with a huge population. Thus, to support this huge population and economic growth, marine and ocean uses are increasing more and more. Therefore, Bangladesh is rigorously in need of an ocean management tool for managing its ocean uses and fostering its blue growth. However, after the boundary delimitation, the country's 7th five-year plan recognized MSP as a key tool to manage maritime resources in Bangladesh (FYP, 2016). The study suggested that to start the MSP process, Bangladesh needs to identify the stakeholders first to engage them early in the process because worldwide scientists, researchers, decision-makers and resource managers have agreed that the early participation and involvement of stakeholders is the key ingredient for the successful MSP process (Pomeroy & Douvere, 2008). Early engagement of the stakeholders can build trust among stakeholders and the government encouraging ownership of the plan. Further, it will help to reduce conflicts among stakeholders, sectors, and authorities. As Bangladesh is in the early stage of the MSP process, the government may arrange regular meetings to understand the views and objectives of ocean uses, which will help to reduce the conflicts among the stakeholders. Moreover, stakeholders' participation is not enough for a successful MSP process. The government needs to empower them for their full engagement. Activities directed to empower stakeholders, including ocean awareness, capacity building and ocean literacy aiming to change the view of the stakeholders about the plan, will help to sustain the MSP process overtime.

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Appendix

1. Transcription of interviews.

Respondent 1: R1

Q: What are the challenges, you are facing to perform your duty?

Ans: The main challenge, I am facing in the ocean sector is unavailability of educated people.

Q: Before doing MSP what should we do first?

Ans: To do MSP we need to identify stakeholders first.

Q: Who are the stakeholders? Do they need MSP?

Ans: Without MSP, Sustainable development of marine resources is not possible. Blue economy is a new term in sustainable development of marine resources. Blue economy is nothing but utilizing marine resources, directly or indirectly in the economic activity. It can be done in ocean or in coastline or in inland. But you need a marine input.

The problem of our country is, we don't have educated people in the ocean sector. Thus we have a huge lack of skilled manpower. In Chittagong University, we have marine science, it is operating from 1978. But they don't teach oceanography, they only teach marine biology. After delimiting the boundary of ocean area in 7th of July 2014, we proposed immediately that we need to start work on blue economy. On 2nd of September 2014, we did a blue economy conference in Dhaka. This conference was done to bring awareness in Bangladesh that, there are resources out at sea. Bangladesh can sustainably use it. By this time, in 2015, sustainable development goal was published – conserve and sustainably use the marine resources.

We have a huge number of stakeholders. But, we really don't have a ministry, who will look after and co-ordinate all these stakeholders. We have, ministry of fisheries- look after fisheries, ministry of shipping- look after ships, ministry of tourism—look after tourism, ministry of environment and climate change- look after environment. Ministry of industries -look after ship breaking.

We have identified that 26 areas, where sustainable development can take place. Major sectors are:

Fisheries: There are two-part of fisheries: Land fisheries and capture fisheries held at sea. Normally we can catch fish in 3 ways including trawling, longline and preselling. In our country, people catch fish by normal net.

We have 70000 wooden fishing boat, length of this boat are 30 to 35 feet. Because of their size, they can catch fish up to 20 to 30 km from coastline. Their size does not permit them to go much further. They go out at sea for 6 to 7 days. They keep their net in the sea, they don't have any support from anywhere. If they get fish they are happy, but if they don't get fish. They come back after 6 or 7 days. Among these 70 thousand wooden vessels, very less number is registered. This wooden boat is a threat to fisheries. As they take a small amount of ice with them. They can't store enough fish. Suppose initially they have caught some fish, they store it in the ice. In 2nd day, maybe they got more expensive fish like Hilsa. Then they through all those fish to the sea and store Hilsa. Maybe in 3rd day, they have caught more expensive fish like Vetki and Tuna. As they don't have enough storage, they through all those stored Hilsa to the sea. Thus they spoil a lot of fish. Every wooden boat having 10 people working in the boat. Thus we have $700000 \times 10 = 7000000$ people fishing at sea at any time of the year. Now we have a seasonal restriction of 65 days. Within this time any fishing activity is ban in the Bangladesh water. And government is giving 40 kg of rice per family per month. But then also these fishermen are going with wooden boat to catch fish. Another problem with this wooden boat is that what fish they catch, nobody knows. There is no landing facility organized in our country. Once upon a time, we used to have fish harbor. But now it is stopped. In every country, there is landing facility. In landing facility, every fish is measured. This 70000 boat, some go to Khulna, some go to Barisal, and some go even in India. We don't have any concern.

We have more than 250 steel body trawler registered in our country. They go up to 50 nautical miles. We got 660 km long sea area from coastline, and we have got 2300 m deep sea. But we are only utilizing 50 km. that means after 50 km there is no fishing boat in Bangladesh water. We don't have any long line fishing boat or any preselling fishing boat. Only we have is trawler. But the main problem with trawler is, they damage bottom habitat by bottom trawling. Last year 80 lac ton fish is been caught in the BOB. But we have only caught 93000 tons. In BOB, we have large fish like Vetki (Barramundi or Asian sea bass) and yellowfin tuna, we can't catch those fish, as we don't have long line fishing.

Other marine living Resources: In Bangladesh, we have underwater marine living resources including seagrass, seaweed. Nobody/no ministry is taking care of this sector. Forest ministry looks after only trees on land. And ministry of fisheries and livestock looks after only fisheries. Thus there is no ministry for marine plants. So, nobody is owning seaweed or sea plants. But from this sector, we can make food or medicine. But we can't use this huge opportunity. These are our problems in the system.

Mari-culture: Now come to the Mari-culture. We have done well in aquaculture inland, thus we are happy. We produce only 2.6% of world fish by culturing. China only produce 61% of world fish by culturing. But land culture damages the environment including damaging groundwater. Again we use fertilizer, and those fertilizer drains down to the sea creating pollution at sea. Thus zooplankton and phytoplankton are destroyed creating oxygen deficiency in the water. We don't have Mari-culture. If we could do Mari-culture in seawater, we could have ensured supply of fish throughout the year. In Mari-culture, we require net and technology that we have. But we need to start the process. We are not doing it. We spent a lot of time (40 Yrs) in pond for producing Hilsa fish. But we could try producing Hilsa fish in the sea. We could have succeeded. In Norway, they started Salmon fish cultivation in 2008. Now they are the number one in Salmon fish production in the world. But we don't take any initiative in this sector. We must start open sea Mari-culture, but who will do it. Fisheries ministry is happy, what they have.

Fish stock assessment: We must have a stock assessment for fish. In 1977, we have done a stock assessment. After that, we didn't do any stock assessment. We have bought a research vessel, MV Meen Sondhani, but it is of no use. Meen Sondhani has only one engine, which creates noise. Thus, with this we can't do stock assessment.

There are a lot of scientists who have worked with seaweed. But they didn't make any taxonomy. We don't have any database. From where we will be able to know that we have these seaweeds.

Now come to the mangrove, it helps a lot of fish, where fish spawning can take place. But we are cutting mangrove. We are producing wood from mangrove. It is a UNESCO world heritage site. But we are not protecting it. We don't obey the laws and regulation. We declared it as MPA but. But we don't enforce the law.

We have 80 billion dollar trade of import and export. Thus we require a port. Our business is growing 10 to 15% per year. We are making new ports including Matarbari, Payra port. For carrying this trade, 3000 ships are coming to Bangladesh. We giving freight of 5 billion dollars to the foreign shipping companies. But we could have kept this money for our country if we could own some shipping company. Our GDP could increase 1%. But we don't have ships, we have only 46 ships. There is a huge knowledge gap in investment in shipping. Another problem is that ships don't want to come Chittagong port, as ships suffer a lot, coming to Chittagong port. But if could own more ships, we could have more job opportunity for local people including seafarer, repairer, tugs crew, salver, manage, designer, builder. Our feeder ships go to Singapore, but these ships could have gone to the Colombo. If we take Colombo for feeder service, shipping time could be reduced.

Now come to the regional trade, coastal trade. Except for India, we don't have any coastal trade with other countries. We bring container from Chittagong to Dhaka by train. But we don't use sea/river route to bring this container. 65 % of our industries are in Dhaka, we didn't decentralize this industry. Industrialist prefers Dhaka for industry for safety and security.

Now come to tourism. It's a 1.3 trillion dollar industry. But we don't utilize this sector. Even, no foreign tourist ships are coming to Bangladesh. We have mangrove, and Cox's Bazar sea beach, but there is no way to visit this natural beauty by waterways. We couldn't arrange safety and security for tourist. There is lot of projects but no implementation of these project. Corruption is eating up everything.

Now come to the ship breaking. Is a single shipyard complying with an international rule? They are polluting a lot the sea. Dying industry in Dhaka they are also polluting. Our Burigonga River has already died. And river water is going to the sea. Thus sea is also polluted. We are taking any steps. And there is no implementation authority also.

Now come to the shipbuilding. We are building 0.8% of world ships. If we could take it to the 1 %, it is a 200 billion dollar market. But we are not progressing, because we doing corruption in this sector also. We are using 2nd graded plate for building ship, which makes our reputation down. And importing 1st graded plate, we are selling those plate and making profit. 90% people are corrupted, that is core barrier for our economic development. That is the root cause.

After 2014, we have started the oceanography course. But we could have done it in 80's. If we could have started this course that time. By this time we could have skilled manpower. Because our mindset was, we are riverine country. We don't have any story about sea. That's why we didn't think of sea. Thus from childhood, our kids don't think about sea. We have huge lacking in capacity building in ocean issues.

The main problem of our country is we are not able to identify all the stakeholders yet. Some of the sectors are in very early stage, and some of the sectors are well developed. Like shipping is more or less developed. And fisheries is somehow developed. Thus when all the sectors are not well developed, how you could implement MSP. Still, we don't know who the real stakeholders in marine are / ocean sector.

Thus you have to identify the stakeholders, and their stake i.e. how much stake, they are possessing. We have to identify this. Then only you can implement MSP.

7000000 people are engaged with fisheries, we have to take care of these people while doing MSP. In mangrove, 500000 people are engaged for their livelihood. You must take care of these people while doing MSP.

You have to improve law and order situation, there is pilferage in fishing and mangrove. You have to improve law and order. We have a seasonal restriction for fishing. But we don't follow. Thus in all sphere of sea life, we cannot maintain standard. Thus MSP cannot be implemented in our country.

Q: What is the job of your organization in MSP effort?

Ans: I am just doing the policymaking job for MSP.

Q: Do you think that we have conflict among stakeholders?

Ans: Yes of course.

Q: What kind of conflict?

Ans: Like fishing, they have huge conflict with tourism department. Even they have internal conflict among themselves. Like shrimp fisheries, they have conflict with Hilsa fisheries. Even after catching fish, they don't have space to sell. There is no good place or market to sell all these fish. Where people think that there is money, conflict starts to grow. Another new conflict is with the existing industry. Like RMG sector. If we invest in RMG, within 5 years we can buy a new car, a new house. As it is easier and more confirm way of earning money. People don't want to invest money in ocean sector with huge uncertainty.

Q: How to overcome existing conflict?

Ans: Thus we need to change our mindset. We need to increase maritime awareness. First, we need to increase maritime education. From primary school, we need to start ocean literacy. After education, we must think about maritime awareness. Still, our people don't think about ocean. Then when you have equipment, then we can think about capacity building and technology transfer.

Q: How to bring together all the stakeholder?

Ans: You see the plan is one thing implementation is another thing. Government has told us to make a part about MSP in country's 7th five-year plan. We made it, but in reality, still, we are far away from MSP. To bring all these people together, what we need is education. Syllabus of every school college has to be changed. Our country is no more riverine country rather we are oceanic country. Thus the mindset will be changed. We have keep telling the people about ocean and its use. We have to change our habit. We have taken granted that what we through to the ocean, nothing will happen. We have to

change this mindset. Then only we can think that this stakeholder will come together automatically.

Q: Please tell something about the grey zone?

Ans: It is a small area.

Q: What about IUU fishing?

Ans: As I have mentioned to you earlier, 70000 wooden boats are IUU fishing. They are not reporting anywhere. Thus we must take care of them.

Respondent 2: R2

Q: What is your organization's Role?

Ans: DOS is the maritime administration of Bangladesh. It oversees maritime safety, maritime security, and also the pollution preventions generated from ship. We have several offices and sub-offices or field offices. One of them is MMD which look after the flag state and port state activity. We have a shipping office which looks after the employment of seafarer and seafarer welfare directorate which look for the wellbeing of seafarer. We also oversee the maritime training activity of Bangladesh. Their infrastructure, their curriculum, and their quality and the training syllabus. And we also monitor their activity and conduct assessment for the seafarer. We also provide Navigational aid facilities along the coast of Bangladesh.

Q: Is your Organization a maritime stakeholder of Bangladesh?

Ans: Definitely DOS is a major stakeholder in Bangladesh.

Q: Who are the prime stakeholders in Bangladesh?

Ans: Prime Stakeholders in Bangladesh are fishermen, fishing companies, shipping companies, mineral and gas extraction companies, Bangladesh navy, Bangladesh Coast guard.

Q: What are the main challenges in the maritime area of Bangladesh?

Ans: We have many challenges, but the prime challenge is an acute shortage of skilled and technical manpower.

Q: How to overcome this challenge?

Ans: To overcome this challenge, we have proposed new organogram to recruit new people. This new organogram consists of 1000 personnel for DOS. Presently we are having manpower of (246+156 = 402) 402 people. For infrastructure, we have planned for a new office, new command, and control center in Dhaka, Agar Gao. The building is under construction.

Q: As Chittagong is the maritime hub, why you are building infrastructure in Dhaka?

Ans. It is the headquarter only, But we will have sub-offices in the coastal area also. There will be coastal radio station and light hoses in dublar char, Char kuri-mukri, kuakata, Nijhum Dip, Kutub Dia, coxs bazar, St martin island. These station will be having facilities including VHF, MF-HF, AIS, and WX monitoring facilities. Navigation lighthouse facilities. We are planning to decentralize.

Other Challenges we are facing is infrastructure facilities. Presently we are building offices in different parts of the countries. For the inland waterways, we are building 13 offices, in strategic location areas. They will consist of survey officers and inspection officers. Similarly, we have proposed for marine offices in Mongla, Khulna. New offices will be in Coxs bazar , tekna. Kuakata. Ther will offices in all over.

Q: Where are the conflicts exist, while performing your duty?

Ans: Basically there are no conflicts while performing our duties, but there are some overlapping areas with other departments. Like in Search and rescue, DOS is the national co-coordinator of SAR and Bangladesh navy is the maritime SAR center. Finally, as the discussion goes. When the Bangladesh coast guard is sufficiently manned, then all the activity will be controlled by the Bangladesh coast guard. No matter, where the responsibility, all the entity of government is co-coordinating with each other for the accomplishment of the responsibility.

Similarly, the DOS is carrying out the maritime domain awareness by vessel monitoring system and AIS. LRIT and other means. Bangladesh coast guard has taken one activity for radar surveillance in the maritime area of Bangladesh. The data will be shared by each other so that the nation can be benefitted.

Q: Do you have a central database for sharing all this information?

Ans: As I have mentioned you the establishment of GMDSS and integrated maritime navigation system, we have a periphery for Chittagong port, Bangladesh navy, and Bangladesh coast guard. That means that whatever the information we have, they will be able to see it. And we have requested to Bangladesh coast guard, when they will establish radar surveillance system, to give us a periphery, so that we can have the information. This information will be used for the purpose of that organization. Like we shall be using this information for the pollution prevention and safety uses.

Q: To overcome the challenges what is required?

Ans: To overcome the challenges coordination among the agencies is very much necessary. And the MOU between the agencies is also needed. In terms of IMO activity,

we have an MOU with Bangladesh coast guard, Bangladesh Navy, environmental department, Bangladesh meteorological department, Chittagong port, Mongla port, and Payra port. That means, they will be co-operating with department of shipping or implementing the functions as an IMO obligation. They will be cooperating us with IMO obligating.

Q: Do you know about MSP?

Ans: I know something about MSP. I don't know every detail about MSP. It is the knowledge and information about the zoning of the maritime area for particular purposes and activities.

Q: How MSP could be used in Bangladesh?

Ans: MSP is a useful tool for conserving the ecosystem. For example, Bangladesh area is divided into many sectors including fisheries zone, blocks for oil and mineral resources. And also we have heritage for mankind – Sundarbans. We need to protect this area and for protecting this area. We need to make MSP.

Q: Challenges and opportunities for MSP?

Ans: Still we are in the primary stage. Not much work has been done yet in this area. It is in the discussion stage only. We require knowledge and manpower for implementing MSP. And the infrastructure and resources are also required.

Q What do u know about the Blue economy?

Ans: The blue economy is fishing activity, shipping activity, and tourism activity. These are all blue economy initiative. Bangladesh government has formed a blue economy cell for coordinating this activity. In fact ministry of energy & mineral resources coordinating all the stakeholders including MOS, MOE, MOFA, DOS, Marine fisheries department, navy, coast guard, Petro Bangla.

Q: Do u think that we require a separate ministry for the blue economy?

Ans: BEC in under the prime minister's office, they used to look after the blue economy activity. BEC is now just coordinating, but the ministry of energy and mineral resources has given the responsibility to house the blue economy cell. May be in future we will require some ministry in this sector.

Q: Can you tell me about MSP?

Ans: For developing a framework some entity has to give some responsibility for spatial planning. Till today I don't have any idea about it.

Q: Can you tell me about ocean governance?

Ans: As per the SDG, we need to set out some goal about ocean governance. Government is already taken some initiative about ocean governance in the national plan.

Respondent 3: R3

Q: What is your organization's role in maritime area of Bangladesh?

Ans: This is the department of shipping. The fundamental goal of DOS is to work as the maritime safety administration. Generally, it looks after the overall safety of the maritime domain in Bangladesh. Maritime domain means that to ensure the safety, security of the ship. We work in line with different IMO convention, which means these are the guiding principle. Along with that, we are abiding by local rules and regulation. Existing law is ISO 1976 i.e. Inland shipping ordinance 1976 and Bangladesh merchant shipping ordinance 1983. Both of these two marine legislations are very old and we are trying to update both of these two regulations. And also giving effect to all the IMO Conventions that Bangladesh is already ratified. Having done these, I think the works of DOS will be easier and address all the issue.

In respect to the inland shipping we, we generally design, a regular survey of the ship and provide COP, also undertake the responsibility of the ship as per the merchant shipping ordinance that is approval of the design of ships. The survey, registration and all other the statutory needs are also addressed for the fishing vessels and all other vessels operated in Bangladesh. Safe manning and all other statutory regulation, this is all about the in general role of DOS. In addition to these, we also comply with flag state control and coastal state control.

Q: Who are the main stakeholders in the maritime area of Bangladesh?

Ans: If you talk about the government organizations, then stakeholders are different ministries including MOS, MOE, MOFA, MOFLS, MOT, and MOE.

If you talk about the shipping, it is not only the port and shipping. There is many other organizations which are related to shipping. Those are the stakeholders also. Those include, ships, port, different agencies from port, shipping agents, liners operator, even the truck drivers, customs and immigration are also stakeholders in maritime domain of Bangladesh.

Q. Do you think that your organization is a stakeholder in the maritime domain of Bangladesh?

Ans: Definitely DOS is a stakeholder in the maritime area of Bangladesh. Again it is the maritime administration or regulator of other stakeholders in the shipping sector of Bangladesh.

Q: Do you face any challenge to perform your duties?

Ans: Whatever the instruction comes from IMO as a maritime administrator, as a member state we have to give the effect of all these conventions to the national maritime

legislation. It takes time. There are differences like ocean-going vessels and inland vessels. Ocean-going vessels have to comply IMO conventions immediately after these are enacted in IMO. In the domestic shipping, they are somehow immune to follow all these conventions. As per SOLAS convention, it is said that only less than 500 GRT ships are exempted from conventions, but still, there are certain things we have to comply in the inland vessels. Likewise we try to follow the guideline of IMO and implement those in the national legislation. This is the challenge, as the law-making process takes time and implement the rules and regulation in domestic area.

No 2 challenge, we have the limitations.

Now a day's most of the countries have gone to digitalization. As Bangladesh is a member state of IOMOU, whatever the port state control you do, make a report to the IOMOU. And these are also published in IOMOU website, and you can see the status of Bangladesh with respect to complying the responsibility as a port state. Sometimes we have different types of ships coming to Bangladesh, and they have different types of statutory regulations, whenever the ships coming to Bangladesh, we are conducting PSC. Sometimes ships are detained, when it is detained then different entity gets involved. Sometimes we have limitations of surveyors, availability of P & I club.

We also have other issues, like the entire coast of Bangladesh is not covered with radio linkage or radar surveillance. Sometimes we remain devoid of information and that may lead to any kind of security and criminal threat. Bangladesh has taken up a project for GMDSS and INS. I hope this facility will be in place within 2021, and by then Bangladesh will be able to monitor ships and craft coming to Bangladesh.

Q: Do you face any conflict of interest with the other stakeholders?

Ans: There are conflicts. There is overriding responsibility, sometimes you cannot identify which is the main authority to implement the matter. Like in Bangladesh, we have a big challenge for controlling the fisheries. All kind of fishing permission comes from the ministry of fisheries. And fitness and other issues of the vessels come from DOS. There is a discussion going on, all the permission should be given from one station. But the problem is department of fisheries is not well equipped. Complying the convention including SOLAS or MARPOL is not in hand of DOF.

Bangladesh coast is generally very shallow, all the traffic coming to Bangladesh follows a particular channel. That's why this area remains very busy throughout the year. As the blue economy initiative is taking place, economic activities increasing, everybody is looking towards sea. Traffic intensity is increasing and lot of accidents is taking place. This is the area we need to look after carefully. Thus we need to have a TSS in the area, we need a Traffic separation zone.

Q: Do you have any idea about MSP?

Ans: Every nation needs to have a kind of master plan. We need to have a master plan including activities which can be conducted in which area of the ocean. It is also difficult to demark all the areas.

Q: Can you describe some stakeholders of MSP?

We have a mangrove forest, Sundarbans-world heritage. Any kind of fishing activity is not allowed in that area. In Bangladesh, within 50 to 60 nm of the area we have all the fisheries activity. We have different types of fishing including artisanal and industrial fishing trawler are conducting fishing in the same area. There come conflict. Ministry of fisheries have a regulation that industrial fishing vessel would not fish near to the coast, they have to go beyond 40 m depth. But going beyond 40m depth needs research. Whether they are fish habitation is available or not. Since 1958 until 1992 and 2006, total 15 research was conducted through FAO to ascertain the fish stock. But in 1958, a very comprehensive survey was carried out under FAO. They ascertain 450 different types of species and finfish were available in BOB. This was the fundamental research. Based on that other researches were conducted. There are different mammals, shellfish, finfish, and shrimp. As finfish has commercial value and they are available near the coast of Bangladesh and they are available within 60 nm. And the shellfish, they generally they are deep water fish. As matter of fact all the fishing activity in concentrate in one area. There is no survey, whether there is fish available in the deep water or not. And information could be given to the fishing community. Then they will make an effort to fish in the deeper water. This is the purpose of MOF. There is a limitation about fishing technique. We have only bottom trawling which damaging the seabed. What kind of fishing gear they can use. This thing should be regulated. There must be regulation on that.

Mineral and gas: Government has identified and demarcated 26 blocks. It needs govt. initiative to explore these resources.

Tourism: we have largest unbroken sea beach in the world, and another island we have, which is very good tourist spot. Sundarbans is also another tourist attraction. But we don't have much private initiative. Ecotourism and normal tourism need to come up in a significant manner, which can make the tourism sector vibrant.

Shipping: We have two types of shipping eastbound and westbound. Westbound ships go to Chittagong to Colombo and different oceanic areas. And eastbound ships using Singapore and goes different areas. These are the two shipping lines established by Bangladesh. After the demarcation of maritime boundary, Bangladesh is taking a lot of initiative, and thus the master plan can be achieved.

Q: What is your suggestion to engage all those stakeholders?

Ans: Engagement of stakeholders comes out of commercial interest. If you see the location of Bangladesh, there is a huge potential to connect east and west. There is very less initiative to connect east and west and south Asia and South East Asia. The kind of shipping business is conducted by this part of the world is through mainline operators. We are bringing good from Europe to Bangladesh via some transshipment hub including Singapore and Colombo. Sometimes it is port Shalala and some other Malaysian port. If South Asia and South East Asia could be connected by coastal shipping then the business pattern could have changed.

If we see the state of merchant ships, there are almost 55000 ships in the world. And most of the ships are owned by the Asian countries. This is the business of Asia. Most of the business is done by the liners. The liners don't encourage others to come in the business. There is shortage of goods but there is no shortage of ships to carry those goods.

Other prospects of the business are, if it is connected with coastal ships, then south Asia and Southeast Asia would be benefited. Because these countries are rich in processing coastal ships. We don't have facilities to make big ships but we do have facilities to build coastal ships.

Q: Do you think MSP should be implemented now or afterward?

Ans: a master plant should be done now.

Q: Do you know anything about any master plan?

Ans: I am not aware of any master plan right now. My organization can do a draft about this master plan.

Respondent 4: R4

Q. What is your organizational role in the Maritime industry of Bangladesh?

Ans. The role of this university is to secure and manage maritime resources keeping the focus on Blue Economy, this is a specialized university for this. The focus of our Department, department of oceanography and hydrology, is to harness and properly utilize the living and nonliving resource and also to start producing skilled manpower for doing so. Bangladesh Government also has some plans like Delta Plan, Vision 2021 all of those are focused on blue economy and climate change. As you know climate change is inter-related to ocean. So if we can study ocean we can get some insight on climate change too. These ocean study, climate change along with weather forecasting is all a combined process. This university is set up to create better manpower and harnessing ocean resources.

Q. According to you who are the Main Stakeholders?

Ans. Bangladesh Navy, Bangladesh Oceanographic Research institute, Different universities, where maritime-related courses like Oceanography, Marine Biology are there. Examples are Chittagong University, Potuakhali science, and Technology University, Noakhali Science and Technology University, Khulna University, Dhaka University.

Q. Can you please put some light on Vision Delta plan 2041?

Ans. Climate Action and Renewable energy are related to our field of study. The marine ecosystem is changing, weather system is changing, and Rainfall pattern has changed. We can predict rainfall and forecast accurately due to change in weather pattern. The strength frequency of tropical storms has increased. So to study all this, we need to do study on oceanography. About Climate action, Costal canalization, sea-level rise, global warming all the effects are mostly felt in this coastal area.

Q. What kind of problems are you feeling when you are teaching. Are there any suggestions about what can be done in schools and so on?

Ans. In Secondary and Higher studies curriculum it will be beneficial to include ocean literacy. It's much talked about nowadays. Definitely, it will be a good idea.

Q. From your perspective, do you see any conflict between Maritime Stakeholders like Shipping, Fisheries, Port, Maritime Institutes, Maritime Governance, and Administration?

Ans: DOE has some rules and regulations about the coastal area and environment. Then there is newly started Bangladesh Oceanographic Research Institute (BORI), they have their own act. Also, there are other maritime organizations, they have their own rules and regulations. What happens here is different organization try to impose different sets of rules in the same place. So there is need to combine the sets of rules and regulations. All the stakeholders should sit down and talk about setting a set common Regulations and then there is a need to distribute specific works to specific departments so everybody knows their separate jurisdiction. Now what is happening is in the same area BORI and DOE is working and sometimes conflicts are arising and it's a major problem according to me. Best for everyone will all stakeholders to sit down together and work centrally.

Q. Do you have an idea about MSP, Maritime special planning.

Ans: I have not worked on this. But it's about making a plan about how to properly use the coastal areas. For example, suppose we have a Breeding area for specific fish species, so what to do about fishing in this area. We can decide that we will not do any fishing activity in those zones. Also for some area, we can decide that this zone is for doing research only so that we can check and see that ecosystem in not harmed. Another thing

we can think of is shipping lane. Shipping movements creates sound and also pollution which causes damage to different species of marine mammals living in the ocean. So if we can plan in keeping this type of things in mind it will be good.

Q. If you are given the responsibility of Planning what do you think will be your main challenge?

Ans: Different stakeholders have different jurisdiction here. The main challenge will be to get all the stakeholders to sit together.

Respondent 5: R5

Q. What's your role in your organization?

Ans. I am Additional Harbor Master of VTMS, I am looking after the Vessel Traffic Management Information System. As you know the traffic of vessels coming and going here are increasing day by day. So to control and to regulate the current traffic in the best navigable manner we have started this in 2015. Since the start, this project is running 24 x 7, three sixty-five days a year. Any ship coming into the port they report and after that, we become the custodian of the vessel to guide them and bring them to the anchorage. They wait there, waiting for our call and according to their birthing plan and schedule, we bring them inside. We guide the pilots for safer navigation, they stay, discharge their cargo and again when going out we guide them through. From arrival to the departure we are the custodian of the ship. We ensure their safe arrival and safe departure. This office is manned 24 hours. We have VTS Operators, VTS Supervisors and then I am overall in charge. We work on safety and security of all vessels coming to Chittagong port. Safety here means Safe navigation, safe anchoring, safe handling, and safe departure. In terms of security any security concerns we have the ready response with the help of law enforcing authorities, with the help of our navigation aids and all the audiovisual tracking points we pinpoint them and assist immediately as per the requirements. The result of all this from 2015 there is almost no issue security.

Q. What is your organization's role in the maritime sector of Bangladesh?

Ans. The organization has a great impact on the Bangladesh economy. 92 % import and export in Bangladesh is done through Chittagong Port. In 2008, the number of ships arriving and visiting the port was around 1800. In 2018, it increased to 3901. It's almost doubled. Sitting from this control room we guide this maritime traffic. Our organization ensures safe operation of the port and safe handling of the ships which results in progress of national economy and in the progress of the port.

Q. Who are the main stakeholders in your view in Bangladesh Maritime sector?

Ans. There are a number of players related to this maritime sector. If you start from this office. We are very much related to all the shipping agents, ship owners, C&F Agents, BGMEA, BKMEA, those who are producing and processing the products, the business community and so on. We are also related to the Customs Office. And to do all this we need skilled manpower, like here in the traffic departments, security people, equipment handlers, the truck drivers who are helping in transporting to facilitate the trade.

Q. Can provide information about other stakeholders?

Ans. Ok, if you say that we have ship owners, the seafarers, the maritime training institutions (to produce quality seafarer). To comply with the rules and regulations, we have the legislative authority, I mean, ministry of Shipping and Department of shipping. If you consider the blue economy projects we have the fishing community, ministry of fisheries. We are also exploring mineral and natural resources, so the ministry of energy is also involved. The offshore industry is also coming up in terms of oil and gas explorations.

Q. Do you think there is a conflict among these stakeholders?

Ans. As we talk with the people, the investors, we hear that they face some problems. There is a lack of correlation with one department to another one. But at this moment, with this implementation of new rules and the vision of current government, I think the gap between the authorities and organization are closing. I think in future I hope sitting in one table you can finish everything.

Q. Which are the rules?

Ans. For the investors to get into Bangladesh until the implementation of the project. There are a number of ministries, a number of authorities, a number of offices are involved. Sometimes I hear there is a gap in communication and understanding among these offices.

Q. What kind of gaps?

Ans. For example, for any offshore project, ministry of shipping is involved, the ministry of energy is involved, Bangladesh Navy and Coast Guard, Ministry of Environment, Ministry of Tourism. One project effects so many ministries. In their country, they get the approvals sitting in one table. If there are anomalies they solve in one table. But here for each and every point, they have to convince them, get the approvals – it takes a lot of time. Sometimes due to complaining of one of these authorities, the projects are getting abandoned. So this could be one of the barriers.

Q. What are your suggestions in closing this gap?

Ans. From my working experience if a separate wing or a separate cell is formed under Prime Minister's office or any other ministry, taking experts from all these authorities who are working in this particular areas, where people with knowledge and expertise will sit together and that particular group of people will give approvals to the particular projects.

Q. Do you know about Blue Economy?

Ans. This idea has just come to Bangladesh very recently. Mostly the navy officials are working there and a few government officers are involved. And their exposures and planning are basically paper-oriented and I don't see that many people know about it. Even if you ask the ministries that are involved with the sea, they also do not know that much. If they have a proper guideline what they are going to do and what are the results then it can be published and circulated to each of the departments, so they are aware of what this Blue economy cell is doing. Then it will be much easier to understand for authorities and people like us to understand what they are doing.

I know some people who are working in the Blue economy cell and they have their work scope. If you are exploring Gas, go to the ministry that is controlling this, have a seminar on what the Blue economy is doing. When it comes to fisheries-related things go to the related fisheries authority, let them know what your activities are, what you are going to do and what power government has given to you. If it is related to maritime trade, port operations, come to us, let us know, what you are doing, what are your roles, what authority is given to you, then it will be much easier to co-relate. They are working on some sustainable development goals in terms of sea. But I do not know what they are exactly doing, what power they have from authority and what their focus is. It has not been communicated properly.

Q. What challenges do you face in performing your duties in your current positions?

Ans. There are challenges in any government organizations. We haven't yet reached the international standards. Though we are performing almost 100% to our potential but still with shortage of logistics support, shortage of manpower, the beauracratc system and time delay to do the things which are required right now. All these are barriers we have to face.

Q. How to solve the skilled manpower problem?

Ans. Proper training system should be there at entry-level and beyond. Before taking any kind of job responsibility you must have proper training. You have to know what you can do better in future. Here in government organizations, I don't see that much foundation training, job-based on the job training

Q. Do you know about MSP?

Ans. Not much. This may be some projects which are implemented by IMO or other International Organization. I just heard about it.

Respondent 6: R6

Q. What's your role in your organization?

Ans. I am Deputy Conservator of Chittagong port Authority. As per Port Act 1908 as deputy conservator, I work as a deputy to chairman in the marine conservancy. My duty includes but not limited to pilotage, marine craft management, salvage, environmental protection VTMIS, Channel Navigation, Laying the buoys, navigation marks in the channel, accident investigation and also disaster management and preparedness activities.

Q. What is your organization's role in the maritime sector of Bangladesh?

Ans. Chittagong port is a special agency to perform port and shipping services under ministry of shipping. We facilitate all seaborne trade. Our first duty is to ensure safe navigation of vessel in the channel and pilotage. We train the pilot and maintain an efficient pilotage team. Overall we perform a pivotal role in maritime trade affairs. First, we bring the ship and unload the cargo - container, bulk and liquid form. We have two dedicated container terminals. We have general Cargo berths. Then under government and private owners we have unit terminals to handle liquid bulk and fertilizer bulks. Total we have 34 jetties in Chittagong port. We work by port ordinance 1976 to perform our duties. We have dedicated responsibilities to acquire area demarcation of port limit and we have the authority to sign contract with parties relating to port and shipping matters. We maintain the navigable channel and undertake developmental activities to build new jetties, container terminals. This is the principal seaport in the country. 92 percent of the import and 98 percent container cargo is handled here. We handle about 90 million metric ton bulk and 3 million TUES containers. We are in 70th position among 500 ports in the world. As far as following international conventions we comply with MARPOL and IMO convention, maritime safety convention, pollution regulation convention of IMO and we comply IALA convention.

Q. Who are the main stakeholders in your view in Bangladesh Maritime sector?

Ans. We are a prime stakeholder in the shipping sector and we maintain good relations with other stakeholders to maintain efficient port operation. It's like stroke of a cycle, if one stroke is not working properly then the cycle will not run properly. So for efficient operation of port, only the performance of port is not enough. The role of Port is to bring the ship, to load and unload the cargo. After the cargo is delivered to the yard or terminal it has to be dispersed to the hinterland and in that area role of other stakeholders are important like Customs, Shipping agents, stevedores, C&F agent, inland container depots, dept. of shipping, coastguard, navy, business community and other concerned ministry and organization. We, Chittagong port go by policies, norms, and guidelines, consistent with national and international maritime and shipping regulations. Like we comply with rules of the world customs organization. We deal with garbage as per MARPOL. Our

pilotage is conducted by STCW by efficient master mariners and pilots. So to perform our role as a stakeholder in maritime sector, we are doing continuous development, we are very sincere and dedicated to performing our duties and responsibilities.

Q. Who are the main stakeholders?

Ans. In the shipping sector Chittagong, Mongla and Payra seaport can be considered as the prime stakeholder, then customs, immigration, port health and quarantine, shipping agent, C&F agents, mainland operators, feeder operators, ship owners, concerned ministries, vendors, shipyards, shipbuilders, department of fisheries and mercantile marine department and so on.

Q. Do you think there is a conflict among these stakeholders?

Ans. As we talk with the people, the investors, we hear that they face some problems. There is a lack of correlation with one department to another one. But at this moment with this implementation of new rules and the vision of current government I think the gap between the authorities and organization are closing. I think in future I hope sitting in one table you can finish everything.

Q. Do you have challenges in performing your duties with these stakeholders?

Ans. Earlier there were discrepancies because we are not governed by single governing act like EU. Why they perform so efficiently, because of their single EU act, who call it SEAC. That gives you sharp edge angles to perform your duties properly. So if we can work under one umbrella and uniform policy and regulation then our operation will be smoother and more efficient. Like we have an interaction with department of shipping and customs, navy, and coastguard. But we are not bound by some binding responsibility. As per ISPC Code, it is duty of Chittagong port to safeguard our outer anchorage and channel as well as its duty of Coast guard also. Both these organizations are not bound by single binding responsibility. Ministry of Shipping has taken initiative to formulate IMO convention regulations. So all the IMO conventions are made compulsory to be followed by the individual under the maritime convention act of Bangladesh. Since it will be implemented then it will be compulsory to be followed by everyone and then we can work under one umbrella.

Q. If we want to bring all these stakeholders together what kind of challenges are we going to face?

Ans. To wipe out challenges now we take some initiatives from time to time. Like earlier, we had operational gap with customs. Because we were apart though we were working in the same terminal, same jetty for a cargo. For a cargo, there is Customs concern and there is port concern. Since we go by different regulations and since we work under different organization our interactions were not simple and sincere to elevate the problems and face challenges. For last two years, with previous minister of shipping we did a lot of

meetings with customs to solve our long-lasting complicated matters. Thus we got some positive outcome in solving the problem with auctioned containers, which created big mischief in the jetty. Now with discussion with customs we have constructed an auction yard and we have taken out all the auctioned containers there. This is a positive outcome we got.

Then to solve other outstanding problems, we have progressed to a satisfactory level. Same problems we had with the department of shipping. Our relation is excellent now with the dept. of shipping. Dept. of shipping is the administrator of ISPS code and Chittagong port implements ISPS Code. It's their duty to supervise our performance. And we carry out navigation in the channel. It is a duty of dept. of shipping as per inland shipping ordinance or merchant shipping ordinance to monitor the performance of navigation in the channel, the condition of vessels coming in the Chittagong port to carry out the port state control. There was communication gap in past years. So we started holding meetings together and inviting each other for discussion. Now gap is bridged so much, especially in ISPS matters, Dept. of shipping is initiating internal audits and to promote the performance of the ISPS code implementation. For example, most recently a bulkhead used for carrying sands or lighter-age purpose, going alongside the merchant ship. Their floating ability is very poor and they used to sink with rough sea. Also due to poor steering and poor performance of engine they used to collide with each other and a lot of accidents would take place. That created a lot of unrest in marine community. In one incident four of this bulkheads were sunk and that caused a big problem in the channel. So department of shipping along with coast guard and Chittagong port we have stopped this bulkhead and there is no accidents related to that now. Now they take examiners from us to train their inland Masters. So the knowledge of pilotage and knowledge of practical ship handling is inculcated with the ship Masters to promote their performance.

Q. So you are suggesting Meeting, Co-Operation, and Mutual understanding for resolving conflicts?

Ans. Dialogue.

Q. Anything else can you do like arranging seminars to educate the people?

Ans. That is a good initiative. Earlier we did that as well. Like ISPS code was brought in 2003-04 and it was an unknown chapter in the maritime sector. So we started implementing ISPS Code in our facilities and to create awareness and to train and to share more information in the maritime sector we organized workshops and seminars and also training. We trained around 1800 personnel of different stakeholders. That created a safety culture among the stakeholders as per ISPS code. Our initiative was highly appreciated by US Coast Guard. That means it's very good idea to organize workshops and seminars for creating awareness and training people. As we are coming under one umbrella under maritime convention 2018 that will be easier to do this thing.

Q. Can you please shed some light on Maritime convention act-2018?

Ans. Bangladesh ratified some conventions like COLREG, MARPOL, and STCW. We ratified this convention in individual way. There is no gagged regulation to address and ensure compliance. So if you are not bound then nobody is going to do that. Also, national and international regulations must be harmonized. Like for environmental issues we have environmental conservancy act, 1985. So same way, we ratified the MARPOL but there was no harmony between the national and international legislation. Like there was no provision in Environment Conservancy Act about marine pollution. It was ignored. We adapted national oil pollution Plan. In that plan we have contributed in line of MARPOL. So in IMO Convention act 2018 that has alerted us to address all the issue in consistence with national legislation. So IMO Convention act will simply and will act as a single uniform policy and law to address all maritime issues effecting all concerning IMO Conventions and related UN and international conventions like that.

Q. When will it be enforced?

Ans. Its draft is made. We are also revising Bangladesh Merchant shipping ordinance and inland shipping ordinance and simultaneously, we are enacting IMO Convention regulation. Concurrently, we are reviewing our existing maritime laws like port act 2006. Arbitration act 2016, Merchant ship ordinance of 1983, Flag ordinance convention 1982, inland shipping ordinance 1976 we are reviewing in line with IMO conventions. And there is a provision that it will be automatically amended if the parent IMO Convention is amended. That clause is also there. So it is being reapproved by the government to work promptly in line with IMO Conventions and international convention. Now both are in line, very soon by the end of the year we will get a positive result. Hopefully, by the year 2021, all updated regulation will be in our hand and we will go by that way.

Q. Do you know about MSP? Like planning all the sector in our maritime area?

Ans. Maritime special planning in our country is the blue economy. There are some sectors like exploration of minerals at sea, exploration of oil and gas, promotion of fisheries and fisheries technique, increase of quantity of fish, maritime and eco-tourism, growth of shipbuilding industry, construction of new seaports, search and rescue, compliance of national and international legislation in our maritime area. We have a blue economy cell in ministry of foreign affairs. That is the initial step of government to address blue economy in our country. And that cell is encircled by many governments and non-government bodies, like ministry of shipping, ministry of industry, ministry of minerals, and ministry of energy.

And we are conducting capacity building for coast guard and navy. Last year we have added two submarines in our naval fleet. And the construction of Payra port is another example of initiative to address blue economy. Then we have extended our port limit up to the from river mouth 36 nautical miles to the south up to Matarbari and 22 nautical

miles to the north to Mirershorai. This almost 100 km also under this initiative. As we have a shipping friendly location and energy hub in Matarbari Deep-sea Port and Coal based port is to be constructed there. Also in line with the maritime sector planning, we have taken initiative under JAICA a deep-sea project, Bay of Bengal project along the 100 km from Bangladesh. From Cox's bazar to Feni all of this will be developed under our port facilities. Private ports are being constructed by Beximco, Boshundara and other companies. One of the biggest economic zones is under construction in Mirershorai and its progressing very fast. Also energy hub in Matarbari is also progressing very fast. It's all under maritime sector planning. In upcoming days our government will carry out exploration of minerals and oil and gas, marine resources. Just recently they have carried out research in Coxsbazar sea beach to explore the valuable materials like uranium and other metals in the sands of Coxsbazar.

Q. Do you think that we require a blue economy ministry?

Ans. Earlier due to our disintegration and isolation, our efficiency was jeopardized and questioned. We have to arrange seminars and workshops to meet the challenge. What do we do that? Why don't do it like Europe? In Europe to solve a problem they give domestic preference. It's called national treatment policy or most favored nation policy. It's called principle of complementarity. We complement each other. Why there should be a gap. In blue economy cell initiative of Admiral Khurshid is very positive. And as such as a first initiative they form blue economic cell, and the cell is empowered to deal with different ministries, different organizations as they like. They have free access. So the cell is empowered accordingly. But as it is in its initial stage it has to be furnished and developed with manpower, resource, regulations, and empowerment in future.

Respondent 7: R7

Q. What's your role in your organization?

Ans. My role is planning of the projects and human resource management. When we are planning a project then environment comes, ecosystem comes, project viability, EIA everything comes. We are involved not with marine space which is outside the coast area, but in the coastal area, we have our role. In fact, its impact is outside the coast also, in the EEZ or the outer anchorage particularly. In the channel, we have our impact and footprint as a port authority. In the coastal area i.e. on the bank of the river or inside the port area, our main activity is inside the port area. Making the port, operating the port and monitoring environmental aspects of the port that must not pollute or disturb the marine ecosystem.

Q. What is your organization's role in the maritime sector of Bangladesh?

Ans. Like other ports in the world, the port of authority of Chittagong is responsible mainly to handle the cargo of the ship, maintain the channels draft and safety of the marine environment and not to pollute the marine environment.

Q. Do you think that you are one of the stakeholders of the Maritime area of Bangladesh?

Ans. Sure. Why not. Since it's the connecting area of land and river and marine environment. So certainly those organizations or entities who are connected with the water they must be the stakeholder of this sector.

Q. Who are the main stakeholders?

Ans. Bangladesh Navy, Naval Police, Coast guards, Ship-owners, lighter ship owners and workers working there, all the vessel's cargo and container vessels, they are the stakeholders. The offshore oil and gas explorer and environment department are also important stakeholders. Environment dept. is the regulatory authority.

Q. Do you think there is a conflict among these stakeholders?

Ans. In fact, in Bangladesh, there is no clear cut role of the stakeholders. Who will do what is not clear? And there is a problem of capacity as well. Suppose if there is spillage in Deep sea area, there is no authority, who will do it, that is not clear. If it's the issue of environment department, they do not have the capacity to move right at the time of occurrence. They don't have the capacity to move there and handle the spillage whether that is category 1, 2 or 3. This is not a matter of involvement only but capacity also. We have to work on it.

Q. Do you think there is a need for a law in this regard?

Ans. In fact, Environment conservation law is very clear about the environment and marine environment of the country. There are laws. But the authority and logistics we need more than the law. Our constitution states in article 18a that the state shall endeavor to preserve the wetland and biodiversity and the marine environment. So state has strong commitment about this issue as it's mentioned in the constitution. We are also signatory of many international conventions as well. Right now, if you ask if we need a law I would say it's not the most important issue right now. The important issue is to make a dept. with all logistics support to combat the marine pollution issues.

Q. Sir, now we have a cell for Blue Economy. Rear Adm. Khurshid Sir is head of the department. Do you think that is sufficient?

Ans. The cell is a temporary type of thing. In our country there was an LGED Cell, Now the LGED is a big department. Now it handles all the rural roads and bridges etc. So in my opinion, if you give the whole marine environment to a cell it will not work. But the

govt. thinks that initially cell is enough and after the preliminary work is done it will be turned into a self-sufficient department.

Q. Do you think it is time to make Blue Economy Cell into a Department or we have enough time?

Ans. I don't have any idea what the cell is doing right now. If they have the primary research works then they can move.

Q. In my interview they mentioned they are in the initial stage?

Ans. So it takes time. In fact, in blue economy cell more of economic matters are discussed over there not environmental matters. In fact, we need a good bridge between Blue economy cell and the environment.

Q. What's your suggestions? How we can make this bridge?

Ans. In fact, there is a capacity problem in the environment department. In marine environment how they will work, how they will put their footage over there. This is a challenge for them. So they need to revisit their organogram. They need to put experienced workforce over there to look after the marine issues through the lenses of blue economy. And the cell also doesn't ignore the environment. So these two organization must work hand in hand. Ignoring marine environment if you think about economy only it will not be a good operation.

Q. Ocean awareness and literacy is it required for both organization?

Ans. Not only both organization, in fact, all other ministries those who are in any way connected with it. In fact the city corporations, water development board who are doing the dredging works, they must be aware marine environment, the London Protocol, Convention of Garbage Disposal. So awareness is number one and it should start from the school level. Right now in Chittagong, there is a terrible problem with waterlogging. If you look at water logging issue, it has come from the habit of the city dwellers. Due to throwing off their garbage the rivers and canals are coming up. So ultimately water logging is taking place, ultimately all wastes are going to the sea. So awareness is required in all levels from school to top-level, from industries to industry owner's level.

Q. Do you think it should be included in School level syllabus?

Ans. It's required. In fact, we know very little about our oceans. And if it starts from school level it will be very good to create awareness.

Q. What do you think, who will incorporate that?

Ans. In fact the education ministry, they formulate the curriculum of textbooks. But Blue economy cell and other ministries like environment ministry, water resource ministry, energy ministry, and mineral resource ministry. They are focal point of blue

economy. So all these organizations must sit together with stakeholder, they must agree about this issue. Then they can invite good writers how we can put this into the curriculum, and what level it is introduced.

Q. Is there a conflict of interest with other stakeholders?

Ans. If there is no clear cut instruction or job specification is not there then always conflict will arise. If you want to something, Coast guard will say you can't do it, Energy ministry will say in another area or the navy. So conflict is a natural process. I think we must have a system of conflict resolution and resolve issue in our system. And there must be a clear cut instruction, there must be a flowchart if anyone wants to ply a boat from one island to another island. Whether you allow it or not the procedure must be clearly laid out. Your application will be here and you will be ending the process here.

Q. Do you know about MSP? Like planning all the sector in our maritime area?

Ans. In this case, the Blue economy cell can take the lead. Initially, we have to have a policy for MSP. First, we have to formulate the policy and then the question of implementation will come.

Respondent 8: R8

Q: Please tell something about MSP; Ocean governance in Bangladesh?

Ans. So thank you for your questions. We are the maritime education and training provider in Bangladesh. And we are also involved with various policy level matters with ministries, attend various meetings making decisions.

The maritime space and utilization of that maritime space are still very much sectorial in Bangladesh. And all the sectors, the main key stakeholders like shipping, then fishing, then offshore energy, eco-tourism – all those things are actually working sectorial and they are all trying to use their own resources and their performance and they want to utilize more and more of this opportunity of utilizing the EEZ area. Main thing is our economic growth is too much and with that economic growth we need very fast expansion of port, which is going on. At the same time, our offshore energy extraction is still in process. And fishing is long practice and has a long heritage. But area is very limited and with that limited area the concentration of use of some area too much. Because of fishing, offshore energy all stakes, we are not going to the deep sea. We are all involved in the shallow waters and in those shallow waters, the concentration is high. So far still we have not seen that much government level initiative in MSP. Some little initiative in academic level is observed and Chittagong University professors have made some conceptual just placing the pressures. But in the government level actually, how to separate and how to utilize the

area properly and sustainably has not been introduced. Also the Environment ministry they have improved the effort for Marine protective area, they are considering land and sea together. So from their side some areas are declared as marine protected area. But still monitoring and implementing the Maritime protective area we don't have that many resources. They don't have the capacity to implement. But going to the sea the capacity with the Navy and the Coast guard at very small sectors for the inland shipping or coastal shipping. So those are the actual capacity to move on the shipping, move on our sea area and monitor. So in the planning sector, we have problem with integration. Once we can integrate then we can have the special planning perfectly. So we don't have any perfect governance – a little shape is only given. The prime minister the cabinet division they have a committee of this integration works taking various sectors then the Blue economic cell they are the leading agency to integrate. But actual perfect integrated body is still not formed. It's just shaping up now. So MSP has some drawback initial planning stage and we have drawback in implementation also. We have many challenges. For example, for fishing, we are only monitoring from shore-side the period when the fishing is prohibited we are forcing all the fishing vessels to stay in the harbor. We are pushing them in this way. So there is plenty of opportunity for MSP for us – But development work is going faster. The challenge now is time. The development works are already undertaken and are in progress so keeping development work in mind still we have to prepare some plan for sustainable use of our marine area. The framework of MSP is actually there are some discussions. Somebody is thinking of some different authority, for Blue economy authority or something like that. So we need deep research to form up that authority how to have an integration of all the stakeholders and who will lead this authority. Now everyone is working and everyone is thinking they will lead. But good governance and leadership are very important. So conservation and marine prospect we have marine sector and fishing sector. In fishing, we have 40-60 nautical mile zone. So we have long zone to explore. We need to research and find out how to conduct our fishing in those zones and for the shipping, we can try to isolate the shipping area from the fishing zone. In the shipping zone we don't have any traffic separation scheme or recommended route. We have draft problem for approaching ships. So if we can designate some recommended routes or traffic separation scheme, in that case, we can save a lot of ghost fishing. A lot of fishermen are scattered fishing when the ships are approaching – we don't have an alternate – so nets are damaged and ghost fishing increased. So this is one of challenge. Another is inland ships which are single-hull tankers. Slowly we are transforming. But we have to transform all into double-hull tankers as soon as possible. In Sundarbans region, oil transportation will be developed. A lot of safety will be required there. And IUU fishing, we are developing but still the challenges you can see in the newspaper also. The government has declared prohibition on fishing so the fishes can breed. But during that time from the regional area, India Myanmar lot of fishing boat is entering our waters. So regional level cooperation is very important to protect IUU fishing. Our trawlers are all monitored tracked – they cannot do industrial fishing or IUU

fishing but our artisanal fisheries are tough to monitor and it's a big challenge. From the root level, especially local government, LGRD, is not included in blue economy meetings whereas the artisanal fishing or the fisherman community-based management can be effective once we can involve LGRD Ministry or our local governments union Councils, chairman, if we can involve them, then we will have a database of fisherman community and we can monitor all these things are effectively done. Our artisanal fishing is more than industrial fishing.

So I think in planning and implementing stage it's high time for integration, especially data integration, all sectorial people are doing different research. We should have exchange of central data bank. For example, all sectors are asking for the ships to the prime minister. But we can have some ships for survey, training, research. That will carry all the sectors to our ocean. That can be a big integration for us. All of us different because if you do not have authority, that authority is under that umbrella we have to put everything. As we don't have a common umbrella we are having separate pillars. Data bank and whatever the job government has undertaken, we need to have the cumulative impact assessment. Because that's already started. So how much has started, what will be the impact, every project has different EIA. But all the project EIA there is no cumulative impact assessment. Even the EIA Strength and EIA transparency is also problem. Besides the marine academy, a big private jetty will be built. For that private jetty if you search for EIA, who have given permission you will find less involvement. So all these are important. We have to have clear environmental assessment and at the same time, all assessments should have comprehensive cumulative impact assessment.

After that, we need to implement and we need ocean policy as quick as policy. That policy will guide all our activity and regulation. We need to do ocean governance in integrated way – so after the policy, the governance can be set up of rules on the same place.

Respondent 9: R9

Q. What's is your role in your organization.

Ans. I am basically a nautical instructor. I take classes of cadets as well as seventh and eighth semester students. Cadets are next-generation seafarers and the seventh and eighth semester students are those who are coming from the ships. The 7th and 8th Semester students have academic ship-related subjects as well as honors subjects where you have Ocean management, integrated coastal zone management and subjects like that. So I also take classes of on them.

Q. What's is your organizational role in the Maritime industry of Bangladesh?

Ans. Our organizational role is creating world-class seafarers, leaders – for doing that we provide maritime education as well as we are trying to provide industry-specific knowledge also. So it's not only for the Ships but also industry-based so the cadets can go

to various branches of maritime field and they can also understand the idea of the maritime area, not only the sea

Q. What sort of industries?

Ans. Previously it was only about ships, cadets being on the ships, doing the job of the ship. But now we are teaching them management, shipping management, we are teaching them little bit of economics. We are teaching them Ocean management and integrated coastal zone management. It's all about learning about the integration – sustainable development which also comes under the integrated coastal zone management. So all this comes together and that's how whole industry works together. If they want to go to different parts – if they want to go to ship management or dry dock or shipyard or another job they have their opportunity open.

Q. Do you think the cadets which are coming here are ready to take this knowledge or you have to prepare them?

Ans. The system is semester-based. The way we deliver it is not that we give them all knowledge in a single stage. We start with preliminary subjects. 2ND Semester, 3rd Semester or even when they pass out on 4th semester they are not given that much industry-based knowledge. They go to the ship, work in the industry, they see the industry and then they can come back and take that knowledge in 7th and 8th Semester. Up to 4th semester, it's in the academy, 5th, and 6th is in the ship. They complete their task book. That task book is also fully on the professional side. As they see the industry, they see the world, they get the full picture of the industry – they become mature. When they come to us with that maturity – then we give them the other knowledge. Then they are ready. But initially, they are not ready for it.

Q. What do you think about ocean awareness buildup from earlier education level like primary level?

Ans. That's good thinking. When I was in WMU, my professor asked what can be done. The common thing to do is there should be ocean-related subject from time to time in different stages. I have started doing something in that regard in my little capacity. I have promised to my professor about this. In our KG school and Primary school here, ocean awareness especially pollution we try to teach them if we pollute the chain how it will affect the chain. How it will affect the food generation – how it comes to us. We have made it into a story. We have made this story in Bengali and stage a drama from our perspective. And then we try to show them. I had it in my mind and I think it's a very effective way if you want to change somebody from the inside.

Q. Do you face any challenges in your duties?

Ans. Off course challenges are there – you have to address those. The organogram and the manpower we are having right now is based on cadet training. But as you know

Government has limitations. So it takes time to change the organogram and get the manpower. Organogram will be changed someday but it's not there yet. We have some lacking in that regard. So we have some pressure on that side.

Q. You are talking about skilled manpower.

Ans. Yes. We are short of skilled manpower at this moment until our organogram is revised by the government. As this is a government organization we can't drastically change all these things. It has to come through a process.

Q. Do you see any conflict of interest with other stakeholders?

Ans. Truly speaking, as I am teaching the students, I have very little interaction with other stakeholders. In that case, I can't say that I have any conflict with others.

Q. Who are the main stakeholders for ocean governance?

Ans. We are one part of it, Maritime education. Then Port, Ship-owners, Admins, Ministries which might not be directly related to shipping but they are stakeholders, Then universities and policymakers who are the think tanks, shipbreakers, suppliers, Fisheries industry all are part of it.

Q. If you are given the duty to get all these stakeholders together what challenges do you think you will face.

Ans. Our big challenge will be a conflict of interest. That's a big problem in our country. How I know is when I am doing my internal jobs in this small institute, I also have stakeholders. If I want to do something people are coming to the meeting with a mindset of what my stake is missing – not what I want to share. They come to listen to that one and they try to hold on that particular place that I should not miss that one. So if you have to get good results from somebody, you have to give something to somebody and take something from somebody. The priority has to identify first. Which industry and which stakeholders more required in that particular state. You have to have a broad mind and that is requirement. The top management of that stakeholder needs to be made understood that this thing is required. So when they send a particular person their intention should be how I can contribute not that what he is taking from my part.

Q. Can you please tell me about MSP?

Ans. Its tool or an approach where you try to establish and develop your maritime resources. Nowadays the buzz word is Blue Economy or integrated coastal zone management. When you want to go into this type of approaches then you need some tool. MSP is a proven tool where you can actually solve and implement those Blue Economy concept by removing conflicts and integrating the stakeholders. Integration is very important. To do so you need to know what you have, who are the stakeholders and what

are you talking about. You need to know what you are now having – your ocean, your fishing ground, your ship breaking ground – you have to have a map in front of you. Then you have to do the planning how and which sector is coming into the more resourceful or potential sector – then which is the secondary, third or tertiary. Then you can convince the stakeholders when you are having meetings together – Then you can have a good outcome by convincing them by mitigating conflict and integrating them.

Q. Do you think Bangladesh can implement MSP?

Ans. Off course – but I think there needs to be a lot of education for the top bosses of the organizations who are the stakeholders. So they understand the stakeholder conflict is a problem – they understand that without integration nothing can be achieved. Because you can show them how one problem can trigger 10 problems. If these 10 problems you cannot face integration you will not be able to reach the goals of sustainable development. So that needs to be educated so when the stakeholders come together in a meeting they can come with a positive mind. And we have to develop MSP, As far as I know, Chittagong University and some other university are trying to make a Spatial Plan for Bangladesh. It's not yet finalized so far I know.

Respondent 10: R10

Q. What's the prospect of Blue Economy in Bangladesh and what is your role in the maritime area?

Ans. The blue economy is very much a new concept, a new diamond in Bangladesh. We got blue economy which actually the people don't know, goes with the ship. Without ship without vessel, we will not be able to know about maritime sector, land, and other things. So for that you need ships and I have been studying in marine academy to operate a ship. After operating 13 years, since my background is marine engineering I found that if I want to go farther in maritime sector and increase my role in this sector then I have to go for engineering side i.e. Shipbuilding. For last 19 years I am in shipbuilding. We are building ships and domestically and internationally we are playing a vital role in maritime sector.

Q. Do you think you are a stakeholder in this sector?

Ans. Since my background is in marine and for the last 25 years I have worked in marine engineering sectors so I feel I have a very big role here.

Q. Except you, as a shipbuilder, who are the prime stakeholders here?

Ans. In broader terms, the whole nation is the stakeholder. We are a marine nation. We have coastal land, we have marine land, we have sea-land we have rivers. All together we call it we are a maritime nation. So the nation as a whole is a stakeholder. Specifically speaking academically you need to know the sea, know the vessels, it's not like road

transportation. Its marine transportation. If vessel has to run safety and security is the first and foremost criterion to run. So we have to follow IMO Rules, the flag state rules the regional rules. So all these rules and regulations and the know-how of the ships, knowhow of the shipping lines – about 11-12 sectors are major stakeholder. So the academy is also a stakeholder. Port is also a stakeholder as it is running the vessels which are calling from the ocean from ocean. Once the vessel comes it has to have all the certifications then it can carry cargo. Then port can discharge the cargo and transport to anywhere in the country and make an earning. So for earning ship is required. Port has a limit of specific Nautical miles from shoreline. We call it port limit and this is also part of maritime boundary. So port is a stakeholder. Then shipping people, ship owners, crew and ship officers, and their association is also a stakeholder. Stevedores and cargo transports they are also stakeholder. Then the coast guard and navy protects and secures our all the resources in our maritime area. They are also a stakeholder. So major stakeholders are those who are working here, maritime people, port, academies, shipbuilding, and shipyards. Without shipyards, you cannot build a ship, and without ship, there is no maritime activity, no contribution to nationally and internationally.

Q. Do you face challenges while performing your duties?

Ans. The world is full of challenge. There is a workplace challenge. Definitely, we are facing challenges every day – day to day challenges, midterm challenges and there are long term challenges. We are overcoming the challenges.

Q. Can you name some of it?

Ans. Maritime is a special field. It has a long history. It came from religiously if you see, it came from Prophet Noah. All the nations have built upon and grown with the maritime sectors and sea power. So for that, we are facing challenges to know the rules and regulations and all the knowledge. That is we have to be academically sound. We have to know things first. Our knowledge needs to be updated and upgraded from time to time. People are getting an education in marine academy. But after that they have to have the universities, they need to have the qualifications to study more on the maritime sectors in the world's universities.

Number two rules regulations and policymaker challenges. Our policymakers are not fully conversed with maritime boundaries, benefits, and maritime resources. Why are you talking about maritime boundaries? We have to harvest the resources and for that, you need to go in a framework. What is the framework? You have to know what you have available in the sea. All valuable things are lying down in the sea. That's why to know the things you will need research and development works. For that, you have to have the policy. In that policy, you will have challenges for maritime policy. To secure this thing you have to know the boundaries. That's why you need the international policy, to have good relations, to protect your resources from the neighboring countries. It was done, we have got our maritime zone. But we have to have the policy to protect and explore

resources, to research, to develop our industry in line with the resources and make best use of this resource for our nation.

Q. Do you see the conflict of interest during your shipbuilding with other stakeholders?

Ans. Business competition is there. That is not a conflict of interest. If you consider our national interest including environment pollutions, social aspects, in that case, I think we have no conflict of interest here. Because this is an environmentally friendly industry. It is an industry based industry. It is not the river-based industry. It's a land-based industry. And it has to go through full compliance.

Q. Do you think our maritime area is properly managed?

Ans. We have got sea area a few years back. But it's not managed. We have to manage it until we can see the color of beauty.

Q. What's your suggestions about managing this?

Ans. We have to have a good policy. We need to do more research, we have to educate people about the ocean, we have to go for oceanography, and we have to go for hydrography. We have to go for Oil and Energy projects, we have to go on the study of the mineral. That means you have to have good education system for maritime.

Q. Who is going to make the policy?

Ans. This is the problem. This is a new era. So who is going to make this policy that is also not known? How to get it. There are a few ways to do it. There are now 11 ministries and organizations who are trying or showing interest in policymaking. It should be a combined effort. Like minerals are there, petroleum ministry the can join then academics institutes universities and colleges, maritime educational institutes – they should take part in this. You have to make a cluster where you can put policymaking people, who can do the policy of the marine, like marine academy policy someone from there. Who can make policy on petroleum, someone from there, who can make policy on minerals, who knows about oceanographic things, who knows about environmental pollutions? Altogether if you can establish one ministry or one division or one cell which is controlled by a powerful minister. Because this is the field where we have 1000 times more resources than land. So we need to do the powerful ministry who will arrange the policymakers, the persons who are policymaking experts. It can be done nationally. In my knowledge, we can take some international help from WMU and others or IMO. There are researchers, the Ph.D. holders, and the fellows who know how to make policy of a maritime boundary. All over the world, there are maritime boundaries. We have ours now 80 Percent of our land is now in our maritime boundary, we have more resources there. That means we have 800 percent more areas. So we need to concentrate there more, very seriously and closely.

Q. Could you please give me some light on Blue Economy?

Ans. One of the Good things is that our top management, our prime minister understands this is the economy which can turn us into a developed country. Let me tell you what the Blue economy is, in my understanding. It's the economy where the resources are available, we have to protect our resources, secure and extract them. We have to carry our resources to the land and we have to add value and develop those for industry, then we will get some good ideas for the people or the world heritage. The weight of the earth, the water resources, and everything are the same. It is not changing. It is changing in form but the total amount or quantity is the same. We have to bring the resource from there. From my understanding it is religiously, scientifically everywhere it says to increase the economy, increase GDP or to get resources please go to sea. In Quran, it says for getting resources go to sea. I have given 1000 times more resources than the land. Its 100 percent true and we can't deny it.

Scientifically if you see under the subsoil we have a lot of resources like Gas, oil, petroleum, etc. Then in the subsoil, we have other items also. After that in the sea, you will see marine life, marine growths. This is more nutritious, more protein-based and purer for human beings and other living creatures. You see in Japan or in Norway, I am talking both in the north and south if you want to become rich if you want to develop it is from their blue economy. That is their secret. Norway is now richest in Europe. Last few years they have found huge amount of oil and gas. They have made their economy with this. When oil has gone down Gas has taken over. But after that they are now rich in fisheries and other marine life which is very expensive. That is in the sea, not in coastal area, not in the river. People are living in this area, the areas are polluted area. If you go further sea you will get this expensive best quality marine lives there. We don't know about the marine lives, how many species are there. If you can extract and research, you will get a good outcome. As per our understanding, according to the research done in the last few years there is some hue and cry, first who will do what; but first thing is we have to do the research properly. The research should be of two types – 1. Oceanographic 2. Seismic. Seismic is for Oil gas and energy. Oceanographic means you have to see your ocean, you have to find out what are the materials, what are the minerals, what is the metals available in the water. That is really expensive.

For example, some researchers are saying in our sandy belt there is some kind of sand which can be used for making more valuable computer chips. Malaysia is rich in computers, but in Cox's bazar or the southern area, we have silicon sand, which if you can extract and process you will get the very high-cost chips. This is number one. Come to the salt. Sea is full of salt and salty water containing sodium, potassium, calcium, etc. There is a 12-15 type of salt in it. Calcium phosphate produces medicine. If you see the price its 100 times more than the normal salt. That means if one is 1 dollar then calcium phosphate is 100 dollars. That means if we can bring this or extract this from the sea it will be very good. This salt is produced by seawater and marine lives with their respiration. So in these areas research has to be done and we need to explore. After that, you bring it to the shore

and use it in industry and pharmaceuticals. These pharmaceutical ingredients are lying in the sea, you know the Omega Tablets. One of these tablets is 500 times higher in price than other calcium. So that omega is produced from the sea. You talk about this marine life, now come to the energy side. Wave, current, wind forces this is the future of energy for the world because these are pollution-free, environment-friendly and if you can really use the wave and the tide up and down you can produce five times more electricity than what you can produce now. But for that, you have to do research and you have to invest the money. Investment is high and definitely gain is also very high. Come to the wave. Waves are also making currents and making other energy there. You can use this for the industry. Then go to the wind. Windmills and wind farms now, this is very common in Europe. In Bangladesh, we have failed once. But nevertheless we have to try and we have to adjust the scientific research how we can use this wind. There is nothing called it is not possible. There are possibilities. Feasibility you have to make or design your product as per your requirement and available source. 118000 SQ. KM of sea area is there. We call it water land. People can do tourism they can carry cargo over there. We can use these resources. We can make good passages even for the big cruise liners so they can go around. We are not using even 1 percent of our sea resources now. Blue economy, we have just got the paper. Like you have got some property from your forefather from the court, now you have to make it your own if we manage to do it is in our area. You have to protect from the outsiders. We don't have the boundary. How can you protect boundary? You have to do patrolling. You need fast patrol boats you need ships you need coast guard and other naval activities there. It is huge area. That security you have to do. Then you can explore for seismic and oceanographic. You can get thousands of things out there. You have to explore and do feasibility study. It will take time. It's not for 5-10 years. It will take 15-20 years. No one should mind. If I ask you what is the age of the earth around 500 billion years. What is age of Bangladesh – around 47 years? Bangladesh was there earlier, Bangladesh is here now – Only some value addition and development has been done. Its people have changed but the case is same like before. Nothing has changed in the sea, not a single sand increased or decreased. The size of Bangladesh map, it may go up but it may stay longer, it may be taken over. Before it was Arians, then Arabs, then Mughals, then Pakistanis and then Bangladesh. Maybe after 50 years some others will come. But the land will be there. If we can think and work now maybe in 2050 we can explore everything. Then our wish is we want to be developed country. How? – By developing only the land? No. You need external resources. Allah has given it in the sea. We have our land. But we have 1000 Times more if we can do the investment and get one percent of that which is also 10 times of our land. That means everything will grow 10 times more. That means our economy will go 10 times more, our GDP will grow 10 times more, our per capita income will grow 10 times more. That's why 2041 is there. Definitely I can see it's a positive thing to go ahead if there is good policy to get the things done in blue economy. For that you need strong top management with other sub management also there who knows. There has to be strict control to make the policy, number one.

Number two is if you want to do all this you need people to run this thing. 10 times more activity in Bangladesh will be in water which is hard. There is a difference between staying at sea and staying at the shore. You need ten times more people educated on the marine side. Our mindset – we are land seek people. If we want to do this we study if you see if you go for training definitely it will open up your eye and you will not feel any kind of fear going to the sea. Now if you ask people to go to sea in the monsoon. 90% of people will refuse to go except mariners. We have to go – we have no other choice at that time. So we know the sea. So people have to be educated in being more water-friendly and sea friendly. They can go for theoretical education and then they can go for practical education also. Other people like in the Philippines, they are not afraid of the sea. Most of the foreign currency income of Philippines are from their seafarers. If they can't do that why can't we? Do we have difference? Difference is the mindset that sea is something to be afraid of. If we compare from people of north Bengal to the people of south Bengal, people of south Bengal are less scared of sea. Because they have seen the sea, they have seen the waves. If all this are practically shown and proper training is given definitely they can work. You can't make a lot of workforce in one day. You will need academicians and PhD holders for research. Then you need mariners for the ship handling in the sea. You will need the patrol boats for security. You will need offshore vessels, rigs, ships for transporting and carrying goods. You will need a good policy for the shipbuilders who are building the ships. The challenge of the shipbuilders is that they need huge investment but the rate of return is low as compared to others. The loan tenure is problematic here. Repayment time is very low. So industry can't grow. Otherwise technical knowhow is same and as per international standard. In policymaking, in IMO, WMU we have our people everywhere in the world. There are about 4000 mariners all over the world from our country. When this sector will grow in Bangladesh when the economy grows and salary standards go higher then they will back and it will grow. So the policy is very important.

Q. Do you think we can privatize the blue economy sectors? Or do you feel we haven't reached that stage yet?

Ans. The private organization can't take this huge risk. Except for government, no one can do it. You need support from government and support from IMO. You have two issues here – Environmental and Pollution. The world is investing in this. We have to make this environment friendly. Now ISO 45001 is there. So the investment is high. So who will go and make such huge investment and take this risk? Suppose you are doing and exploration – you spend 5000 crores and then you get nothing. So privatization is not on the card here. Make a policy, take time of 20 years. The government will earn huge revenue. If you become rich you have to pay the government from that – I have to pay more taxes to government if my salary increase. Because there is no good governance we might be able

to skip – that is a separate issue. So I think government has to run this – the people in the government has to be ocean centric rather than river centric.

Respondent 11: R11

Q. What's your role in your organization?

Ans. Basically, I deal with ship recycling rules and regulation, Local regulation and international legislation what we are facing for the ship recycling facilities of Bangladesh.

Q. Do you think Ship Recycling is a stakeholder in the Maritime sector?

Ans. Definitely. It's one of the biggest industries and a lot of manpower is being employed here. Almost 3 million dollars is generated in this industry, 3 million tons of ship scraps, steels are recycled every year. The number of ships is around 250-300 and the average weight of the ships is around 50000 LTD of ships. This industry contributes to the national steel economy. It's a big sector where all sectors of infrastructural development of Bangladesh depends on. Not only the steels but a lot of spare parts, a lot of machinery are also involved with this. In all our industries they are being reused.

Q. How many ship recycling yards do we have?

Ans. Around 105 yards we have here. But around 60-70 percent is in operation.

Q. Are all the yards International standard yard?

Ans. When you talk about international standard, it's a debatable issue. What is the international standard? There are a lot of things to be sorted out to set the datum for international standard. All are yards are quite good because of beaching methodology and the topographical environment, river bend we have. I think we are quite in good shape here. Definitely, there are some yards they are much above what we expect, even better than India and any other place. It costs a lot of money. Because when you are doing in a riverbank beaching methodology, the investment it needs for so-called European standard methodology, like dry docking and all this it's a huge investment. You can't expect the shipbreakers taking money from the bank as loan and then recycle the whole ship and then also being part of this rebuilding of the yards. So government has a big role to play and International organizations, whose ships we are recycling – we are taking off a lot of their headaches and pain. So they have a lot to do in developing this industry, towards development of the yards and health and safety issues.

Q. How many ships are recycled in a month?

Ans. Average 20-25.

Q. How are they managing the beaching – are you the only beaching master?

Ans. No there are five beaching masters. There are 18 organizations who look after this total methodology. Because you have to do through ministry of industries. So before you talk about ship, you talk with the sailor, negotiate a price, then you have the particulars of the ship, you send that to the ministry of industry for permission. MOI will look into the criteria of the ship that can be accepted for recycling or not. Because we don't recycle any military vessels or large passenger vessels. Because there is a chance for hazardous wastes like asbestos are available. Ships we recycle are mainly dry bulk and tankers. We avoid bringing ships which contain or suspected to carry loads of hazardous materials. We don't have the mechanism to handle this. So it is better not to bring them for our safety. But otherwise dry bulk, bulk carriers, containers, general cargo vessels, and tankers. For tankers we have a regulation you have to sail around the vessel, you have to deliver the vessel in safe for hot work condition. Once that's delivered in safe for hot work condition, there is nothing to worry, it's almost like a dry cargo vessel. Once you have all these permissions you have to get all these environmental clearances for both the yard and the ships, you have to pay the duty. In total there are 17 regulatory authorities from where you need to have green signals. Once you go through all of them then you go for beaching the vessel in the high tide. Once you beach it in the highest of the tide, Yard will secure the vessel. They have a mass inspection by their expert people. They remove all the removable, stores, hazardous materials like oil and other wastes. It's uncommon now. Because we seldom find asbestos in ships built after 1985. Literally, we are beaching the vessels which are all after 2000. So the question of hazardous wastes is not in existence anymore. That's a good thing. When you talk about recycling we are not really doing recycling, we are doing the dismantling. We dismantle them into different parts. Plates are only recycled. But all the equipment are sold, electric cables are being sold and reused. So true meaning for recycling is only for steel production.

Q. You have talked about so many authorities. Do you think One-stop service will be better?

Ans. This is already in process. There you have everything about one-stop service. It is in the final stage and maybe in a couple of months we will have them in Chittagong all stakeholders, basically, government authorities are being in single room.

Q. Are the ships compliant with Hong Kong Convention?

Ans. No. Hong Kong Convention is a different issue. You have to follow a lot of rules in Hong Kong Convention. All the yards doing recycling are now ISO Certified – 9001, 14000, 18000 and ISO 30000. And only one yard has got statement of compliance from Class and there are also five-six yards who are now in process. You need huge amount of cash for developing a yard towards Hong Kong convention and for EU compliance. But if you look at India, they have these small yards who have this compliance and they apply for EU Regulations. EU never recognized. So there is a gap in understanding what the

really should be the ideal yard be like by the standards of Hong Kong conventions is. Because Hong Kong convention never talks about Impermeable floors. They are more flexible. Hong Kong convention really deals from Cradle to Death. Like ship construction, trading, dry docking, transportation of ships during the dry-docking process and then recycling. So it is tailor-made for ship recycling. Any other convention that you see like the BASEL or EU. This is not tailor-made. This is for somebody else and now it's just pulled down here to upset the whole thing. I think Hong Kong convention could have come to ratification much earlier if the EU ship recycling rules were focused. Because that basically has jeopardized the ratification of Hong Kong Convention.

Q. Do you think the ships which are being recycled here are maintaining the Environmental Issues?

Ans. The area we have is a very isolated area specialized for ship recycling. There are not many environmental issues here because of its being a soft area. You have blue economy involved here. This was just barren lands which are not being used for years and years. As the ship recycling industry has established they made the embankments which made the villages and locality behind the ship recycling industries from cyclones and tornadoes. Land erosion is stopped. Because when you are trying to pull the ship pieces you are bringing in the sand and mud. And in that, we are making a lot of land reclamation also. Every yard needs to have the clearances. It's a prerequisite. Then environmental department gives it every year and they check it on a regular basis. You cannot have a yard where the ships are beached and they do not have the clearances. The yard has to be environmentally cleared, the ships have to be environmentally cleared and only then can you beach the ship. These are all independent government authorities. The shipbreakers have to comply with them.

Q. Do you face any challenge in this sector of ship recycling and shipbreaking?

Ans. Ok, there are too many authorities involved here. Too many back and forth is going on. If one-stop service is the best solution. Secondly, we have so many divided opinions going on here – Everybody has a different look towards this industry. When you say this has to be the definition is a very debatable issue. And it depends on who is saying what and why. For the Europeans, basically, if you look at ship recycling almost 92 percent of ship recycling is done in the east of which 82 percent is done by India Pakistan and Bangladesh. Turkey does 7 percent and the rest of the world are doing 1 percent. The irony is all these rules are being legislated by this 1 percent. That is a reason why we have not reached the solution towards the elimination of these difficulties. The thing is we are taking the burden from their shoulders, removing the hazards that they have to get off. So it is their moral obligation that they should have invested and helped us go green as fast as possible.

Q. Can you please tell me about who are the stakeholders in this sector?

Ans. For example, Port is a stakeholder. But now when recycling a vessel when the vessel comes into the port limit basically port has more service into it. Because they stay in the outer anchorage. They clear the ship when the items are opened, she becomes a Cargo. She is a cargo which has got its own propulsion and she moves to her destination. There is hardly any port pilot or port service or anything. But unfortunately we have to port dues and other dues because we are using outer anchorage, then pay for the tugs and the pilotage bill. Because that is the port regulation. So this is a place where you can see there are injustice is being done. Without getting any service you are paying for it. Because you have to give the tug dues and you have to pay for pilot dues. The area in which we are doing the ship recycling that is outside the port area. And pilots don't have any jurisdiction here also. When you talk about light dues and port dues those are acceptable because you are using the port area. But when you talk about tug hires and pilotage, that is costing a lot of money. Because they are all big ships. The light ships weights are around 15000 tons. So you are talking about 160 to 250 thousand tons of vessels. All big size vessels. So have to consider the GRT, NRT and the amount of money you have to pay.

Q. So this is one conflict of interest. Any other?

Ans. We have many rules but there are a lot of ambiguities. When too many ministries all doing one thing you have overlapping responsibilities. And they are bringing a new merchant shipping ordinance. Bringing regulations without talking with focal ministries you are really overburdening the industry. We are carrying this legacy from the day we have started this industry from the ministry of shipping. Before shipping, it was ministry of commerce, ministry of environment and now ministry of industries. So we are carrying those burdens till today. Now the ministry is coming up with a merchant shipping ordinance renewal and upgrading that. So that upgrading will now put another burden on the ship recyclers. So it's a tough task.

Q. What's your suggestion?

Ans. My suggestion is one-stop service is the best solution where you bring all concerned stakeholders in one room and they should give the decisions. Rather than we send documents to Dhaka and then it comes back to Chittagong and then goes to somewhere else and again back and forth, back and forth it's wasting time. And at the end of the day the seller doesn't pay, the buyers pay and they get hit back by the consumers. So as a consumer in a bigger way we are paying the extra cost.

Q. How to engage all stakeholders in one room?

Ans. One-stop service is the best thing. We are working on it and when it happens all the concerned people will come together.

Q.I have talked with others also. They don't have one-stop service. But for ship recycling, you are already working on one-stop service.

Ans. There are so many ministries and so many people concerned. There are 18 authorities. So how can you deal with 18 authorities for a ship and go back and forth? And there are some authorities who have nothing to do. Like fire division. What does a ship have to do with the fire division? You have to go there. You have to go to the environment people and to the marine academy. You have a university professor and you have to get a sign from him. You have to get the sign from a marine academy instructor, you have to get a sign from the environment department itself. All these people are involved with the Department of Environment. Then you have dept. of Explosives, customs, customs duty and whatnot, Chittagong port.

Q. Do you have an idea about the Blue Economy in Bangladesh? From your point can you please tell me?

Ans. The blue economy is an economy which is generated from the ocean. The world has almost 37 trillion dollars of blue economy money being generated in the world today. Definitely, Bangladesh being connected to the ocean has a lot of ocean area. Exploration of gas and mining, fishing, the aquaculture, the transportation, shipping, port services, the lighter-age operation. Anything you talk about floating in the sea and you have to do, all have to do with the Blue economy.

Q. Do you think Blue economy activity has to be planned?

Ans. Definitely. Without planning you will be in a mess. It has to be a coordinated effort of the stakeholders who are involved in the blue economy.

Q. How can we do that?

Ans. To do that government has made a policy, identifying the stakeholders and bringing them under one umbrella. That will be a one-stop service. And this will be good for all the people involved.

Q. What is the best ministry that should take the lead according to you?

Ans. Ministry of shipping is definitely the focal ministry. Then you have to see if they have competent people. Shipbreaking was under ministry of shipping. And we left because of their inability to keep the ship recycling facilities under their belt.

Ship recycling and everything is related to IMO. And unfortunately, we are dealing with them through the ministry of industry. So ministry of industry talks to ministry of shipping, ministry of shipping as the focal ministry talks to IMO. So all these bottlenecks have to be removed.

Q. So your suggestion is Ministry of shipping should make the policy.

Ans. Definitely. They have to make the policy – then ministry of environment has to be involved in the environmental issues. Ministry of industry has to be involved as the industry they are going to support on the ocean and river banks. The aquaculture should go to ministry of agriculture and fishing should go to the ministry of fishing. There are a lot things.

Q. But you think the ministry of shipping should take lead.

Ans. Ministry of shipping in consultation with the other ones bring authorities and ministries in one table and make one-stop service.

Q. If we can plan do you think it will help us in GDP Growth?

Ans. Definitely. Not only in GDP, but it will also increase huge amount of movement in the sea. And talk about the landlocked countries that we have. The total transportation you can channelize through this blue economy here. The number of ships you are handling today you will have three to four times more ships. The development we are doing will not be put into use unless you grow with blue economy and make passages and logistical supports.

Respondent 12: R12

Q. What is your organization role in the maritime area of Bangladesh?

Ans. To provide safe and efficient shipping services on international routes and carry out all forms of activities connected with or ancillary to shipping, which is maritime industry, Thereby contributing to the national development as well as to the maritime sector.

Q. Who are the main stakeholders in the maritime area of Bangladesh?

Ans. There are several organization like Director-General shipping, POMMD, Chittagong Port Authority, Mongla Port Authority, Payra Port Authority, National maritime Institute, Marine Academy, Marine Fisheries Academy, and Bangladesh Shipping Corporation as one of them of course, I can name also many more, not to mention There are shareholders, Suppliers, Private Shipping Companies, Private Marine Academy/Training Institute, and Investor contributing much more to this sector.

Q. Is your Organization a stakeholder in the maritime space of Bangladesh?

Ans: Yes, of course. Since inception BSC has been operating various fleet/trading in Breakbulk cargo-carrying Bangladesh-Pakistan-West Asia Gulf Liner service, Bangladesh/Far East/Japan Liner Service, Chartering & Tramping service, Chittagong-Singapore-Port Klang (Malaysia)-Chittagong [Fortnightly sailing], Chittagong-Colombo

(Sri Lanka)-Chittagong [Fortnightly sailing], Chittagong-Port of Tanjung Pelapas (Malaysia)-Chittagong [Occasional sailing], Crude Oil Carrying, Crude Oil Lightening, Food Grain Carrying, Food Grain lightening/Carrying across Asia and Africa, Agency Service, Ship Repairing, Chemical and Oil Product carrying across Europe, Asia and Latin America and many more services providing till day also Not to mention BSC is a National flag carrier which is the leading shipping company in this region. Which indeed made this Bangladesh Shipping Corporation is the main stakeholder in the Maritime space of Bangladesh.

Q. Do you face challenges to perform your activity in the maritime space of Bangladesh?

Ans. Yes, I as a Technical Director of Bangladesh Shipping Corporation always face challenges, which is kind of natural, as the world maritime industry growing rapidly and every year new legislation/regulation BWMP,ECA,MLC coming into play, Let alone maintaining standard as per CDI/SIRE, making us work harder and harder to cop up with world shipping affairs pace in rolling our day to day activities for managing our fleet in both commercial and safety matter especially taking human safety and environmental issue as a prime concern.

Q. Do you see any interest conflict with other stakeholders in the future?

Ans. Yes, the maritime industry is growing rapidly, there is a huge number of skilled personnel is required, if the training institute can't produce enough, then it will be very big challenge.

Q. How to overcome all the challenges, what is your suggestion?

Ans. More and More Research and appointment of smart maritime expertise are required for this.

Q. Do you know about MSP?

Ans: Yes.

Q. What is MSP?

Ans: Marine spatial planning (MSP) is a process that brings together multiple users of the ocean – including energy, industry, government, conservation, and recreation – to make informed and coordinated decisions about how to use marine resources sustainably.

Q. How can MSP be a tool to conserve marine Ecosystem?

Ans: As I mentioned already, it is an effective tool/Process which allow best uses of all major player in the industry in a region thus can place a major role in conserving Marine Ecosystem

Q. What are the challenges and opportunities to implement MSP in Bangladesh?

Ans. Yes, there are some factors, like the appointment of adequate and appropriate maritime expertise and presenting this importance in a clear and simple manner to the government higher authorities for further action also training and awareness of all stakeholders in this region could be challenging. If the importance of MSP can be presented to govt. higher authorities, it will be a great step for achieving so.

Q. How can MSP help to achieve sustainable blue growth in Bangladesh?

Ans. Yes it can do a great deal of help, like bringing new regulation in managing garbage, preventing pollution, controlling, monitoring and coordinating all of this including ship breaking industry in Sitakunda, Ctg which is a major concern of pollution in Bangladeshi territorial water. Also, many more like bringing all riverside industry who are those is directly linked in terms of garbage management with territorial water and prevention of using of harmful chemical, into this MSP can help to achieve sustainable blue growth.

Q. How to develop a framework to implement MSP

Ans. For developing a framework to implement MSP, DG shipping Bangladesh has to play an important role in gathering information, expertise, infrastructure, regulation, etc, and appropriate action to be taken first by DG shipping to form a committee by keeping main maritime stakeholders in this region.

Respondent 13: R13

Q. What is your role in your organization?

Marine fisheries academy is a maritime educational institute in Bangladesh which is working to build up skilled manpower for both Deck and Engine side of Merchant marine and fishing vessels. We have three departments here – 1. Nautical 2. Marine Engineering 3. Marine Fisheries.

Merchant ships generally have 2 departments – Deck and Engine. In deep-sea fishing vessels, there are three departments. Deck Engine and Another is fish processing. Though it's not a separate department in that sense still it works like a separate department. I am a nautical instructor. My job is developing cadets and training them what they need to know, basics of sea life. I have taught different subjects. But currently I am taking courses on ocean and ocean navigation which is called practical navigation, chart work, and Leadership in management courses.

Q. Do you think that your organization is a significant stakeholder in maritime area of Bangladesh?

Ans. I do think so.

Q. Do you think the fishing department is a major stakeholder?

Ans. Yes, it's a major and one of the important stakeholders. In current status, the fishing sector is the main stakeholder which is related to blue economy.

Q. What is your logic for this comment?

Ans. What is termed as a marine resource in government statistics both in terms of export quantity and valuation it's showing the fisheries sector as a large contributor. That's why I say at present Marine fisheries is a big part of marine resources of Bangladesh.

Q. Can you give us an idea about the Amount exported and how many people are involved in this Fishing sector?

Ans. I can't give you an exact number of the amount. I have to go through the statistics. I also don't have specific data on how many registered fishing vessels are there as I don't work with this. You can find this data with the Marine fisheries department which is a government organization. And artisan vessels which we call as country boats, more people are involved in those. I doubt even the government have any data on the number of people involved there. I don't want to call them IUU Fishing – it is not that IUU fishing if it is not reputed. IUU fishing means illegal fishing. I don't want to put all the blame on them. Because most of them are illiterate.

Q. Who will do this?

Ans. Government organizations like the marine fisheries department should do this.

Q. Why are they not doing it? What's the reason behind not registering the artisanal boats?

Ans. When we are talking with the fisherman they are saying that they have applied but given no registration as yet. Especially driving license for the Boat drivers. Recently I have been to Cox's Bazar and talked with few of them. 3 out of 4 said that they have already applied 2-3 years back. But they have not got any cards or registration. So they are not getting the subsidy. When I contacted with marine fisheries department they are not saying that they have finished it or they will don't do it. They are saying that this is under process. So I hope it won't be long before all fishing vessels in Bangladeshi naval territory comes under the registration process. When this is done we will get the real scenario about this sector, the economic contribution of this sector in GDP – all this data we will get. Until we can figure out how much people are working in this sector, what amount of fishing is done by these vessels we will not get the real scenario, rather it will be dark.

Q. Do you think the registration process should be introduced instantly?

Ans. Yes if possible I would have suggested do it today.

Q. Do you think there are inter conflict between fishing sector with another sector?

Ans. I won't say there is conflict. I will rather say they have some risk – they have some problems. The main complaint raised by the deep sea-going fishing vessels is that Indian fishing boats fishing inside Bangladeshi territory. They are raising an issue that Bangladesh Navy or Coast Guard vessels are not found or not adequate for tackling the issue. They do not have a way to communicate their complaints to the Naval or coast guard vessels. We heard complaints that the boats are coming to our territory along Patuakhali; According to them, hundreds of these boats are coming. The boats are equipped with developed communication system compared to our fishing artisanal vessels. We do not have any VHF, HF communication system in our artisanal vessels. Their vessels have VHF, GPS. We don't have any GPS. So they can set target zones. When leaving India they know where they will go how they will fish and also the time of fishing. Our fisherman is not able to do that. This is one problem. Our resources are harnessed by boats of other countries. This is a challenge and it's also a threat to the sovereignty of the country.

Another is we have a limit set for fishing. We can't go beyond 60 m depth. This is the restriction of our deep sea-going fishing trawler. The fishing vessels are asking why set this 60 m depth – what's the logic in this. Why have they set this limit of 60m? Sometimes they do not get adequate fishes. If they can go beyond the limit they can catch more fishes. If this confusion of 60 m is cleared by the MFD and other organization by organizing workshops and seminars with them then they will understand this and then they will maintain. Because they are not maintaining this sometimes. Now they are thinking this is an unnecessary rule that below 60m depth they can't do the fishing. Navy and coast guard are applying the law under if they fish lower than 60 m depth. It's a hide and seeks game now. Law is saying that don't do it. They are saying that we are not doing it. But in actual practice they are doing it, they are doing it secretly. If you take data from navy and MFD about how many fishing vessels are punished for doing it. Then there is another problem. The fishing zone is not delimited here. The Chittagong bound merchant ships which are in near Coxs Bazar and Kutubdia, the ships which are near Saint Martin they sometimes have the problems and misunderstanding with our boats which are fishing near elephant points. Sometimes this becomes a very big issue. Three years ago one vessel was completely missing due to this – It was late at night the vessel hit a big ship and drowned. Many people died – maybe 2-3 survived. So this is happening sometimes. So it's a big problem. If there were any lighting or buoys in this area which will indicate that this area is for merchant ship – then fishing vessels would have avoided those areas and it would have minimized their risks.

Then problems of piracy or robbery of artisanal boats is another concern. They attack these boats, loots them, and takes the catches and their nets. This is happening near moheshkhali, Kutubdia. They also take ransom by imprisoning the fisherman. This is a

big problem for them. The law enforcers must take steps to save these people from robbery. This is the duty of the government and government can do this if they want.

Another problem is the boats which are landing in Coxs bazar area they do not have a specific navigational channel defined for them. So they can't come to the shore at night. Especially during some adverse weather condition sometimes they require to come back to shore. They have to remain at sea and sometimes the boats capsize. Their demand is south of Moheshkhali and north of Coxs bazar, there is a channel. They want this channel to be defined by the light buoys. So that they can navigate at any weather condition by seeing the lighting buoys.

Then they have conflict among themselves. The fisherman of the artisanal boats, their complaint is fishing trawlers are destroying their nets and sometimes the nets go missing. This is a big loss for them. For example one of their nets can cost around 10 lacs. If they keep losing one or two of these nets every year then they suffer a big loss. They fish by taken loans from Money landers – the catches are divided fifty-fifty.

Another problem with the port for all our fishing vessels and boats is that there is no bad weather fishing shelters. For example, earlier there was a basin in BFDC where the fishing vessels were berthing during bad weather. They could come to this basin – it was away from the river and it was like a pond. Not much wave could come in here. It was very safe. But we don't have this since our independence. 20- 30 years back dredging was done. Then it was usable for maybe 1-2 years. Then there was sedimentation once again. So there is not much water now. So there are no basins or berthing points for the safety of these vessels during adverse weather condition. It is very important. If a vessel falls into an accident there is loss of asset as well as manpower. Government assets are lost as well. So this issue of safe landing station or shelter is an important issue. So the fishing vessels are now taking shelter in the mooring buoys up to the Karnafuly Bridge. Mooring buoys having a capacity of 10 vessels sometimes has to hold around 18-20 ships. So there is occurrence every year – as the chain can take the stress of this overload breaks down. Then there is a big mess and sometimes accidents also occur. Then there is economical loss as the equipment are damaged and also the hulls are damaged sometimes, crews and operators are harmed sometimes. There is also problem with navigation of other ships using this channel – because then the literate and other ships cannot come and go through this. If there are 18-20 ships in a mooring buoy then sometimes there is no place for navigation there. There are problems of depth and all that. Especially the problem is harder at night. If we could have created mooring zone or safe shelter, then they could have stayed here safely. Then the navigable status of karnafuly during night or day would have improved as well. These are visible problems.

Q. So what are the major problems?

Ans. Registration of fishing vessels. So we can't get real data. Secondly, there are no service rules in this sector for fisherman and the officers who are working here, some of whom are graduating from our institute. They are educated and they have to communicate with the other ships in English. They have to operate similar equipment's like the merchant ships – even some are even more costly than merchant ships like sonar which are very much developed. But these people do not have any service rules as to how their service will be regulated or how they will work. There are no rules for them. This is the biggest problem according to me. Because there is no principle or directives as to how my manner should be, what I am entitled to do or how I should behave, how I will join or leave a job, what rules I have to follow and so on, What should I do during accident, if I do a mistake what should be my punishment or compensation. If there are no rules for these issues then this is just uncontrollable. Another is living and working condition in a fishing vessel. There is an ILO convention for this – working fishing convention 2006. There are guidelines for how should the accommodation for crews and captains. What facilities should be there? As far as I know, government has not yet implemented it. You talk about blue economy or maritime special planning we have start from fisheries. Because we haven't yet been able to work with oil or mineral extraction as yet. Marine resource now means fisheries for now. We have to base our development in this. If we can't start from this and make a foundation for this sector then how can we reach the goal of blue economy?

Q. You talked about regulation about 60m depth? In which regulation can we find it?

Ans. Marine fisheries rule 1983.

Q. Did you say that there are no dedicated fishing zones?

Ans. There are designated fishing grounds. I didn't say about fishing zones. I said there is no dedicated channels for merchant shipping or other vessels. There are no channels in that area of which I talked about. You are a mariner yourself. From Saint Martin to Kutubdia did you find any such Buoys marking the channel or which indicated that you cannot do fishing here or any markings that this zone is only for merchant ship navigation – did you find any such restriction marks?

Q. Can you give me an idea about the sub-sectors of this fishing sector like Landing, artisanal fisherman and so on? Who are the people involved here?

Ans. There are fish party, who buys the fishes from the ship, then there are cold storage owner, then there are ship supplier, Ice factory owner, Polybag suppliers, Carton Suppliers, Accessories supplier, Dry fish factory, Net Factory, Navigation, and fishing Equipment suppliers

Q. Could you please tell me about the different types of fisherman?

Ans. There is an artisanal fisherman and there is industrial fisherman. There are two types of industrial fisherman – one is white fish or finfish and another is shrimp. Then there is crab harvester – though it's not really a fish it falls under fisheries resource. Then there are shark collectors though our laws do not permit it. And then there is trash fish - these are fishes which are low priced, whose quality destroys quickly, these fishes are used as dry fish and used as poultry feed and feed mills.

Q. Except for fisheries according to you which are the other important sectors of Maritime area?

Ans. Shipping, fishing, tourism, mineral, pearl harvesting, the sand collection – it's happening under government organization, sea cucumber – it's still not there but it will start in Cox's bazar to Saint Martin. At present these are the promising sectors.

Q. What about the future?

Ans. We can develop tourism and shipping for internal tourism and foreign tourism. Like From Chittagong to Coxsbazar to Khulna or Kolkata. We can develop this as tourism as well as shipping. We can develop beach centric International Hotel, motel, restaurant, etc. It has already started in Chittagong. Then recreational facility needs to be developed as this is an international port. It will increase tourists. We can also develop pearl production and shrimp production in the coastal areas with the participation from Government and private sector. We can do this in large proportion. Because we have a large coastal zone. We can also culture sea fishes. We can develop new coastal ports. Like you have seen in Thailand. We have a large coastal area. We have just a few ports like Chittagong and Payra port. So from Teknaf to Saint Martin to Coxsbazar and in other areas, we can develop new ports. Then there will be less pressure on Chittagong port and we can handle more ships as well. For example, for seven sisters the items are transferred. Like Koochiching, if Land attached ports are not possible then it can be in the outer or any other special facilities can be developed. As you know 20-30 miles from the coast you will find the depth of 30-35 m depth. That means larger ships can come and anchor here. If we can develop this sort of port then it will help us earn more remittance from this which will impact on the GDP in a positive way. Because best way of communication for Nepal Bhutan and seven sisters is through Bangladesh. And these countries agree with this because this will impact very well on their economy. Seven sisters if they can use the zones from Chittagong to Cox's bazar they can very easily transport through Agartala port. And if Khulna and mongla port can be developed and better communication can be developed in the land it will be good. And we can develop Saint Martin with a whole new approach. If we can develop it like Mauritius or other island nations which have beautiful beaches – if we can develop it sustainably without destroying the natural habitat and protecting the environment then it will be a great part of the blue economy. We can utilize this.

Q. Who should do this?

Ans. Government can do it by themselves or invite private companies. But the responsibility goes to the government.

Q. Which department of government should do It.?

Ans. Department of tourism and concerned ministry with the help of environment ministry, fisheries ministry and others should handle this. This comes under maritime special planning. All should survey the environmental impact and whether there should be a bad impact on the environment. So for this experts should be included in the team to ensure every aspect is taken into consideration before doing this.

Respondent 14: R14

Q. Who are the main stakeholders in the maritime area of Bangladesh?

Ans. The main stakeholders in Bangladesh are artisanal fisherman, industrial fisherman, fish processing units, shipping, port, environment department, oil and gas extraction, salt extraction and many more.

Q. How can these stakeholders be coordinated?

Ans. By encouraging the stakeholders through education, these stakeholders can be coordinated.

Q. Who can coordinate these stakeholders?

Ans. Any government department with skilled manpower can coordinate these stakeholders.

Q. Do you know about MSP?

Ans. I don't know about MSP.

Q. Is there any conflict among stakeholders?

Ans. There are many conflicts among stakeholders, which include industrial fishing with artisanal fishing, fishing with shipping, fishing with gas exploration and many more

Q. How to resolve this conflict?

Ans. The government should arrange regular meeting to resolve these conflicts among stakeholders.

Respondent 15: R15

Who are the main stakeholders in the maritime area of Bangladesh?

Ans. The main stakeholders in Bangladesh are artisanal fishing, shipping, tourism department, port, environment department, oil and gas extraction, salt extraction and many more.

Q. How can these stakeholders be coordinated?

Ans. Our school and colleges should change their syllabus and teach people about ocean and its uses. Once people are aware of the ocean and its uses. They will engage themselves to manage the ocean.

Q. who can coordinate these stakeholders?

Ans. The existing blue economy cell can coordinate these stakeholders.

Q. Do you know about MSP?

Ans. I don't know about MSP.

Q. Is there any conflict among stakeholders?

Ans. There are many conflicts among stakeholders, which include fishing with tourism, ship recycling with tourism, tourism with oil and gas extraction, fishing with shipping, fishing with gas exploration and many more

Q. How to resolve this conflict?

Ans. The government should arrange regular meeting to resolve these conflicts among stakeholders.

Respondent 16: R16

Who are the main stakeholders in the maritime area of Bangladesh?

Ans. The main stakeholders in Bangladesh are fishing, shipping, port, environment department, oil and gas extraction, and many more.

Q. How can these stakeholders be coordinated?

Ans. Ocean awareness from the primary level will help stakeholders to learn about the ocean and its uses. Thus If people are aware, they will be coordinated.

Q. who can coordinate these stakeholders?

Ans. Existing BEC should coordinate these stakeholders.

Q. Do you know about MSP?

Ans. I don't know about MSP.

Q. Is there any conflict among stakeholders?

Ans. There are many conflicts among stakeholders, which include fishing with gas exploration, gas exploration with shipping, gas exploration with salt extraction and many more

Q. How to resolve this conflict?

Ans. The government should arrange regular meeting to resolve these conflicts among stakeholders.