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How does Coastal Zone Management policy perform: An Analysis of the Policy Phases of Coastal Zone Management Policy in Bangladesh

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Abstract

The coastal zone of Bangladesh, known as a zone of vulnerable and opportunities, is the most important asset of Bangladesh for its economic development. Due to the lack of adequate regulations for the protection and use of natural resources, land use conflict arises. The study shows how coastal zone management policies in Bangladesh are formulated and implemented based on the theoretical framework provided by Rosenbaum (2011). The case study reveals that the policy was drafted by an informally organized Task Force under the Ministry of Water resources (MoW) and then after taking consent of the Ministry of Law, Justice and Parliamentary Affairs (MoLJPA), forwarded to the Cabinet Division (CD) of the government which presented it on parliament for legitimation and finally enacted by the parliament in 2005 as Coastal Zone Management Policy. The specific goals of the Bangladesh Coastal Zone Policies (CZP) are included under the wide objective of implementing an Integrated Coastal Zone Management (ICZM) for the country: to create a sustainable livelihood for coastal communities, economic development, reduction of vulnerabilities, to secure women's advancement and promotion of gender equality, sustainable



management of natural resources, empowerment of coastal communities, preservation and enhancement of critical ecosystems

1. Introduction

The region where land, ocean and atmosphere interact with each other is generally called coastal zone. Coastal zone management includes managing coastal regions in order to balance environmental, economic, human activities and public health. The coastal area of Bangladesh occupies 47,201 square kilometers, comprising 32 percent of its territory and approximately 35 million people are living in the coastal area, who make up 29 percent of the population (Ahmad 2019). Bangladesh's coastal zone consists of three parts according to geographical characteristics, (a) the eastern zone, (b) the central zone, (c) the western zone. The coastline is 710 kilometers long and composed of the interface of numerous geological, ecological and economic systems. They have several dynamic ecosystems and the Sundarban is situated in this region. It is the world's largest mangrove forest ecosystem and habitat of many vulnerable animals (FAO 2006). It declared as a world heritage site. St Martin's Island is another important site of the coastal region, which is significant for coral reefs. Around 475 coastal and marine species and 36 shrimps are available in the Bay of Bangle (DoF, 2016). The coastal and marine fisheries resources of Bangladesh play a vital role in the economy of the country. The coastal area of Bangladesh is an exclusive zone as it plays a significant role in economic development and coastal ecosystem. Most of the people of the coastal region are poor, depending on agriculture, fishery, forestry and salt farming for securing their livelihood.

As a zone of vulnerabilities and opportunities, the coast is prone to natural disasters like cyclones, storm surges and floods. Due to the rising sea level, the lower land of the coastal zone is going underwater. Crop production is decreasing due to increasing salinity in the soil; as a result the people of the coastal zone are suffering from a wide range of climate change hazards as well as anthropogenic difficulties. So, this huge coastal region needs proper management and a holistic framework for sustainable development, conservation of coastal ecosystems and safety of coastal communities. Different Government and NGOs are working together for sustainable development policies of the coastal zone.



This research paper mainly deals with the different phases of the coastal zone management policy of Bangladesh using the theoretical framework provided by Rosenbaum (2011) and also explores the current status of policy initiatives taken for the costal management. Moreover, it investigates the changing policy trends regarding this sector by reviewing relevant documents from Bangladesh Government websites and different scholarly articles.

2. Methodology

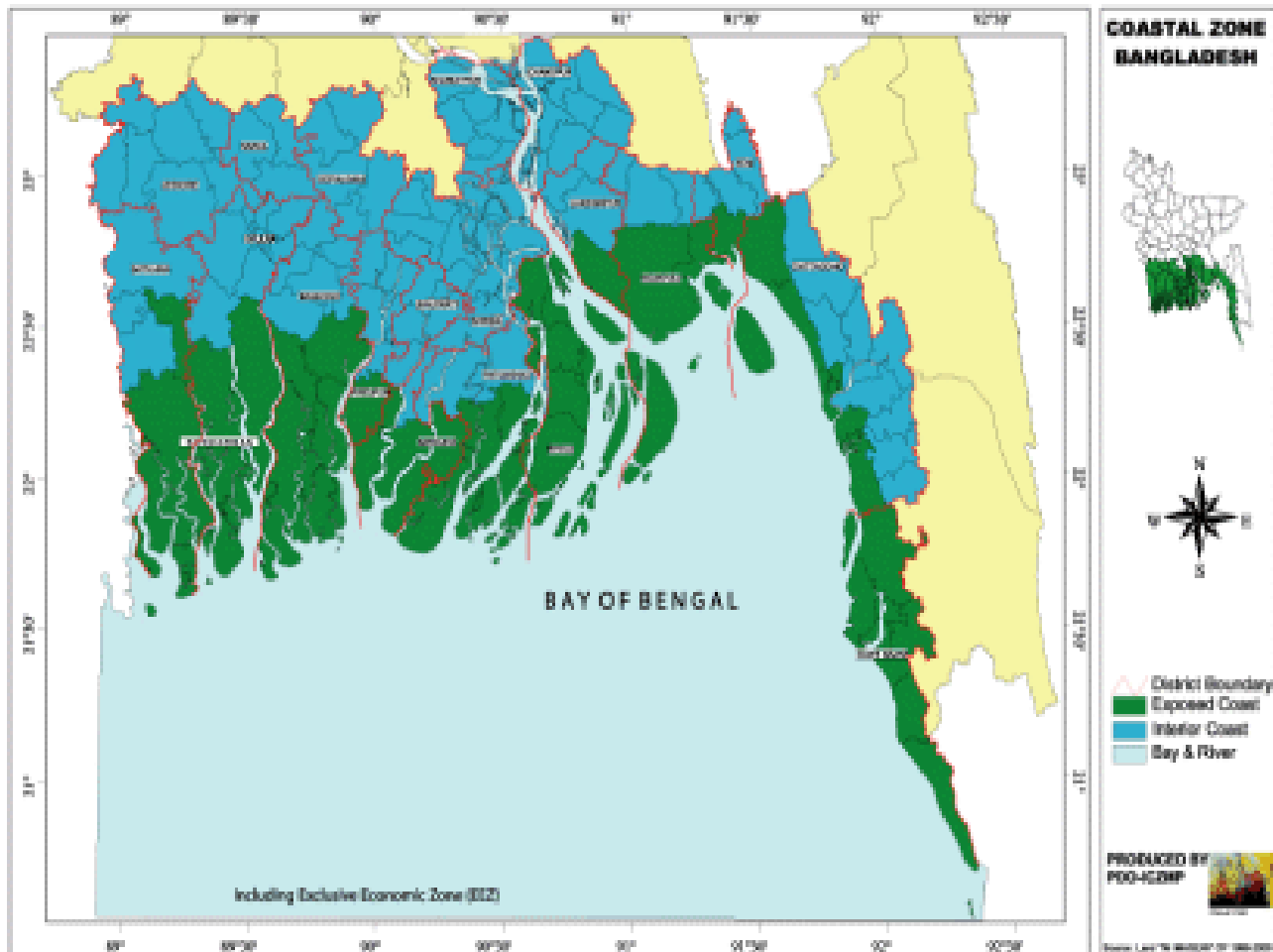
In this study, summative content analysis technique is used as a methodological tool. Typically, content analysis has been used for analyzing miscellaneous documents (Elo & Kynga, 2007). Summative content analysis in qualitative research, researcher identifying few key words, meaning or content for understanding certain situation or meaning. These key words either derived from literature review or researcher interest (Hsieh and Shannon, 2005). There are two key themes “Coastal Zone”, “Policy in Bangladesh” is used for unit of analysis. The paper used various secondary sources including journal articles and books as well as a desk-based study that draws on web-based sources including Memorial University of Newfoundland’s e-resources and google scholars. A single case study on Bangladesh is considered in the context of describing policy dimension about the costal management.

3. Results and Discussion

3.1 Agenda Setting

Agenda setting is a stage in the public policy process where ideas are produced and promoted to catch the policymaker’s attention (Rosenbaum, 2011). The policymaking process begins with the recognition of problems followed by setting of agenda for public action. This is a political course where agendas are influenced and shaped by the actors inside and outside of government. This process results in selection between diverse problems and issues. Several factors were playing an important role in agenda setting for coastal zone management policy 2005. The most common factors are:

- Limitations of previous coastal management policies
- Nonstop coastal environmental degradations
- climate change hazards
- Role of civil societies including mass media
- Pressure of the Political parties



After the independence of 1971, the government of Bangladesh has taken miscellaneous initiatives, including offshore islands development boards (1977-1982), Bangladesh national conversation strategy (1987), coastal environment management plan for Bangladesh (1987), coastal areas resources development plan (1988), special parliamentary committee on coastal area development (1998-1990), national capacity-building approach the ICZM initiative (1997), coastal zone policy (2005), Tsunami vulnerability map (2005) and coastal development strategy (2006) (FAO 2006) to protect costal resources and ensure sustainable development for the coastal communities All initiatives based on integrated coastal zone management. However, weakness in policy, lack coordination, inadequate human resources, lack of investment, inadequate public participation and stakeholder inclusion, corruption etc. were rose because of the limitations of these policies.



Bangladesh is located in the tropical climate zone. Due to increasing population, competition for limited resources, natural and human-made hazards, lack of economic opportunities, lack of awareness about management for resource sustainability, non-stop coastal pollution etc. call for distinctive coastal management. The coastal zone turned into areas of major conflicts due to the lack of proper guidelines for natural resource conservation and utilization. On the other hand, inadequate public participation and stakeholder inclusion, the role of civil societies including media and political parties were influencing the government to make coastal zone policy. Especially, mass media played a remarkable contribution to create public attention about the scarce condition of the coastal zone. The political parties organized various programs for the conservation of the coastal zone.

3.2 Policy Formulation Process for Coastal Zone in Bangladesh:

The formulation of policy is a process that involves identifying policy goals and alternative actions. Policy formulation and adoption include the definition of policy objectives and consideration of alternative actions or initiatives. The policies of the government of Bangladesh were built mostly from a sectoral perspective in the earlier days. Nevertheless, the government has recently adopted a cross-sectoral strategy involving multiple stakeholders to formulate policy (Rabbani & Baroi, 2012). The policy of the coastal zone has been formulated by different external and internal actors. Ministry of Water Resource (MoWR) played a vital role to formulate the policy of the coastal zone. However, the Ministry of Land (MoL), Ministry of Fisheries (MoF), Ministry of Environment and Forest (MoE&F), Ministry of Agriculture (MoA), Local Government Institutions (such as District, Upazila and Union Parishads), Coastal Zone Development Board, planning commission, private sectors, relevant ministries, civil societies, NGOs have also played a crucial role (MoWR 2005, 2).

The Coastal Zone Policy was formulated over a duration of two years. Firstly an outline was made and presented from September to October 2002. In March 2003, an annotated outline was discussed by a selected group of experts. The outline was elaborated in a preliminary draft of the policy on the basis of the discussion and the draft was presented at a national workshop on 12 May 2003. The first draft was prepared in August 2003 based on discussion and comments. Then the draft was presented and discussed at the local level in 19 coastal districts towns supported by the district administration from September to



October 2003. The draft has been discussed by the Policy and Strategy Task Force, the Inter-Ministerial Steering Committee and the inter-minister Technical Committee in 2004. Then the Ministry of Water Resource (MoWR) forwarded the draft to the Ministry of Law, Justice and Parliamentary Affairs (MoLJ&PA). After carefully scrutinizing, the MoLJ&PA returned it to MoWR with its approval. Then the MoWR finalized the draft.

3.3 Decision Making and Legitimation Process for Coastal Zone Management Policy

The legislation means statutory law. These laws have been adopted by a legislature or the governing body of the country. Decision making is rational planning to achieve goals and adoption of a proposed policy depends on resource scarcity and actors' competencies (Jann and Wegrich, 2007). After the formulation, the Ministry of Water Resource (MoWR) forwarded the policy draft to the Cabinet Division (CD) of the government, which then was introduced as an Environmental Conservation bill in the Parliament in 2004. Finally, it had been enacted by the parliament in 2005 as the Coastal Zone Management Policy 2005 through a gazette notification.

The overall objective of the Coastal Zone Policy (CZP) 2005 is to create a framework under which to reduce poverty, development of sustainable livelihoods and incorporate the coastal zone into national processes (Islam, 2009). The CZP aimed to provide general guidance to all concerned for the management and development of the coastal zone in a manner that will allow the people of the coastal region to drive their life and livelihood (Ahmad, 2019). The specific goals of the Bangladesh Coastal Zone Policies (CZP) are included under the wide objective of implementing an Integrated Coastal Zone Management (ICZM) for the country: to create a sustainable livelihood for coastal communities, economic development, reduction of vulnerabilities, to secure women's advancement and promotion of gender equality, sustainable management of natural resources, empowerment of coastal communities, preservation and enhancement of critical ecosystems.

The coastal zone of Bangladesh is full of natural resources like inland and marine fisheries, mangrove and other forests, livestock, salt, mineral, land, sources of renewable resources like tide, wind and solar energy. The government has built medium and long term policy to ensure durable legislation of both



biotic and abiotic coastal resources. The government has been made policy on the coastal land, water, agriculture, fisheries, aquaculture and livestock.

Land: Plans for the unplanned and indiscriminate use of land resources are undertaken under the land-use policy. Strategies are being built for new chars. Necessary measures is taken for the development of coastal land and wetland (MoWR 2005, 5).

Water: Adequate water supply to the coastal region to mitigate the crisis of freshwater is a remarkable policy for coastal zone management. In order to increase minor irrigation in the coastal region, small water reservoirs are constructed to capture tidal water. The collection and preservation of rainwater is promoted. Necessary steps is taken to ensure sustainable use and management of groundwater (MoWR 2005, 5)

Fisheries and Aquaculture: National Fish Policy is followed for the production, protection and management of marine fisheries. The right of the fisherman is established for sustainable fisheries management. All necessary steps are taken for the sustainable development of coastal aquaculture. Crab culture, shrimp culture, prawn culture, pearl culture is promoted for sustainable development of coastal fisheries (MoWR 2005, 5).

Agriculture: Special development programs are taken to increase crop production in the coastal region. Salt-tolerant crop varieties is developed. Promoting agriculture and crop development programs to improve the economic conditions of both male and female farmers. Reducing the use of chemical fertilizer, insect, promoting organic manure and then promoting organic manure and integrated pest management (MoWR 2005, 5).

Energy: Evaluation of tidal and wave power as a potential energy source in the coastal regions. The relevant authorities perform a regular evaluation of all types of energy resources (e.g. oil, gas, coal, nuclear mine, hydropower, biomass fuels, solar, wind and tidal waves). Special projects, such as power plants in the offshore islands is being identified. Plan for electricity generation is drafted separately in remote and isolated areas (MoWR 2005, 6).

Afforestation: Necessary steps are being taken for coastal afforestation. For the conservation of the Mangrove forest effective measure is being taken. Social forestry is promoted and increased. Green-belt



is made along the coastline for the protection of coastal regions from various natural disasters (MoWR 2005, 6).

Conservation and enhancement of critical ecosystems

Effective measures are taken for the conservation and development of aquatic and terrestrial ecosystems. The coastal zone of Bangladesh is rich because various kinds of ecosystems such as Mangrove, coral reef, tidal, wetland, estuary and Barrier Island found here. The government of Bangladesh has numerous policies to conserve and enhance these aquatic and terrestrial ecosystems.

Conserving the ecosystems: Taking special measures for the protection and conservation of biodiversity as well as hill management by prohibiting of cutting tree. Exclusive measures are taken for the protection and improvement of the natural environment of the Sundarban (MoWR 2005, 8).

Climate change: As climate change is a major concern for the coastal regions, all realistic measures is taken by the government for the protection of coastal zone from the effects of climate change. Due to climate change the sea level are rising, so continuous efforts are being made to maintain sea-decks as the first line of defense against the predicted rise in the sea level (MoWR 2005, 8).

Empowerment of coastal communities

The mainstreaming of the coastal residents is accomplished through the enhancement of their security and capacity. The fair participation of all the stakeholders is being assured and effective collaboration is being formed between agencies, the local authorities and NGOs. Most of the people of the coastal zone are depends on fish for their livelihood. They are involved in fish farming, fish harvesting, fish processing, crop production, salt farming, shrimp and crab farming. They rely on natural resources. For the improvement of their socio-economic condition, effective steps are being taken on coastal zone management policy. Necessary measures are being taken for women's development and gender equality (MoWR 2005, 8).

Legislations and policies related to coastal zone management of Bangladesh mainly includes-

- Priority Investment Program (PIP), 2004
- Coastal Development Strategy (CZS), 2006
- United Nation Conservations on the Law of the Sea (UNCLOS), 1982



3.4 Policy Implementation

Policy implementation means the turning of the policy into a plan and action measures (Rosenbaum, 2011). Policy implementation includes all the activities that result from the official acceptance of a policy. The government of Bangladesh took action to apply the Coastal Zone Policy (2005) using the Integrated Coastal Zone Management (ICZM) program (2006-2010). ICZM is a dynamic, multidisciplinary and iterative process to promote sustainable management of the coastal zone. It covers the full cycle of information collection, planning, decision making, management and monitoring of implementation. The scope of ICZM in Bangladesh is the management of coastal people, coastal economy, coastal environment, coastal resources and sustainable management of all above issues.

In the formulation of Integrated Coastal Zone Management Policy, different external actors like United Nations General Assembly, international forum, international organizations, donor agencies (USAID, IDA, UNDP) and internal actors such as Ministry of Water Resources (MoWR), Ministry of Fisheries (MoF), Ministry of Land (MoL), Ministry of Food and Disaster Management (MoF&DM), Ministry of Environment and Forest (MoEF), Planning Commission, other relevant ministries, consultants, civil society, environmental NGOs and so on played different roles (Aminuzzaman, 2010). The priority investment program (PIP 2004) is a remarkable program that works for mitigation of coastal disasters, safety and protection of the coastal zone. The other priority area of investment programs are: environment management, water resource management, rural livelihood and sustainable economic opportunities for coastal communities, infrastructure development, social development and productive economic activities. The Poverty Reduction Policy Agenda (2005-2007) is another issue developed through the program. The main objectives of this program were a useful application of ICZM in Bangladesh with operational and institutional procedures and regular efforts to implement ICZM via Coastal Development Strategy (CDS) and Coastal Zone Policy (CZP) (Islam, 2009). “The goal of integrated coastal zone management is: to create conditions, in which the reduction of poverty, development of sustainable livelihoods and the integration of the coastal zone into national processes can take place” (MoWR 2005, 2).



For the sustainable development of coastal communities, governmental and non-governmental organizations work together in coastal regions. According to the Government of Bangladesh organizational structure, the Ministry of Water Resources (MoWR) is the central authority responsible for the implementation of the coastal zone management policy. Other ministries also involved for the implementation of plan and policies. Ministry of Fisheries and Livestock-MoF&L, Ministry of Environment and Forest- MoE&F, Ministry of Agriculture-MoA, Coastal Zone Development Board-CZDB, Wetland Development Board -WDB, Ministry of Water & Resources-MoWR, Ministry of Health and Family Welfare-MoH&FW, Ministry of Public Administration-MoPA, Ministry of Finance-MoF (Khan, 2011).

Deputy Director (DD) of Agriculture, Upazila Agriculture Extension Officer (UAEO), Sub- Assistant Agriculture Officer (SAAO) are collaborating with each other for development of Coastal agriculture. They are directly involved for the Agriculture related policy implementation. Ministry of Fisheries (MoF) and the Department of Fisheries (DoF) are working for the development of Coastal and Marine fisheries. Deputy Director (DD), Upazila Fisheries Extension Officer (UAEO), Sub- Assistant Fisheries Officer (SAFO) are directly responsible for the implementation of policy. Ministry of Disasters Management & Relief (MoDMR), Department of Digester Management (DoDM)/ Director General (DG), District Relief & Rehabilitation Officer(DRRO, Project Implementation Officer(PIO) and Union Council Chairmen are working with each other and implementing the coastal management policy. Ministry of Water Resources (MoWR) is the central authority responsible for translating Coastal Zone Management Policy into action. Ministry of Environment & Forest (MoE&F) is working to develop coastal zone afforestation and reduction of environmental pollution in the coastal zone. Department of Environment (DoE) and climate change cell collaborate are responsible for the implementation of environmental policy in the coastal regions.



Table1: Stakeholders of various ministries at different levels

Ministry	Department/officer	Implementation officer at District level	Implementation officer at Upazila level	Implementation officer at local level
Ministry of Agriculture (MoA)	Department of Agricultural Extension (DAE)	Deputy Director (DD)	Upazila Agriculture Extension Officer (UAEO)	Sub- Assistant Agriculture Officer (SAAO)
Ministry of Fisheries (MoF)	Department of Fisheries (DoF)	Deputy Director (DD)	Upazila Fisheries Extension Officer (UAEO)	Sub- Assistant Fisheries Officer (SAFO)
Ministry of Disasters Management & Relief (MoDMR)	Department of Disaster Management (DoDM)/ Director General (DG)	District Relief & Rehabilitation Officer (DRRO)	Project Implementation Officer (PIO)	Union Council Chairmen
	Comprehensive Disaster Management Program (CDMP)/ National Project Directors (NPD)			
Ministry of Water Resources (MoWR)	Bangladesh Water Development Board (BWDB)/ Executive Engineers Working at the Study Sites (Divisional or sub- Divisional)			
Ministry of Environment & Forest (MoE&F)	Department of Environment (DoE)/ Focal Point, Climate Change cell (CCC)			

(Source, Awal 2014)

The goals are ensuring fresh and safe water availability, safety for man-made and natural disasters, optimizing the use of the coastal zone, promoting economic growth, sustainable management of natural resources, improving livelihood conditions of coastal people, environmental conservation, empowerment through knowledge management, creating an enabling institutional environment. For the development of



the coastal zone, various kinds of program have implemented by the government. Various kinds of projects have been taken and also implemented for the coastal fishers. Most of the people of coastal are involved with fisheries. So, the Department of Fisheries (DoF) has taken many programs for marine and brackish water fisheries. As the economic condition of coastal fishing communities is not well, many local NGOs like BRAC, ASA, Karitas have come forward to minimize their economic crisis.

Over the last two decades, NGOs in Bangladesh have built up an exclusive network of support services for the poor to improve their livelihood opportunities. A large number of NGOs are working in coastal areas, in addition to governmental programs. The 'Inventory of Coastal Zone Projects and initiatives' report noted that approximately 400 NGOs are involved in coastal regions (Ali 2003). Financial organization and implementation bodies of the government, as well as joint and bilateral donors, several NGOs currently have coastal zone programs in areas such as: urban development through empowering fishing communities, wetland resources management and income-earning capacity building, agricultural and small-scale agro-based projects, micro and small scale development involving both female and male entrepreneurs and self-employed, alternative livelihoods for the local communities living in the wetlands of the south-east coastal region and other income and poverty reduction activities.

Grameen Bank plays a significant role in the economic development of coastal communities in many ways. Alternative livelihoods are being introduced to rehabilitate the livelihood-displaced people. However; the Coastal Zone Management Policy (CZMP) of Bangladesh covers a broad range of issues from economic prosperity to ecosystem defense and preservation. But there have been no alternative ways for dealing with natural disasters or risk reduction. Small agricultural credit of the government's Krishi Bank (agricultural bank) as well as micro-credit program of the Government's BRDB, also provide support for income and rural development in the coastal regions (PDO-ICZM, 2005). Various micro-finance organizations like BRAC, ASA, Proshika and Caritas, which together account for seventy-seven percent of the total microcredit of all micro-financial institutions with a presence in the coastal zone (PDO-ICZM, 2004).



A lot of initiatives has been undertaken to combat the adverse impacts of climate change. Mobilizing fund from the domestic sources, climate change trust has been established. The trust is operated under the Ministry of Environment & Forests. The trust already financed hundreds of climate change adaptation projects. The Ministry of Environment & Forest (MoE&F) is working for managing the exploitation of forest and protection of wildlife. Mangrove forestation is another program of government for the protection of wildlife and coastal zone protection. Mangrove forest acts as a natural barrier during storm and cyclone. Due to extreme weather events and hydro-climatic disasters, the coastal dwellers are losing their traditional livelihoods. Many local and international agencies are also working with the government for protection of the coastal area from the storm and other natural calamities.

Already the government of Bangladesh has adopted some extraordinary measures to improve disaster-prone coastal planning and management with implementation for long-time disaster management. A green-belt has been developed along the coastline to reduce the severity of the disasters. Bangladesh has implemented several measures to support planning and management in disaster-prone coastal areas that have implications for long-term disaster management and tsunami mitigation. The Ministry of Bangladesh is also working for the poverty elimination program of the coastal zone. There are few international organizations like UNDP, UNICEF and USAID are also working for coastal communities. Several measures have been implemented to support planning and management in the disaster-prone areas with implications for long term disaster management and tsunami mitigation (Islam, 2009).

3.5. Policy Monitoring and Evaluation

The government of Bangladesh has made statements on the coastal zone policy due to development goals. These policies provide general guidelines so that the people of the coastal zone may pursue their livelihood under a secured condition in a sustainable manner. Adequate measures have been taken to realize the goals of poverty reduction by enhancing economic development in the coastal areas. Based on local resources, employment opportunities have been explored to improve people's income. Non-Governmental Organizations (NGOs) and private sectors have encouraged to implement opportunities for coastal people. Reducing natural disaster risk would be an important part of the national poverty reduction strategies. The coastal zone's available resources have been used by sustainable management



to boost the living standards of the coastal communities by investing in various sectors like agricultural development and agro-based industries, marine fisheries, shrimp culture, crab culture, salt production, shell culture, pearl culture, livestock development, ship building, ship-breaking, tourism, extension of beach minerals, renewable and non-renewable energy, etc.

Special emphasis has been given to use renewable resources. Necessary steps have been taken for small and medium private investments for coastal development. Though many agencies and stakeholders are directly involved in the management of resources, they have not been able to address the real problems. The lack of coordination between the organizations and actors involved in the management of coastal resources another obstacle for fair decision making. There was no clear guidance on how local development agencies should collaborate with government agencies, which is an important limitation of the coastal zone management policy (Ahmad, 2019). The land-use conflict occurs due to lack of appropriate guidelines for natural resource conservation and utilization, as a result the coastal zone turned into areas of major conflicts. Moreover, Local coastal communities are using natural resources without any restrictions.

As a result, some natural resources are completely destroyed (e.g. Chakaria Sundarban mangrove forest). Unplanned land use, industrialization and urbanization on coastal regions and other man-made hazards are occurred due to lacks of proper laws implementation. Local people and political parties are illegally using mangrove forest for huge profit. They illegally cutting huge number of trees. As a result, the mangrove forest is now in critical condition. Due to lack of adequately policy implementation, the marine fisheries are reducing day by day. Overfishing, using destructive fishing gears, pollution and fish habitat loss is the main factors for the reduction of fish. Moreover, the various kinds of chemical fertilizers and insecticides are using for crop and vegetable production. So, freshwater and marine fish are reducing on the coastal regions.

Even though Bangladesh does have laws and policies to protect the coastal region, proper enforcement of rules and policies are absent. Due to lack of proper policy implementation and monitoring, coastal zone policy are not able to get successful outcome. Besides, it is crucial to review and analyze the existing



environmental laws to attain sustainability. Most of the laws are outdated in the context of present climate change. Effective assessment and evaluation of existing policies are required to ensure sustainability in the coastal region (MoWR 2005, 2).

4. Conclusion

Though coastal zone is the most significant asset of Bangladesh for its socio-economic development, this zone is more vulnerable compare to other part of country, land related conflict, for example, has arose due to the lack of adequate regulations regarding the protection and use of marine resources in coastal area. Only few studies revealed the impact of coastal zone management in coastal region, thereby, it is necessary to explore the actual consequences of coastal zone management. Again, current integrated coastal zone management is primarily focused on coastal development; however, Bangladesh has required to establish a integrate bottom up approach for sustainable development of the coastal zone where coastal community, policy maker, environmentalist working effectively.

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