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Integrated Coastal Zone Management in Bangladesh : A Case for People's Management

Abstract

The ocean management of Bangladesh reached its watershed with the adoption of Integrated Coastal Zone Management (ICZM) by the country as per the Government Policy Note of 1999. Through ICZM, a sophisticated program of interdisciplinary nature, the country seeks to attain sustainable development, conservation and preservation of its coastal resources through an integrated management. However, the necessary capacity, i.e., legal and administrative, financial, technical, human resource etc. for carrying out such a grandiose program are at present absent in the country. The challenges for Bangladesh, therefore, are enormous not only for building such capacities but as well for translating into reality the very fundamental ideal of the project i.e., integration. This entails undertaking a number of measures to facilitate vertical and horizontal integration within the government involving all relevant stakeholders in the process to identify and work towards resolving critical oceanic issues. If ICZM is to become a successful enterprise, the involvement of the coastal community in the entire process as a formidable stakeholder would be an indispensable imperative for all. The paper tries to examine the possibility of coastal community's involvement in the current ICZM Project in Bangladesh. The rationale behind the query is explained by two facts. *First*, empirical evidences show that prior to the launching of ICZM, various coastal development projects either failed or had little success due to improper consideration given to the needs and aspirations of the coastal community. *Second*, the very recognition that community participation and commitment are necessary for projects that seek to reduce the vulnerabilities in the coastal zone, and develop, preserve and conserve its

resources in a sustainable manner. The initiative to include the coastal community in Bangladesh's ICZM is likely to get support from the NGOs, academia, members of the civil society, human rights activists, community based organizations and even donors, but much would depend on the support to be available from the national level in terms of policies, resources and institutions. The paper suggests a linkage between the national and local levels in an institutional way in the form of a co-management system which, at present, is the missing link in the newly created ICZM structure in Bangladesh. The proposed management is likely to permit the coastal community to develop various institutional, administrative, financial and legal arrangements for taking responsibility of the coastal zone, and hence become the stewards and custodians of their resources. The onus, therefore, is on the national government to empower the community economically, politically, culturally and socially through a number of well organized capacity building measures. Simultaneously, the state needs to build capacity at the national level too.

Introduction

The ocean management of Bangladesh reached its watershed with the adoption of Integrated Coastal Zone Management (ICZM) by the country as per the government Policy Note of 1999. As a starting point of the process, the overall goal as mentioned in the Note is, "to create conditions in which the development of sustainable livelihoods and the integration of the coastal zone into national process can take place".¹ Starting from the goal, the vision as envisaged for the proposed ICZM is 'to make the coastal zone a place where the local people can pursue their life and livelihood within a secure set of physical conditions and can make use of the

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- 1 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', September 12, 2001, Organized by the Ministry of Water Resource, Bangladesh, p. 5.

natural resources for their well-being, which is also conducive to the long-term sustainable development of the region and the nation as a whole'.²

Needless to say, through ICZM, a sophisticated program of interdisciplinary nature, the country seeks to attain sustainable development, conservation and preservation of its coastal resources through an integrated management system. The imperatives for taking the initiative for such a grandiose program as is ICZM by Bangladesh are many. In view of the failure in various sustainable development and environmental protection programs in the terrestrial domain, the government feels that it can probably no longer remain indifferent to a number of threats to the country's marine environment like pollution, depletion of resources, loss of ecosystem and biodiversity, the utter impoverishment of the coastal community etc. All such issues seem to have attained a problematic dimension of immense magnitude in recent times, and it is now being increasingly felt that their solution lies no where other than in an integrated and effective planning and management régime for addressing them. Few critics, however, view the initiative from a critical angle, and argue that the reasons for undertaking the programme may be the following. *First*, the country's desire to be à la mode with integrated coastal developments in other regions of the world, in particular, South Asia and South East Asia. *Second*, the country's acquiescence to the pressures and dictates of the donors. *Third*, to facilitate a further inflow of foreign aid and assistance into the country under the garb of sustainable development and environmental protection.

While credence can be given to some of the viewpoints of the critics, the fact that a new awareness has marked the policy makers' approach towards the country's ocean management is in

2 *Ibid.*, p. 8.

itself a novelty. What probably remains a subject of concern is the actual capacity of a country like Bangladesh in facing the long list of challenges that awaits its policy makers with respect to ICZM. Some of these challenges are deeply embedded in Bangladesh's peculiar social, economic and political realities, while the others are likely to be posed by the very fundamentals and ethics of an ICZM. In the latter case, one, thus, needs to take note of the current fuzzy governance in the country, mismanagement of local resources and foreign aid, abysmal poverty, rampant corruption, violation of human rights, criminalization and violence, the alienation of the poor from the society in all respects and more. While in the former case, the country's initiative for ICZM – a sophisticated multi-disciplinary approach to development – entails undertaking a number of measures to facilitate vertical and horizontal integration within government and involving all relevant stakeholders in the process to identify and work toward resolving critical oceanic issues. In particular, if ICZM in Bangladesh is to become a successful enterprise, then the involvement of the coastal community in the process as a formidable stakeholder would be an indispensable imperative for all. It needs hardly any mention that in contemporary ocean management, ICZM endorses participation of the coastal community in the institutional form and shape of 'Community based coastal management' (CBCM).

At present, the current ICZM in Bangladesh reflects, at least in black and white, the government's commitment or promise to include the coastal community in the process, and that the strategy is expected to find moral support from a number of NGOs, academics, human rights activists, community based organizations and even donors. Much would, however, depend on the support to be available from the national level, in other words, the State, in terms of policies, resources and institutions to facilitate the local participation. If history is any testimony, one would then probably

notice that despite the rhetoric of community involvement in various terrestrial projects of the government under the slogan of 'poverty alleviation', its realization remains as illusive as ever. It is in this context that the paper finds its rationale in proposing a '*people based management framework*' for the ICZM in Bangladesh in its proper perspective.

The paper argues that there is the missing link in the current ICZM structure, i.e., community based management that would permit the coastal community to develop various institutional, administrative, financial and legal arrangements for taking responsibility of the coastal zone and hence become the stewards and custodians of their resources. Towards this end, it would be the responsibility of the national government to empower the community economically, politically culturally and socially. The question, therefore, is one of linkage between the levels – national and local, in order to make the newly floated ICZM program more sustainable, viable, legitimate and community oriented in nature.

Structure of the Paper

The paper is divided into six principal chapters, each of few sections. **Chapter I** entitled "Theoretical and Conceptual Framework" attempts to throw few reflections on the concept of ICZM with emphasis on people's participation in the process. This sets the conceptual framework for the entire discussion undertaken in the paper. **Chapter II** entitled, "A Profile of Bangladesh Coastal Zone" deals with the physiography, biodiversity, ecosystem, socio-economic and cultural matrix of the zone. The discussion would allow a comprehension of few outstanding physiographic and geomorphological features of the region, and as well of ethnicity, culture, occupation, infrastructures etc. of the region with implications for management of the coastal zone. **Chapter III** entitled, "Threats and Opportunities for the Coastal Community in

Bangladesh : Identifying the Key Policy Issues” throws light on the vulnerability of the region to certain threats, the victim of which is the long neglected coastal community. Alongside, the region is shown as one of opportunities for a number of stakeholders . As a result, there arise few challenges for the management in identifying the key policy issues with respect to the zone. **Chapter IV** entitled “Current Integrated Coastal Zone Management Regime in Bangladesh” deals with the evolution of the concept of ICZM in Bangladesh, and the various facets of management responsibility that the PDO (Project Development Office) -ICZM would be required to carry out in accomplishing the task. Descriptive in nature, the chapter deals with the policies, legal structures and institutional frameworks that are at the base of the current management structure of PDO-ICZM. **Chapter V** entitled “Community Based Co Management in Coastal Zone - Missing Link in the ICZM” points out the absence of community participation in the current ICZM program, and as such suggests a community based co-management in the zone through a linkage between the national and local levels. In other words, a ‘two track management’ is proposed. **Chapter VI** entitled “New Management Approach: Future Strategies, Opportunities and Challenges” is suggestive in nature, and provides few suggestions for reforms at the levels, both national and local. In doing so, opportunities and challenges are as well identified. Finally, the paper ends with a general conclusion.

Methodology

The methodology of the paper is based on an empirical and analytical approach towards understanding the problems in managing the coastal zone of Bangladesh in an integrated and holistic manner. Research materials from books, journals, newspapers, electronic media and publications of few international bodies constitute the research documents of the author.

Chapter I

Theoretical and Conceptual framework

Integrated Coastal Zone Management (ICZM) is a concept essentially associated with contemporary ocean governance or management. As Professor Couper remarks, "Ocean management is a methodology through which sector activities and environmental quality in a sea area are considered as a whole, and their uses organized, in order to maximize net benefits to a nation, but without prejudicing local socio-economic interests or jeopardizing benefits to future generation",³ Drawing from this logic, integrated coastal management (ICM) becomes an important component of contemporary ocean management in so far as it envisages planning and management of coastal resources and environments in a manner that is based on the physical, socio-economic and governance inter-connections both within and among the dynamic coastal systems.⁴ This chapter of the paper attempts to study the concept in its proper perspective by throwing few reflections on its evolution, meaning and its very cardinal element, i.e., integration. The discussion also brings within its fold people's participation in an ICZM process, in other words, of the coastal community as such participation is recognized to be an integral part of the ICZM process in contemporary ocean management. The discussion provides the theoretical and conceptual base of the current study.

ICZM as a concept is preceded by a brief history. It is, in effect, the qualifying term 'integration' that has given much currency to the earlier concept of coastal zone management (CZM) of the mid-sixties in contemporary ocean management. The concept of the

3 Cited in Elisabeth Mann Borgese, Ocean Governance And The United Nations, Centre for Foreign Policy Studies, Dalhousie University, Halifax, 1996, p. 105.

4 Larry Hildebrand

period connoted merely the idea of a zone consisting of a narrow area of coastal waters and the foreshore and the immediately adjacent area inland with special focus on its protection due to its vulnerability to a myriads of intensive, and often competing uses.⁵ Simpler in form and meaning, the then CZM was much popularized by the UNEP (United Nations Environment Program) when it adopted it at the global level in a number of its Regional Seas Programs.⁶ Moreover, the CZM of the time was meant for variable adoption by countries with different needs, capabilities, geographical circumstances and administrative systems.

The concept, however, soon attained a complex form due to certain realities like the extension of maritime jurisdiction of a large number of coastal states (as per UNCLOS III), lumping of development and environment under the rubric of sustainable development and the argument in favor of extending it to the oceanic domain, various laws, conventions and treaties on environment with direct or indirect impact on the marine environment. As far as the integration element in coastal zone management is concerned, it would not be out of relevance to mention that it is Chapter 17 of Agenda 21 of the Rio Summit which launched the idea based on a philosophy that 'the problems of the oceans are closely inter-linked and need to be considered as a

5 David VanderZwaag and Douglas M. Johnson, "Towards The Management of the Gulf of Thailand : Charting the Course of Cooperation", in Douglas M. Johnson (ed.), SEAPOL Integrated Studies of the Gulf of Thailand Volume I, SEAPOL (Southeast Asian Programme in Ocean Law, Policy and Management), 1998, p. 77.

6 One of the most important results of the Stockholm Conference was the creation in 1972 of the United Nations Environment Programme (UNEP) as the official mechanism for promoting and coordinating environmental initiatives within the UN framework. Although, it was to concentrate itself in the first generation environmental problems, marine sector was its priority. The result being the creation of regional seas programs in several regions of the globe.

whole'. Given the fact that Agenda 21 viewed ocean management from a broader perspective in conjunction with the UNCLOS, it had little hesitation in including EEZ within the fold of CZM. In the post- Rio period, CZM was, therefore, baptized as ICZM envisaging the management of an area encompassing both the land and water sides through integrated management and sustainable development of coastal and marine areas including Exclusive Economic Zones (off-shore waters mainly out to the edge of national jurisdiction of 200 nautical miles).⁷ Interestingly, there is even the current tendency to extend ICZM even to high seas much beyond the limit of national jurisdiction.⁸

Literature on ICZM is redundant, and various definitions have been furnished by different scholars to explain the concept. Out of these, the one furnished by Cicin-Sain and Knecht, is cited here in the following words, "Integrated Coastal Management (ICM) can be defined as a continuous and dynamic process by which decisions are taken for the sustainable use, development, and protection of coastal and marine areas and resources. ICM acknowledges the interrelationships that exist among coastal and ocean uses and the environments they potentially affect, and is designed to overcome the fragmentation inherent in the sectoral management approach. ICM is multipurpose oriented, it analyzes and addresses implications of development, conflicting uses and interrelationships between physical processes and human activities, and it promotes linkages and harmonization among sectoral coastal and ocean activities".⁹ The definition, at least, tries to bring out certain salient

7 'Definition of Coast' in "Integrated Coastal Management : An International Priority", published by Center for the Study of Marine Policy, University of Delaware, NOAA's National Ocean Service Intergovernmental Oceanographic Commissions, The World Bank and UNEP/GPA, 1994, p. 4

8 *Ibid.*

9 'What is Integrated Coastal Management' in *Ibid.*, p. 1. Some of the driving forces of ICZM are high rates of population growth, poverty exacerbated by

features associated with integration in ocean management in general, and in ICM in particular. The list, thus, would be a long one to include such principles as interconnectedness between oceanic activities, sustainability, conservation, inter-departmental/sectoral coordination, harmonization and communications, shared interdependence between disciplines (natural sciences, social sciences, engineering etc.) and a host of others. The result being that ever since the concept of 'integrated management' was presented at the United Nations Conference on Environment and Development (UNCED) in 1992, it has witnessed a growth industry with respect to its theoretical meanings and parameters, the areas of its applicability, the methods, programs and strategies of its implementation. The concept eventually became a part of the rhetoric for sustainable development, and as well a buzz word and a money maker as plans for its implementation attracted international funding from different donors and post-UNCED resources.

On the subject of ICM, the debate, which is still an on-going one, seems to center around the question of integration. This, in other words, implies how a management system would establish a policy and planning procedures and programmes to create various integrative mechanisms in order to make the system an integrated one. While in case of land management, such integration may

dwindling resources, degraded fisheries habitat and lack of alternative livelihoods, large scale, quick profit, commercial enterprises which degrade resources and conflict with interests of the local people, lack of awareness about management for resource sustainability among local people and policy makers, lack of understanding of the economic contribution of coastal resources to society and lack of serious government follow-up in support and enforcement of conservation programs John R Clark, cited in 'An Introduction to Coastal Zone Management – Selected Materials', Volume 1, Prepared by the Oceans Institute of Canada for the Workshop on ICZM : National Capacity Building of Bangladesh, BIISS, 20-22 January 1977, Compiled by Nahid Islam, Diana Babor, M. Ibrahim Khan and Apurba Krishna Deb, p. 156.

appear to be less cumbersome and somewhat attainable, in case of ocean management, the task becomes a tortuous one. As Couper points out, "unlike land use management, ocean management is complicated by the fluidity of the medium, its three-dimensional parameters, mobility of many resources and activities, the complexity of interactive ecosystems, and the lack of relevance of administrative boundaries to the natural environment".¹⁰ He then adds, "ocean management is to be considered as a methodology through which several activities (navigation, fishing, mining etc.) and environmental quality in a sea are considered as a whole, and their uses optimized in order to maximize net benefits to a nation, but without prejudicing local socio-economic interests of jeopardizing benefits to future generations".¹¹ Besides Couper, prominent writers like Miles, Underdal, Peet, Cicin-Sain have their own respective arguments as to how integration is to be achieved. Important to note are the conditions set by them for meaningful integration. which in most cases may appear to retain mere theoretical value than operational one. Are the triple requirements of comprehensiveness, aggregation and consistency as suggested by Underdal realizable?¹² How can the integrated policy that Miles considers as *raison d'être* of integrated management be arrived at? As he suggests, 'national objectives and strategies would be defined as a result of an explicit analytical exercise involving the bureaucracy, legislature, and the marine user community. The exercise itself would pose and seek to answer the following questions: (i) what do we want? (ii) what should we want given our bio-physical conditions? (iii) how do we get there? (iv) what are we

10 Cited in Elisabeth Mann Borgese, *Ocean Governance and the United Nations*, Centre for Foreign Policy Studies, Dalhousie University, Halifax, Canada, 1996, p. 105.

11 *Ibid.*

12 Arild Underdal, "Integrated Marine Policy : What?Why?How?", *Marine Policy*, July 1980, p. 159.

prepared to pay to get there?¹³ Equally important to take note of is pessimism that many such writers hint at with respect to integration. Underdal, thus, stresses that 'the ideal model of an integrated policy will rarely, if ever, be a sensible goal. When the costs of integration are taken into account, some information in policy is not only necessary, but also desirable'. In a similar vein, Cicin-Sain remains cautious about the costs of policy integration which, in her opinion, should be kept in mind since it may outweigh the benefits. Interestingly, Cicin, in her continuum of policy integration, sees integration process starting from a fragmented approach¹⁴ as opposed to Miles who considers an integrated national policy as the starting point for any integration in the marine domain. More dismaying would be the viewpoint of Peet who questions the possibility of integrated ocean management in view of the fact that ocean systems are too complex to be managed by a single system of integrated ocean management.¹⁵

Despite many complexities inherent in integration, ICZM has been so much internationalized that many of the coastal States, in particular, in the post-Rio period, have embarked on their respective ICM programs under various names like coastal zone management, integrated coastal zone planning and/or management, coastal area planning and/or management, and integrated coastal resources planning and/or management.¹⁶ The main reasons why many coastal

13 Edward L. Miles, "Future Challenges in Ocean Management : Towards Integrated National Ocean Policy", in Paolo Fabbri (ed.), Ocean Management in Global Change, London: Elsevier, 1992, p. 598.

14 Elisabeth Mann Borgese, op.cit., p. 106.

15 Ibid., p. 10

16 Larry Hildebrand, 'Integrated Coastal Management : Lessons Learned and Challenges Ahead', Discussion Document for Managing Shared Water/Coastal Zone Canada, 2002 International Conference, Hamilton, Ontario, Canada - June 23-28, 2002, p. 3. The author sees ICM as 'a multi-disciplinary process that unites levels of government and the community,

nations have adopted an integrated approach for managing oceans and coasts are mainly two fold: (i) the effects of ocean and coastal uses, as well as activities further upland can have on ocean and coastal environment and (ii) the effects ocean and coastal users can have on one another. As a result, for individual nations, the need to establish a program of integrated coastal management has arisen for a number of reasons like severe depletion of coastal and ocean resources, increase in pollution that endangers public health or poses threats to water-based industries such as aquaculture, fishing and tourism, resolution of conflicts over multiple-use of ocean resources by several stakeholders, a desire to increase the economic benefits obtained from use of the coast and ocean, a desire to develop uses of the coastal and marine area previously not exploited etc.¹⁷ A close observation of such needs reveal an interesting fact that the specific problems and development opportunities that have motivated the initiation and the preparation of the ICZM programs are very similar around the world despite the considerable variation among coastal nations with respect to their socio-economic and environmental conditions, geographical and climate factors, laws and institutional arrangements. Due to this variation, no particular model of ICZM is found to be applicable in case of any coastal State, although few models developed so far suggest certain elements that should be incorporated in any given ICZM programme. Thus, for example, the model developed by Chua Thia-Eng suggests that the following elements are at best required for an effective ICZM like (i) a dynamic goal or vision of the desired condition of the oceanic or coastal area for a period significantly longer than conventional economic planning horizons, say 25 or 50 years; (ii) the formulation

science and management, sectoral and public interests, the preparation and implementation of a program for the protection and the sustainable development of coastal resources and environments'.

17 'What triggeres the Need for ICM' in "Integrated Coastal Management : An International Priority", op.cit., p. 2.

of national objectives to which policies and management are directed; (iii) guiding principles for exercising discretionary powers for planning, granting approvals, or making changes to the purpose or extent of use and access; (iv) a strategy, commitment and resources for the detailed day-to-day management involving several agencies and the community; (v) clear, legally based identification of authority, precedence and accountability and (vi) performance indicators and monitoring to enable objective assessment of the extent to which goals and objectives have been achieved.¹⁸ Without a proper consideration to such elements, it would probably be difficult to achieve integration (i) between nations in the international and ecosystem contexts; (ii) among levels of government (national, sub-national, local); (iii) among sectors (tourism, oil and gas, fisheries, mining etc.); (iv) between land and oceanic sides of the coastal zone and (v) between disciplines (natural sciences, social sciences, engineering), all of which are envisaged in exclusive oceanic/coastal context.¹⁹

It should be mentioned that while the practice of ICZM with the above objectives, principles and fundamentals has led to the creation of a new discipline with new understanding and approaches to ocean management, in practice, most of the programs have encountered a number of challenges of political, administrative, institutional, societal and legal nature. The result being guarded optimism or to say, skepticism, about the actual accomplishments of the program in several countries. In particular, a question, often raised with respect to ICZM program is its success in developing the coastal community. The question finds its logic in the very fact that ICZM, in its entirety, is a program to improve the quality of life of the communities that depend on coastal resources by providing them with needed development (particularly coastal dependent

18 Elisabeth Mann Borgese, *op.cit.*, pp. 117-118.

19 *Ibid.*, p. 107.

development) while maintaining the biological diversity and productivity of coastal ecosystems.²⁰ The very ethics of ICZM suggest that: (i) coastal community is an integral part of the ICZM process; (ii) it being nearer to the physical conditions and resources of the zone, needs to play an active and responsible role in the development of the area; (iii) it needs to share planning and decision making responsibilities with the government; (iv) in case of deficiency, there is the need to build its capacity and finally (v) it has the right to become the steward of the endowed resources and environment of its area. Given the fact that the coastal community is linked with the local level, the top-down bureaucratic and centralized management of ICZM programs in most cases, in particular in the non-democratic Third World nations, has virtually kept the local coastal community at bay. In strict ICZM sense, there has hardly been a proper integration between the national and local levels. The neglect eventually led many to incorporate Community Based Management in the over all ICZM scheme under the shape of Community Based Coastal Management (CBCM) in order not only to duly consider the socio-economic conditions of the coastal community but as well to protect them from various threats peculiar to most of the coastal zones and create opportunities for them hitherto unexploited in the region. The ostensible aim behind all such efforts is to make the coastal community an effective stakeholder in the entire ICZM process. As E. M. Ferrer and C. M. Nozawa describe, "CBCM is people-centered, community-oriented and resource based. It starts from the basic premise that people have the innate capacity to understand and act on their own problems. It begins where the people are, i.e. what the people already know, and build on this knowledge to develop further their knowledge and create a new consciousness. It strives for a more active people's participation in the planning, implementation and evaluation of

20 Larry Hilderbrand, *op.cit.*, p. 3.

coastal resource management programs".²¹ Their viewpoint is further substantiated by L. Hildebrand in the following words, "Experience around the world is building in community-based coastal management wherein the people who live and work in coastal areas and depend on these resources are enabled to take an active and responsible role and increasingly share planning and decision making responsibilities with government".²²

Needless to state, there is now a growing tendency around the world for undertaking CBCM initiatives as central components of ICZM process. The tendency seems to be more unbridled in those areas where the reliance on coastal environment for food and livelihoods is more and where social demands for outputs from a coastal area usually exceed the capacity of the area to meet all of the demands simultaneously. However, the initiatives for CBCM are not uniform, and that different models and techniques exist to operationalize the process. The un-uniformity in the initiatives or the difference in the models or techniques is explained by the degree of dependence of coastal communities on the resources of the area, nature of governance, effectiveness of national ocean or coastal policy and the extent of participation of agencies, in particular the NGOs, private groups, members of the civil society etc. The subsequent chapters would demonstrate the need for people's participation in the management of a complex, yet dynamic region, i.e., the coastal zone of Bangladesh.

21 Cited in Nick Harvey, Beverley D Clarke and Patricia Carvalho, "The role of the Australian *Coastcare* program in community-based coastal mangement : A case study from Southern Australia", *Ocean and Coastal Management* 44 (2001), pp. 161-181.

22 Ibid.

Chapter II

A Profile of Bangladesh Coastal Zone

Since integrated coastal management constitutes a spatially defined management process, it becomes essential for an ocean manager to develop a clear understanding of the concept of a 'coast'.²³ The concept, in effect, abounds in definitions furnished by several authors from different angles. Briefly, some of the characteristics of a coast flowing from such definitions would be: (i) a coast is a place where the waters of the seas meet the land, i.e., the interface between the land and the sea;²⁴ (ii) it is an area of

23 Coastal areas are diverse in function and form, and they do not lend themselves well to definition by strict spatial boundaries. Unlike watersheds, there are no exact natural boundaries that unambiguously delineate coastal areas. What is, perhaps, important to bear in mind is the importance of a coastal zone as an area of management for a number of reasons like : (i) approximately 70% of the earth's non-frozen land surface ultimately drains into coastal waters and oceans (i.e., coastal waters and the oceans are the planet's ultimate sink); (ii) in general, the coastal zone of any nation is one of its most valued and its most contentious areas of real estate; (iii) the coastal zone has the greatest aggregation of environmental, resource, and physical systems in comparison to any of the earth's other types of biogeographic units; (iv) the coastal zone has the highest concentration of natural hazards in the world (e.g., coastal erosion, landslides, river or estuary flooding, storm surge flooding and winds from ocean-born storm events (hurricanes, cyclones, typhoons, earthquakes, tsunamis and volcanic eruptions); (v) there are, at present, 172 sovereign nations that either open or an ocean, sea, gulf, bay or land-locked sea or lake of international significance. Twenty-seven land-locked nations have shared boundaries in large lakes or landlocked seas; (vi) approximately 50% of the world's population lives within 150 kilometers of a coastline and it is compressed into an area that consists of only 8% of the world's terrestrial surface that is habitable; (vii) approximately 70% of the world's coastal zone is under the jurisdiction of developing nations or nations in transition from a centralized to a market economy. Larry Hilderbrand, *op. cit.*, p. 4.

24 'Definition of Coast' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 2.

transition and an eco-tone between air, land and sea and between terrestrial fresh water and marine saline water;²⁵ (iii) it comprises an area on either side of the shoreline where land and air interact at interfaces. On the land-ward side, this includes coastal land influenced by marine waters, and on the sea ward side that portion of the coastal sea influenced by natural or man-made processes on land or on the continental shelf;²⁶ (iv) it includes the transitional and inter-tidal areas, estuaries, lagoons, deltas, salt marshes, wetlands and beaches and may extend inland from the shoreline only to the extent necessary to control shorelines, the use of which have direct and significant impact on coastal waters;²⁷ (v) it is a zone that contains diverse and productive habitats important for human settlement, development and local subsistence. It is also an area of natural defense against all oceanic hazards. It may include EEZ where the state should manage the development and conservation of natural resources for the benefit of people. In a more ambitious tone, it may also extend up to the high seas beyond the limit of national jurisdiction.²⁸

While the above characteristics distinctly bring out several areas within the fold of a coastal zone, the relevant task for management would be to study the impact of these areas on the livelihood, beliefs, behavior etc. of the people who inhabit them. Thus, for managing a coastal zone, the managers and policy makers opt for a more operational and convenient definition of a coast that takes into account the direct relationship between the

25 K. Maudood Elahi, Subash C. Das and Sabiha Sultan, "Geography of Coastal Environment : A Study of Selected Issues", in Abdul Bayes and Anu Muhammad (ed.), Bangladesh at 25 : An Analytical Discourse on Development, The University Press, Dhaka, 1990, p. 335.

26 Ibid.

27 'Definition of Coast' in "Integrated Coastal Management : An International Priority", op.cit., p. 1.

28 Ibid.

coastal environment and the people who live, use or otherwise are concerned with it. Logically, therefore, such definition would not take the coastal zone too deep into the inland nor too far in to the high seas.²⁹ This also holds true in case of Bangladesh where the demarcation of the coastal zone is free from confusion and ambiguity due to its marked physical features, administrative systems, environmental units, and socio-economic profile. The Policy Note of the Government of Bangladesh (1999), therefore, stated, "We need not worry much about our inability to develop a precise definition of a coastal zone. It is better to view this concept as a means of focusing attention on the emergence of an innovative framework for planning and management to help make wise and sustainable use of resources. In that spirit we may delineate coastal zone in line with recognized administrative boundaries in Bangladesh. To us, the coastal zone represents an area of transition where terrestrial and marine environments interact to form unique environmental conditions. For our purpose, the coastal zone of Bangladesh would include the greater districts of Chittagong, Noakhali, Barisal, Patuakhali and Khulna".³⁰ This chapter deals with physiography, bio-diversity and eco-system of the coastal zone of Bangladesh and its human, social-economic and cultural matrix in two successive sections.

29 'There are some differences of opinion about the definition of the coastal area of Bangladesh. Definitions based on salinity and on tides tend the limit to far inland. On the other hand, definitions based on touching of the sea coast seems to limit it too a very narrow strip. The best solution to this definitional problem is to leave it to the informed judgement of the people of the area who should base it on their interaction with sea in day to day life'. Monowar Hossain, "The Greenhouse Effect And The Coastal Area of Bangladesh : Its People and Economy", in Hasna J Maudud, Haoun Er Ershad, Dr. A Atiq Rahman and Dr. Monowar Hossain (ed.), The Greenhouse Effect And The Coastal Area of Bangladesh, Proceedings of an International Conference held in Dhaka, Bangladesh, 5 March, 1989, p. 60.

30 "Integrated Coastal Zone Management : Concepts And Issues", <http://www.iczmpbangladesh.com/cai.html>, retrieved on 1 August 2002.

Section I

Coastal Environment of Bangladesh – Physiography, Bio-diversity and Eco-system

In general sense, the coastal zone of Bangladesh is identified as a 710 km long stretch of land connected to the Indian Ocean via the Bay of Bengal. The region, therefore, remains under the salinity and tidal effects of the Bay – two important criteria to delineate the region.³¹ To this is added the administrative or management criterion that identifies 16 districts like Barguna, Barisal, Bagherhat, Chandpur, Khulna, Pirajpur, Shariatpur, Barisal, Chittagong, Feni, Laskhmipur, Potuakhali, Bhola, Cox's Bazar, Jhalakhati, Noakhali and Sathkhira in the zone. These districts are again divided into 123 Upazilas (sub-districts) and 139 Unions respectively.³² In addition to the coastal plains, there are a number of small islands (more stable) and chars land masses (less consolidated and hydromorphologically dynamic).³³ These areas are subject to strong wind and tidal interactions throughout the year and are inhabited by a large number of people. The area of the entire coastal zone of Bangladesh is 36,000 square kilometers about 25% of the country's total area (147,570 square kilometers), and most of this land mass lies within a few meters of average sea level.³⁴

31 Dr. Monowar Hossain, *op.cit.*, p. 60

32 "Integrated Coastal Zone Management", *op. cit.*, p. 1.

33 *Ibid.*

34 Humayun Kabir, Shamsur Rahman and Habibur Rahman, "State of the Art on Coastal Zone Management Capacity in Bangladesh", Paper presented at the Workshop on 'Integrated Coastal Zone Management in the Bay of Bengal : National Capacity Building for Bangladesh', jointly organized by Bangladesh Institute of International and Strategic Studies (BISS), Dhaka, and the Oceans Institute of Canada (OIC), Canada, in Dhaka, 20-21 January, 1997, p. 1.

A very distinguishing characteristic of the coastal zone of Bangladesh is its unique location in a dynamic delta of the three mighty Himalayan rivers, namely, the Ganges, Brahmaputra and Meghna (GBM) on the one hand, and the vortex of funnel shaped Bay of Bengal on the other.³⁵ It is the largest delta in the world, and is still under a process of active formation with vigorous dynamism.³⁶ The hydrogeomorphology of the area is very active, dynamic and complex in nature influenced by certain factors like (i) a vast network of rivers; (ii) an enormous discharge of river water heavily laden with sediments, both suspended and bed load; (iii) a large number of islands in between the channels; (iv) the Swatch of No Ground (a submarine canyon) running NE-SW partially across the continental shelf about 24 km south of the Bangladesh coast; (v) a funnel shaped and shallow northern Bay of Bengal to the north of which the area of Bangladesh is located; (vi) strong tidal and wind actions and (vii) tropical cyclones and their associated storm surges.³⁷ For the purpose of management, it is important to take into consideration three distinct regions of the

35 *Ibid.*

36 The geological history of Bangladesh comprises repeated deposition by marine, near-shore, coastal, tidal, fluvial processes. Bangladesh is gifted with the largest delta, largest mangrove forest, deepest sedimentary basin and the largest deep sea fan in the world. For details see, Jamal Anwar, "Geology of Coastal Area of Bangladesh and Recommendations for Resource Development and Management", in Hasan J. Moudud, Haroun Er Rashid, Dr. Atiq Rahman (ed.), 'National Workshop on Coastal Area Development and Management (Part II), Coastal Area Resource Development and Management Association, 1990, pp. 36-66. Also see, Md. Delwar Hossain Sikdar, "Hydrodynamic Characteristics of the Coastal Areas of Bangladesh", in 'Proceedings of the International Seminar on Quaternary Development and Coastal Hydrodynamics of the Ganges Delta in Bangladesh', Geological Survey of Bangladesh, June 2001, pp. 69-85.

37 A. Atiq Rahman, "Bangladesh Coastal Environment and Management" in Hasna J Moudud, Haroun Er Rashid and Dr. Atiq Rahman (ed.), 'National Workshop on Coastal Area Resource Development and Management', op.cit., pp. 1-22.

coastal zone with varying physiographic and hydrographic characteristics. The difference and the variability in such characteristics has greatly influenced the mode of human settlement, occupation and development of infra-structures and institutions in the region. Based on geomorphologic conditions and hydrological features, Bangladesh is divided into two distinct regions – the mainland and the coastal region. The latter consists of three distinct regions, i.e., the eastern, central and western (see map).

The eastern coastline of Bangladesh from the Big Feni River to Badar Mokam (southern tip of the mainland) along Chittagong is classified as a 'Pacific type' coast running parallel to young mountain ranges, and is non-deltaic.³⁸ The coast is a settled, regular and unbroken one, and is protected along the sea by mud flats and submerged sands. The Cox's Bazar sand beach about 145 KM long is part of this coastline. The smaller rivers of the eastern region like Karnaphuli, Sangu, Matamuhuri and Naf contribute to the active nature of the area.³⁹ The central region runs from Tetulia River to the Big Feni River estuary including the mouth of the Meghna river. The region is characterized by heavy sediment input, formation of char (new lands) and bank erosion.⁴⁰ The region is more dynamic and most of the accretion and erosion occur here. Much of the dynamic nature of this region is due to the fact that the three major rivers, the Ganges, Brahmaputra and Meghna, have joined to form an estuary in the area. The western region, termed as Atlantic type, covers the area from the Tetulia river to the international border located in the Hariabhanga river.⁴¹ The region is characterized by many criss-crossing distributaries,

38 "Integrated Coastal Zone Management : Concepts and Issues", *op. cit.*, p. 2.

39 *Ibid.*

40 *Ibid.*, p. 3.

41 *Ibid.*

relatively stable land mass, covered by the largest mangrove forest in the world, the Sundarban. Accretion does not occur much in this region, being mostly concentrated at a few points.⁴² The sediments carried by the rivers of the region flow almost directly south to the Swatch of No Ground, which exerts a great influence on tidal characteristics, sediment movement and deposition, and other hydrodynamic and morphological phenomena.⁴³ In general, each of the three zones has one dominant, or controlling factor. In the west, mangroves forests dominate the coastal fringe. Mangroves also control the interaction of inland non-mangrove areas with the sea. In the central zone, the sediment-rich freshwater flows and their interaction with tides are important factors. In the east, wave energy dominates the open-ocean coast, although mangroves are also important within sheltered estuaries.⁴⁴

Land and water are the two main sub-systems of the coastal ecosystem that comprises of the GBM estuarine system, submarine

42 *Ibid.*

43 The funnel shaped apex of the Bay of Bengal in this region is relatively shallow and the rivers and canals emptying into the Bay change their courses rapidly. The general flow of water in this part of the bay is westward, heading towards the Swatch of No Ground. As a result, the inland in this region are subject mostly to erosion on their eastern sides and sedimentation on their western sides. Over the years, this effect has resulted in the appearance of the larger islands in this area (Hatiya, Manpura, Shabazur etc.), seeming to 'bead' westward. The general circulation pattern is different in the north-eastern part of the bay, however, water in the Hatiya and Sandwip channels flows directly south-east during outgoing tides. As a result, the erosion/sedimentation pattern for the islands in this area is different. In this area, erosion occurs on the northern side of the islands, while sediments are deposited along their southern edge. Sites of considerable activity include the northern and southern tips of Hatiya and Sandwip islands. Much of the dynamic nature of this region is due to the fact that the three mighty rivers, the Ganges, Brahmaputra and Meghna have joined to form this estuary.

44 Humayun, Kabir, Shamsur Rahman and Habibur Rahman, *op.cit.*, p. 4.

canyon, mangroves, marshes and wetlands, coral reefs, islands and beaches.⁴⁵ Despite huge exploitation and environmental degradation, the coastal zone of the country is still rich in biodiversity supporting as many as 490 species of fish, 66 species of corals, 96 species of coral reefs fishes, 44 species of shrimps, 16 species of crabs, 7 species of lobsters, 361 species of molluscs, 18 species of turtles and tortoises, 40 species of snakes, 10 species of amphibians, 11 species of lizard, 14 species of aquatic mammals, 46 species of terrestrial mammals and more than 315 species of birds. The total number of plant species in the Sundarbans mangroves is 219 with 65 mangrove species.⁴⁶

Another characteristic of the coastal environment of Bangladesh is its recurring vulnerability to a number of natural calamities. It may be mentioned here that the Bangladesh coast is the most hazardous coast in the world in terms of the number of people who suffer from various types of environmental hazards every year.⁴⁷ The human suffering is more intense because of population density. The coastal cyclone surges are the most dangerous hazards followed by tornadoes and tidal bores. The massive loss of life from cyclones is due to the large number of coastal people living in poverty within poorly constructed houses, the inadequate number of cyclone shelters, the poor cyclone forecasting and warning systems, and the extremely low-lying land

45 *Ibid.*, p. 2.

46 Dipak Kamal, "Bio-diversity Conservation in the Coastal Zone of Bangladesh", Paper submitted in partial fulfillment of the requirements for the Degree of Master of Marine Management at Dalhousie University, Halifax, Nova Scotia, Canada, 1999, p. 19.

47 Md. Khaliqzaman, "Environmental Hazards in the Coastal Areas of Bangladesh : Ecologic Approach (Summary)", Department of Geology, University of Delaware, USA. Paper presented at the 3rd International Conference on 'Natural And Man Made Coastal Hazards', held in 15-20 August, 1988, Ensenda, Beja, California, Mexico, pp. 1-6.

of the coastal zone.⁴⁸ Flooding has as well become a common annual hazard in the coastal region in recent years, in particular, during the rainy season. This is explained by a number of natural causes that bring changes in the hydrological features of the Ganges, Brahmaputra and Meghna. The upstream diversion of the Ganges water (due to the construction of Farakka barrage by India) and consequent reduction of sediment influx to the coastal areas has triggered many other secondary environmental hazards, i.e., shoreline erosion, submergence of coastal areas (especially the western parts of the delta which are drained by the Ganges and its distributaries), salinity intrusion, erosion of the river banks of other rivers (such as the Brahmaputra, Meghna and Tista) due to disequilibrium in the hydrodynamic system, interruption of the navigation system in the coastal areas, draw-down in the groundwater levels, and many others. Some of these hazards are

48 When the annual cyclones roar, in hundreds and sometimes thousands of people are swept away. Counter-clockwise cyclonic surges are created offshore due to low atmospheric pressure which pushes a wall of water with a height of up to 10m and a wind velocity of about 150-200 km/hour to the land causing both death and property damage. The great cyclone of 1970 killed half a million people and left another million homeless. Since 1963, 600,000 people have been killed in Bangladesh by cyclonic surges. The most frequent surges return every 2-10 years with a surge height of 2-10m and wind velocity of 50-200 km/hour. A total of 145 surges struck the coast of Bangladesh, Myanmar and India during the period from 1977-1987, giving an average rate of 1.3 a year. Tornadoes are another type of coastal hazard. They are capable of causing both casualties of human lives and extensive property damage. More tornadoic events occur in Bangladesh than elsewhere in the Indian subcontinent. During the period of 1877-1987, a total of 19 severe tornadoes were reported in Bangladesh. Estimates of wind speed within the tornadoes have ranged up to 150-200 m/sec. One tornado in 1963 reportedly scoured the ground and deported scraps of metal 50 km from the source. Cited in *Ibid.*, p. 1.

caused by a combination of natural processes and human interference with nature.⁴⁹

The coastal zone of Bangladesh has virtually turned itself into a safe heaven for receiving pollutants from different sources. All the great rivers with their tributaries that empty down in to the Bay of Bengal have turned the coastal zone as a great dumping ground and recipient of pollution from different sources. While industrialization in the country is still at the emerging level, problems of industrial pollution are quite prominent. Nearly 144 industries in eight industrial zones of Chittagong, situated on the bank of the Karnaphuli river or on the coast, discharge their untreated toxic wastes directly into the river or the bay.⁵⁰ Among the polluting industries, namely tanneries, textile, cotton mills, oil refinery have no existing or planned treatment facility.⁵¹ The effluent generated daily from these industries is huge in quantity and contains both degradable and persistent organic and inorganic wastes and toxic metallic compounds and chemicals.⁵² Khulna is

49 There are about 300 large rivers, creeks and channels in Bangladesh forming a network together with the three major rivers, the Ganges, Brahmaputra and Meghna. The dimensions of these rivers and their drainage basins are disproportionately large compared to the small area of Bangladesh. Seasonal variation in precipitation, and in the intensity and amount of discharge cause the flood flow in Bangladesh. See for details in *Ibid.*, p. 2.

50 "Integrated Coastal Zone Management : Concepts and Issues", *op.cit.*, p. 7. Coastal zones are the "sink for the country; they receive and concentrate pollutants and other negative consequences of development activities taking place in the hinterlands. In particular, the flow of rivers has often been severely modified for irrigation purposes, and they carry to the coastal areas the pollutants coming from inland agricultural and industrial activities. Humayun Kabir, Shamsur Rahman and Habibur Rahman, *op.cit.*, p. 14.

51 *Ibid.*

52 See for details, Yousuf Mehedi, "Controlling Pollution in the Coastal And Marine Zone of Bangladesh : Developing a Management Approach", Paper submitted in partial fulfillment of the requirements for the degree of Master

another fast-growing industrial centre in the coastal region and faces similar problem like Chittagong region. Moreover, numerous river craft and launches ply along waterways and discharge waste oil, spillage and bilge washing. Spillage of crude oil and its derivatives, discharge of ballast water and water used for washing the cargo tanks or oil tanks, discharge of untreated bilge water and sewage from ships and disposal of bottom smudges of residual heavy oil and other lubricants and engine oil are causing severe pollution of the water in the coastal reaches and marine environment.⁵³ The populous cities of Chittagong and Khulna have poor sanitary conditions and it is common practice to dump all garbage and waste reserve in the rivers that ultimately spread into the coastal city areas, causing serious health hazards.⁵⁴

The Bangladesh coastal zone is, therefore, a theatre of perpetual interaction between two natural agents, land (terrestrial) and water (aquatic), wherein one notices dynamism in coastal characteristics, a fragile ecosystem and rich bio-diversity. The natural agents should normally maintain a balance between themselves in order to remain in a dynamic equilibrium. This, however, is not the case. The interaction between the two attains a complex dimension due to the intervention by human beings that through exploitation and transfer of resources (deforestation, fishing, building polders, catching and poaching wildlife, navigation, salt making, habitation etc) offset any possible equilibrium between land and water. Hence, the management needs to look at the human factor and its continuous intervention in the coastal zone that disrupt its physiography, ecology, bio-diversity, resource composition, environment etc. The human

of Marine Management at Dalhousie University, Halifax, Nova Scotia, Canada, August 2001. pp. 1-145.

53 "Integrated Coastal Zone Management : Concepts and Issues", *op.cit.*, p. 7.

54 *Ibid.*

factor analysis may, thus, seek an inquiry into such questions : who are these people? what are their activities? how do such activities disturb the coastal ecology, bio-diversity, resource and environment.

Section II

Human, Socio-Economic and Cultural Matrix of the Coastal Zone of Bangladesh

An attempt to draw out the exact social, economic and cultural profile of the coastal population of Bangladesh is likely to be colored by few prejudices, biases and uncomplimentary notions of the general masses vis-à-vis the region, on the one hand, and by few positive descriptions of the area, on the other. Given the fact that the region, since long, remained neglected in the development schemes of successive governments (right up from the colonial period), it is sometimes viewed as nothing more than a stretch of southern swamps infested with tropical diseases like malaria and cholera, and inhabited by creatures like poisonous snakes, monkeys, tigers, elephants etc. In the belief of many, the population inhabiting the region consists of dacoits living in the jungles and sea pirates from within and outside the region.⁵⁵ On the

55 While it is true that the deep forests in the south nourish different types of wild animals, and that the isolation of the area from the mainland kept the inhabitants of the region deprived of education, health, and other services for long, it is history that perhaps goes further to blacken the image of the area. In the past, the open oceanic frontier in the south gave opportunity to various outsiders to raid the zone for crops and other resources. Known as sea pirates, they took shelter in deep forests, and turned many of the areas as their permanent stations from where to make further raids in the mainland for wealth and property. Also, the scramble for grabbing the chars (newly emerged islands) produced a class of people known for their in-born fighting habits and violence. Till to date, in the country's lullabies, the horrifying acts of such persons find their expression.

positive side, the region earns its praise for its glittering shorelines, endowment of resources like forests, honey, fishes, and finally as an outlet for trade and commerce with the outside world.

For management of the area, knowledge and information are, therefore, greatly needed to balance the above two contradictory and opposing views regarding the region. This, till to date, remains considerably inadequate for a number of reasons like (i) the peculiar physiography of the region; (ii) the failure to bring the zone under modern means of communication; (iii) the emphasis on formal economic activities bypassing the informal ones that support the livelihood of many coastal people; (iv) benign indifference of the center to the welfare of the coastal people; (v) the tendency to take advantage of the ignorance, simplicity and docility of the coastal masses by the unscrupulous persons from outside. The result being that information on the socio-economic situation in the coastal zone is not only scarce but as well fragmented, reflecting very little about the economic, social and cultural level of the coastal population.⁵⁶ It is only in recent times that the interest in the coastal zone has been generated by certain factors. *First*, a growing tendency of inland people to migrate to the region in search of land, shelter and food has drawn national attention, and this despite the region's vulnerability to various natural disasters as mentioned earlier. *Second*, the region bears prospects for income generation from few of its untapped resources, in particular, minerals and offshore oil.⁵⁷ The focus on

56 Dipak Kamal, *op.cit.*, p 45.

57 Coastal Bangladesh is rich with natural resources, including both renewable and non-renewable resources. It may be mentioned that in recent years, coastal areas received international attention due to high potential for the exploration of inshore and offshore natural gas. In the South Eastern Sangu valley, a large natural gas field was discovered and subsequently put into commercial operation in 1998. Offshore drilling is also underway to explore untapped fossil fuel resources found in the coast. This has opened up new

the region is, therefore, from the quarters like the government, the private sector and the outside multinational companies. *Thirdly*, the rapid population growth in the coastal zone is making it a densely populated region. As per 1991 census, the size of the population of the coastal zone is 28 million which by 1998 went up to 32 million and it is expected to increase to 40-50 million by 2050. The average population density in the coastal districts is 959/KM² compared to the national average of 741/KM² people.⁵⁸ In addition to the permanent population, there are significant numbers of seasonal migrants to the coast, particularly to the chars (islands) of the central coast.⁵⁹ The result being an increasing apprehension about over-exploitation of the existing resources by the people with serious negative consequences for the ecology, bio-diversity and resource endowments of the zone.

At the outset, the human factor in any coastal management plan must take due note of the nature of coastal population, in

possibilities for installation of gas based power plants in the Bhola Island and in Bagherhat (coastal district), which would promote export promotion zones, and rapid industrialization. Natural gas is well recognized to be cleaner than other green house gas. Besides natural gas, commercially important minerals such as monozite, limonite, rutile, zircon and ceseum have been found in the sandy beaches along Cox's Bazar. Bangladesh has signed an agreement with International Titanium Resources (ITR), an Australian Mineral Sand Mines Company under which ITR will be allowed to explore commercially viable amount of mineral sand deposits in Cox's Bazar. Coastal Zone http://www.iczmpbangladesh.com/coastal_zone.html, retrieved on 1 August 2002, p. 4.

58 *Ibid.*, p. 2.

59 Bangladesh's offshore chars (flat silt islands just a meter above sea level) are home to tens of thousands of people, many of whom have migrated there after losing houses and assets to river erosion elsewhere in the country. Life is extremely vulnerable to recurring disasters in the form of cyclones, storms and tidal surges. This physical vulnerability of the people is compounded by social and economic systems that leave most inhabitants landless and debt ridden. See 'Report by Phillip Howel' in ODI HPN Report, 6 April 2001.

particular, their ethnicity, language and culture. The ethnic element in the population composition of the coastal zone can not be viewed in isolation from the one as discernible in rest of the country's population. As a melting pot of races, Bangladesh absorbed various groups of people like pro-Austroloids (called Veddas), Mediterranean Caucasoids (Aryans), Armenoids (Indo-European stock), Arabo-Turkish, and Mongoloid at different points of history.⁶⁰ Almost all these groups entered the coastal zone of the country for different physical, economic and social reasons, and excepting the people of Mongoloid origin that constitute nearly 12 different groups of tribal people (totaling about 0.2 million)⁶¹ inhabiting the entire coastal area, there is a marked homogeneity in the rest of the population with respect to their respective physical traits, social customs, culture, food habit etc. Most tribal people are of Sino-Tibetan descent, and has distinctive Mongoloid features.⁶² They differ in their social organization, marriage customs, birth and death rites, food and other social customs from the non-tribal people, the latter being mostly Muslims with a little section professing Hinduism. Most of the tribal people are the followers of Buddhism, Hinduism or animism. Despite these differences, all coastal people, from a larger national perspective, are Bangladeshis who speak Bengali –the official language of the country. The tribal people, however, communicate among themselves in their local

60 For details on Bangladesh's history, society and culture see, Sirajul Islam (ed.), History of Bangladesh 1704-1971 : Social and Cultural History, Asiatic Society of Bangladesh, Dhaka, 1992, pp. 1-820. In terms of ethnic and linguistic homogeneity, Bangladesh ranks 129th in the world with 98% homogeneity (on an ascending scale in which North and South Korea are ranked 135th with 100% homogeneity and Tanzania is ranked 1st with 7% homogeneity. Cited from, George Thomas Kurian, Encyclopedia of the Third World (Revised Edition), Volume 1, Manshell Publishing Limited, London, 1982, p. 127.

61 Coastal Zone, op. cit., p. 2.

62 The Tribals are racially distinct from the Bengalees and their features and languages are closer to the Burmese.

dialects. Thus, to many, the coastal population in Bangladesh is a homogeneous entity. This, however, does not give the State authority the *carte blanche* to bengalicize the tribal segment of the coastal population by disrupting their traditional mode of life. Such a strategy would be a reflection of Bengali chauvinism and ethnocentrism that in the past led to a bloody conflict with the tribal people in Chittagong (eastern region).⁶³ More important, all of them have an oceanic culture, explained largely by their age-old dependence on the oceans for sustenance. The result being that the coastal people, in general, are more daring and enterprising people than the rest of the population of Bangladesh. Despite deep-rooted religious belief, fatalism cannot captivate them in their daily struggle for livelihood.⁶⁴ Thus, fishermen, despite warning signals against bad weather, do not hesitate to go in to the oceans for fishing. It should be mentioned that the population mosaic of the coastal zone of Bangladesh might attain a new dimension in the future if current attempts to trace out *indigenous communities* in the area meet with success. Such a prognosis is made in view of

63 It may be mentioned that Bangladesh at independence (1971) inherited the problem in the Chittagong Hill Tracts. The problem is one of a separatist movement launched by the tribal people against the Bangladesh authority. The resentment of the people was against the assimilationist policies of the successive Bangladesh governments in bringing the tribal people to the main national stream under a so-called 'Bengalization Program of the CHT'. This obviously disturbed not only the cultural and social aspects of the tribal people, but as well created a disturbance in their traditional mode of occupation. Thus, for over 20 years, 10% of the entire country remained bogged down in a bloody insurgency fought by the tribal groups from the CHT who felt themselves severely threatened by the government's construction of a national homogenous identity. See for details, Mohammad Humayun Kabir, 'The Problems of Tribal Separatism and Constitutional Reform in Bangladesh', in Iftekhazaman (ed.), Ethnicity and Constitutional Reform, Regional Centre for Strategic Studies, Manohar, 1998, pp. 10-26.

64 Monowar Hossain, op. cit., p. 61.

the fact that a number of investigations are being carried out by experts in the field on their existence, their resources and vulnerabilities.⁶⁵

The heterogeneity is, however, reflected in the diverse occupation of the coastal population, and this is a factor with significant implications for the future management of the area. The marine and terrestrial environment of the region provide different types of livelihood determined primarily by the resource base of the area that varies between the regions. The population of the area, which is approximately 28 million, is engaged in such economic activities as coastal agriculture, fishing, forestry (mangrove forest extraction), shrimp culture, salt manufacturing, sand mining, tourism and port and harbour related activities.⁶⁶ Given the fertile nature of the soil (due to deltaic formation) comprising the entire coastal zone, agriculture is the mainstay of the local population as in upland areas. The importance of the sector, however, varies among the three coastal regions. It is not the major sector in the eastern region where it is superseded by industry (32% to 27%). This is due to the location of a number of heavy industries in the Chittagong belt i.e., industries related to Chittagong port, steel mills, fertilizer factories, oil refineries etc.⁶⁷ Similarly, the significance of agriculture in the western zone remains overshadowed by forestry that accounts for 45% of the productive forest of the country accounting for about half of the

65 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op.cit.*, p. 7.

66 The special skills of the coastal people include: i. boat making in all three regions; (ii) marine fishery in all three regions but mostly in the eastern region followed by Western region; (iii) sea-faring in all three regions but mostly in the central and eastern regions; (iv) honey collection in the forest, entirely in the Sundarbans (Western region), and (v) salt-making entirely in the eastern region, was once dominant in the central region.

67 'Integrated Coastal Zone Management : Concepts and Issues', *op. cit.*, p. 7.

forest related revenue.⁶⁸ Industry equally plays an important role in the western region where the industrial zones of Khulna (Rupsa Industrial Zone, Khalispur Industrial Zone, Shiromony Industrial Zone) are engaged in the production of various industrial products.⁶⁹ It is in the central region that agriculture as an occupation finds its predominance among the coastal people. The constraints on the way of coastal agriculture are, in many ways, similar to the ones as observed in case of the same elsewhere in the country like variability in the weather, inadequate supplies of irrigation water, primitive methods of cultivation, unavailability of improved seed varieties etc. However, certain problems are very specific in the case of coastal agriculture. Land being a scarce commodity in the coastal zone for agriculture, the national policy has always aimed at its fuller utilization.⁷⁰ The extent of Khas land (government owned lands) is decreasing year by year as they are now being transferred to private ownership. As few new chars (islands) are formed, poor farmers rush to settle on them despite their vulnerability to storms and flooding. Regular or periodic inundation and saline water intrusion are the usual problems for agriculture activities in the coastal zone coupled with damage to crops by episodic calamities.

Next to agriculture, marine fishery is an important occupation of the coastal people. The sector plays a significant role in the economy by providing 6% of GDP, 9.30% of export earnings, 12% of employment and 80% of animal protein consumption in the country.⁷¹ It is important to note that out of 2 million full time and 10 million seasonal fishermen in the country, 5.66 million were engaged in marine fishery in 1994. Despite the fact that marine

68 Dipak Kamal, *op. cit.*, p. 34.

69 'Integrated Coastal Zone Management : Concepts and Issues', *op. cit.*,

70 Dipak Kamal, *op. cit.*, p. 35

71 *Ibid.*, p. 31.

fishing community contributes more than 5% of the nation's total households, their socio-economic status remains at the lower rung of the society for reasons like poverty, lack of education, lack of alternative sources of income etc. A survey on the socio-economic status of fisher folk reports that despite improvement in fishing crafts and gears, the real income of marine fishery is declining relative to 20 years ago due to lower catch and low price of their harvest.⁷² Like in case of the farmers engaged in agriculture, the position of the coastal fishers has, too, been threatened by the outsiders. Being engaged mainly in inshore capture in an artisanal and traditional manner of fishing, they cannot compete with the new entries that use modern motorized and mechanized boats and trawlers going upto 100 m depth in the off-shore area. The average income of marine fisheries is not higher than those of landless laborers or other physical working labor force. As a result, there is a tendency among them to leave the present occupation, although alternative means of livelihood are almost absent in the region. Socially, the coastal fishers are considered to be of lower caste in the community, in particular, if they belong to the Hindu community. This leads them to build their habitat in remote areas excessively vulnerable to cyclones and tidal bores. In their daily fishing activities, there is no guarantee for the safety of their life against any natural disorder in the ocean.

Forestry is another important economic activity in the coastal zone of Bangladesh that houses several mangrove ecosystems.⁷³

⁷² *Ibid.*, p. 38

⁷³ The coastal region houses several mangrove ecosystems, including the Sundarbans. These mangrove forests are transitional zones between fresh and marine waters, and are rich in marine and terrestrial flora and fauna. While sundari (*heretiera fomes*), gewa (*exoecaria agallocha*) and goran (*ceriopsdecandra*) are the most abundant species found in the forests, many other flora species exist in these areas. Dicotyledonous trees species are represented by 22 families and 310 genus, and Rhizophoraceae is

The Sundarbans, Chakaria and Teknaf constitute the coastal mangrove belt with Sundarbans being the largest natural single area of mangrove forests in the world, covering 587,000 ha.⁷⁴ It accounts for 45% of the productive forest of the country and about one half of forest related revenue. Chakaria, the second tract of natural mangroves (8,540 ha) in the south-eastern part of the country has been severely degraded recently due to expansion of shrimp farming.⁷⁵ Teknaf, the last tract of about 100, 000 ha of planted mangroves, is the least touched among all spread over the entire coast and off-shore islands in eastern region.⁷⁶ Mangrove

represented by all the 4 known genera and at least 6 species. There are also 12 species of shrubs, 11 species of climbers, 13 species of orchids (epiphytic parasites) and 7 species of ferns in the Sundarbans. In addition, the forest support a total of 425 species of wildlife including mammals (49 species), birds (315 species), reptiles (53 species) and amphibia (8 species). Among fish resources, the water bodies within the forest ecosystems provide 53 species of pelagic fish, 124 species of demersal fish, 24 species of shrimp, 3 species of lobster, 3 species of turtles, 10 species of sea snakes and 7 other snake species. The forests also provide basic ecological support systems as nursery for many species of marine invertebrates including the fresh water shrimps and brackish water prawn that are exported. The Sundarbans has been declared a World Heritage Site. It is known as the single largest stretch of productive mangrove forest in the world, and is inhabited by one of the most elegant creatures of nature, the Royal Bengal Tiger (*Panthera tigris*). Cited in Coastal Zone, op. cit., p. 5

74 Ibid.

75 As shrimp farming becomes increasingly lucrative, mangroves are cleared to accommodate it. The case of Chokoria mangrove which has now practically become non-existent is but one case of destruction of mangrove forest area. Besides shrimp culture, mangroves as critical marine habits are vulnerable to human interference like empoldering of land for agriculture, extraction of groundwater for irrigation, construction of dams in the watershed and overexploitation of mangrove resources etc. See for details, Zinatunnessa R M M Khuda, 'Degradation of the Coastal Environment' in Environmental Degradation : Challenges of the 21st Century, Environmental Survey and Research Unit, 2001, pp. 161-174.

76 Coastal Zone, op. cit., p. 7.

forests are critical to the people and economy of Bangladesh. They supply fuel wood for domestic and industrial use, timber for industry and a range of other products. They contain a high number of plants and animals (e.g., crustaceans, molluscs, fishes and birds) which contribute to a significant marine bio-diversity in the region. The presence of forests along the coast also acts as a buffer against storm and erosion. It is the various use of mangrove forests products and the plant and animal material associated with them that lead to pressure concerning their utilization. The multiple use of mangroves over the past years led to conflicts between government ministries and between the economic sectors involved. The extraction and benefits of forest resources remain within the exclusive preserve of the government with the local community being its indirect beneficiary only.

For the management authority, mangrove ecosystem deterioration, caused by man's intensive activities aimed at maximizing short-term gains, and the negative economic consequences on the coastal communities in both short and long term, is causing increased concern. In this respect, it is the Sundarban that draws the maximum management attention for its preservation. It is the most commercially exploited forest belt in the coastal zone providing a wide range of forest products such as sawn timber, fuel wood, wood for making pulp, matches, hard board, boarding board and thatching material etc. It is only in recent times that logging has been banned in the area by the country's government. The major animal products obtained from the Sundarbans mangroves are, besides fish, honey, bees-wax, mollusc, shells. The richness of the bio-diversity of the Sundarbans is also proven by the availability of 3,033 tons of fish, 375 tons of mud crab, 3,600 tons of oyster shells and 35 tons of gastropod shells which are obtained from the forest every year.⁷⁷ In addition,

⁷⁷ *Ibid.*, p. 5

about 1,500 million tiger pawn fries are collected per year from the forest and its adjacent areas.⁷⁸ The forest contains many endangered species of global importance – the Sundarbans has been declared a World Heritage Site. The forest is inhabited by one of the most elegant creatures of nature – the Royal Bengal Tiger (*panthera tigris*).⁷⁹ The other low and wetland forest types such as nypa palm, hardwood hammocks, freshwater tidal swamps, and so forth, need equal attention and management.

Coastal aquaculture is a recent entry into the area, and is not the direct occupation of the local people. In this respect, it is shrimp culture (a capital rather than labor intensive enterprise) which is gradually gaining importance for its increasing foreign exchange earning while at the same time causing the maximum damage to traditional coastal agriculture. The recent practice of shrimp culture inside the embankments, despite its adverse environmental and ecological effects and serious social problems, has been boosting the national economy due to higher profit and great international demand. This is exemplified by the expansion of shrimp culture from 51,835 ha in 1982-83 to 144,249 ha in 1994-95 (178% increase).⁸⁰ The introduction of shrimp culture has

78 *Ibid.*

79 The UNESCO declared the Sundarbans as its 798th heritage site on December 6, 1997. The Sundarbans world heritage site includes 1,39,700 hectares area of the Sundarbans East, South and West sanctuaries. The heritage site area may be extended in future. The Sundarbans South sanctuary consists of the compartments 43 and 44, the East sanctuary consists of the compartments 4, 5, 6 and part of 7 and the West sanctuary consists of the compartments 53, 54, 55 and part of 49 of the forest. The Sundarbans is divided into 55 compartments. 'The Sundarbans : A Dismal Picture' in *Ecofile* (A Shamunnay publication supported by UNDP), Volume iv, No. 4, January-March 2001, p. 10.

80 Dipak Kamal, *op. cit.*, p. 32. The adverse impact of shrimp culture on the natural environment is obvious. Due to water logging with saline water over a long period, salinity of the soil increases. Initial findings of a study show

upset the traditional balance of social forces as the local farmers are losing land under a lease system. The lease holders are usually the rich and influential persons from outside the coastal zone. The high price of land together with the new lease system has given rise to high incidence of land disputes and violence. The farmers, thus, have lost their traditional command over the principal private resource, land, and a new kind of enclave economy seems to have developed in the coastal belt marginalizing the poor landholders in the process. More important, there is now threat to personal security and traditional safety net for the poor due to violence perpetrated by few powerful persons. Aside the land conflict, the harvesting of shrimp causes salinity problem for agriculture in the cultivable lands within the shrimp farming zone. Major shrimp culture activities are centered around Sathkhira, Khulan, Bagherhat districts in the Western zone and Chokoria, Cox's Bazar district in the eastern zone. While it is true that shrimp farming has generated about 2.1 million new jobs in the country, the ultimate beneficiaries of the huge revenue are not the coastal people. A large number of women and children that actively participate in the primary operations of shrimps (sorting, beheading, peeling etc.) are subject to flagrant exploitation by the owners which are mostly the non-coastal people. The former have virtually no other means of income or employment.⁸¹ It may be mentioned that shrimp culture

this to be the case. The monsoon rains flush out some of the salts but it is taking its toll on rice production, which shows a decline in recent years. Shrimp farmers are influential rich. They sometimes forcibly take away land from small farmers for shrimp cultivation. They breach the polders built to protect croplands from saline water intrusion thus rendering these unsuitable for crop cultivation. They also hold on to the land leased out to them far beyond the stipulated time they are supposed to hold these, so that the consecutive rice crop cannot be planted in time. These activities of the shrimp farmers have given rise to social conflict between the crop and the shrimp farmers. In many instances, the crop farmers have to sell their land and move out. Cited in Zinatunnessa R M M Khuda, *op. cit.*, p. 167.

81 Dipak Kamal, *op.cit.*, p. 53.

is now a high investment endeavor undertaken by the so-called outsiders who do not always care for the interests of the local people. Thus, contrary to popular belief, the economic return out of the shrimp cultivation hardly benefit the local people and its economy in a substantial way.

The production of unrefined salt by evaporation method is another traditional occupation of the coastal people, and is primarily concentrated in the Cox's Bazar district in eastern zone. At present, shrimp farms have encroached upon these areas because of nearness to sea water and flat topography at the cost of traditional salt producers.⁸² Livestock is another occupation of the coastal people. In particular, cows and goats are important private resources which play a significant role in overcoming vulnerabilities of the marginal households. Shrimp culture has been causing some problems in raising these animals. It has deprived the local people of the right of access to common grazing land which has now been leased out to shrimp farmers coming from outside. The latter do not allow cattle to pass over internal dykes built for shrimp farming. As a result, the local people have been forced to keep their cattle in houses of relatives in neighboring villages, the result being increase in the cost of rearing of animals, loss in quality of animal and yield, loss of income etc.⁸³

82 'The shrimp farms have also encroached upon another traditional commercial usage of the coastal land – particularly in the eastern coast, that is the salt fields. Salt production by evaporation method was being practiced by small crop farmers along the coast of Chittagong and Cox's Bazar during the dry months (December to April) and rice cultivation during the rest of the year. Now shrimp farms have invaded these areas because of nearness to sea water and flat topography at the cost of traditional salt producers'. K Maudood Elahi, Subash C Das and Sabiha Sultana, *op. cit.*, p. 359.

83 It may be mentioned that ownership of poultry birds is another very important source of income for the coastal households. 'For the poor, it is not only income, but the stability of income throughout the year which is more crucial. It has become very difficult to raise ducks in the shrimp

Coastal water resources not only support agriculture and industrial activities but also provide extensively used navigational routes. The two important sea ports in the country, Chittagong and Mongla support most of the international trade of the country, and might provide a good headway for Nepal and Bhutan's international trade in the future if Bangladesh is connected to the proposed Trans-Asian road network.⁸⁴ Besides the above normal economic activities, the coastal zone of Bangladesh also bears prospects for more vigorous economic activities in the fields like minerals, offshore oil, tourism etc. The zone, despite being a disaster prone one, is rich in natural mineral resources – both renewable and non-renewable. The known mineral resources of the coastal zone are off-shore natural gas, oil, in-shore radio-active carbon and bio-mass fuels. In addition, commercially important minerals like monazite, ilmenite, rutile, zircon and cesium have

farming areas as strong restrictions have been imposed by shrimp farmers on their movements, so that they cannot fish from the farms. Raising of ducks has thus been drastically reduced. Raising of chicken is not easy either. The mortality of poultry is also high in areas where salinity is very high'. Atiur Rahman, *op. cit.*, p. 513.

- 84 Coastal Zone, *op. cit.*, p. 3. 'Inland navigation has always been a principal means of transport in Bangladesh. In the coastal areas, especially in the regions of Khulna and Barisal, it is still the major means of movement and transportation. During the last 15-20 years, considerable and rapid deterioration has taken place in the river system and navigation routes especially in the coastal areas through massive siltation, channel instability and human interference. The main causes of the rapidly worsening situation are : the instability of rivers and erosion of river banks due to high rate of rise and fall of the water level, siltation of the channel due to increased volume of sediment supply as well as reduction of the flood spillage area due to the construction of polders and the closure of small channels for flood control, resulting in the blockage of country boat routes'. 'Integrated Coastal Zone Management : Issues and Concepts', *op. cit.*, pp 6-7.

been found in the sandy beaches along Cox's Bazar.⁸⁵ Even though the country has excellent locations with beautiful beaches, serene islands and lakes, tourism in Bangladesh has never fulfilled its potential. There are some facilities in Cox's Bazar, Rangamati and Kuakata. However, existing infrastructure for tourism is less than adequate to support even domestic demands. It is expected that new infrastructures will be built in the near future to promote international tourism..⁸⁶ All such activities projected for future would involve multiple use of local resources with high economic value and income generation, and hence competition and conflict among their users.

Despite their economic preoccupation in diverse forms and means, the coastal population of Bangladesh continues to remain the victim of uneven development in the region. The most striking feature is total absence of land based communication system in the central and western regions, presumably on account of an extensive river network and instability in land formation.⁸⁷ Good housing is relatively rare. Electricity has reached comparatively, slightly higher proportions of villages in the eastern and western regions, but is virtually non-existent in the central region. The situation in respect of educational institutions is relatively better.⁸⁸ The economic and health facilities are roughly comparable in central and eastern regions while being significantly poorer in the western region. There is the scarcity of pure drinking water in the coastal zone.⁸⁹ Rural water supply in the area is mostly from two

85 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op. cit.*, p. p. 4.

86 'Coastal Zone', *op. cit.*, p. 4.

87 . Monowar Hossain, *op. cit.*, p. 61.

88 *Ibid.*

89 'In the coast of Bangladesh, complex hydrological conditions and adverse water quality make water supply difficult as compared to other parts of the country. The entire belt is crisscrossed by rivers and their tributaries which

sources, i.e., tube wells and ponds and shallow ditches. A small minority of people obtain their water from flowing surface waters such as canals and rivers.

For individual nations, the need to establish a program of ICZM may arise for a number of reasons. Severe depletion of coastal resources, increase in pollution, desire to increase the economic benefits from use of coastal resources, desire to use marine or coastal resources not previously exploited and a host of others may act as powerful triggers for an ICZM.⁹⁰ The preceding discussion pertaining to Bangladesh brings home the point that the country's coastal zone is not only an area of vulnerabilities but as well one of opportunities. The management task would, therefore, be two-fold, i.e., on the one hand, to reduce the vulnerabilities, and reap the opportunities, on the other. The succeeding chapter would bring forth few pertinent management issues with respect to the subject.

are under active tidal influence. In spite of having large number of natural streams, ponds and a good ground water storage, the scarcity of potable water is acute. The river water, in most of the time in the year, is highly turbid and saline. The low saline pond water is used for many domestic purposes, but completely unsuitable for drinking. Unlike other areas of Bangladesh, ground water of acceptable quality is not available in most parts of coastal area at relatively shallow depths for easy withdrawal by conventional hand pump tube wells. The use of easily available waters as source of domestic water supply requires extensive costly treatment which is not a practical proposition for scattered rural population nor affordable in the context of rural economic conditions. Development of an alternative low cost water supply system required to improve the water supply situation in the coastal area of Bangladesh'. See for details, M. Feroz Ahmed, "Coastal Water Supply in Bangladesh", Paper presented at 22nd WEDC Conference, "Reaching the Un-reached : Challenges for the 21st Century", New Delhi, India, 1996.

90 'What Triggers the Need for ICM' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 2.

Chapter III

Threats and Opportunities for the Coastal Community in Bangladesh – Identifying the Key Policy Issues

Coastal zones are extremely important to the functioning and well-being of many nations. They are often the most developed and resource-rich zones of the country involving multiple use processes, associated with high economic value and income generation. Along side these opportunities, the zone is as well a vulnerable one in view of the threat posed to it by certain factors like; (i) natural calamities of oceanic origin; (ii) dumping of various pollutants from multifarious upland and coastal sources; (iii) overuse of coastal resources by human beings causing destruction of its important ecological, bio-diversity resources and critical marine habitats; (iv) constant erosion and accretion in the region, and finally (v) the unforeseen effects of global warming. Still more, it is an arena of perennial conflicts arising out of multiple-use of oceanic resources by various stakeholders. In some cases, the coastal zones are the sites of conflicts of high intensity too, i.e., war.⁹¹

While the degree and intensity of threats and opportunities for the coast vary among and between the nations, ICZM aims to create, in its general approach towards coastal development, circumstances through which the countries are able to cope with the threats as much as possible, and as well realize the zone's development potentialities. In this sense, the starting point for ICZM in any coastal region is the people. The statement finds its rationale on three counts. *Firstly*, it is the coastal people who are the direct victims of all kinds of threats to their region. *Secondly*, since the coastal people depend on the regional resources, they should be provided with all potential opportunities in the region. *Thirdly*, the

91 John R Clark, "An Introduction to Coastal Zone Management – Selected Materials", Volume 1, *op. cit.*, p. 114.

intense pressure on coastal resources exerted by both coastal and non-coastal people with resulting damage to its ecosystems, biodiversity and resource base is now an established fact. As a result, the three pronged objectives of ICZM –conservation, preservation and development – of coastal resources should, at first, take into consideration the needs and imperatives of the coastal community, and deeply analyze the reasons behind their exploitation of the regional resources. The approach would lead to what is called human development implying that men and women, particularly the poor and vulnerable should be at the center of development process. This would enable the creation of an environment in which life is protected, opportunities are guaranteed and the natural systems on which life depends are sustained.

In the context of Bangladesh, one would probably notice the list of threats outweighing the one of opportunities. The human-resource relationships that operate at present in the coastal zones of Bangladesh are characterized by an insecurity that tend towards destabilization of the capabilities, assets and activities that make up the livelihood system of individuals, families, households and the wider community.⁹² Also, the prospect for any tangible benefit from the future generation of wealth in the region remains, for most of the coastal people, a far distant possibility due to its control by the people at the national level. The critical situation of the coastal people is further compounded by their direct expose to all oceanic calamities. Thus, in an integrated management of Bangladesh coastal zone, the management needs to take cognizance of the position of the coastal community vis-à-vis the threats and opportunities in the zone in order to arrive at few policy issues on the subject. An attempt is made in the chapter to deal with these issues.

⁹² 'Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood –Policy Relationship in South Asia, Working Paper 1), *op. cit.* p.

Section I

The Coastal Community vis-à-vis The Threats

Fragmented social structure : As mentioned earlier, the mere presence of few tribal people of Mongoloid origin does not impinge on the social solidarity of the region in so far as they are all in a harmonious relationship with their other counterparts in the region since long. While such bondage is maintained, fragmentation in the coastal society is being caused by the intrusion of outsiders who for economic reasons use the innocent and docile coastal people as pawns in their hands. For possession of accreted lands, acquisition of agricultural land for shrimp culture and grabbing of forest resources, the outside agents resort to a policy that divides the society into two – their supporters or non-supporters. In particular, the introduction of shrimp culture in the coastal zone by the outsiders has led to the creation of a group of local touts (called *Mastans* in Bengali) who are trying to take all possible advantage in the region through unscrupulous means.⁹³ Many of them remain under political patronage, and claim themselves to be a stakeholder in the region's resources by force.

93 It should be noted that shrimp farming is not practiced by local farmers earlier engaged in rice cultivation in the coastal areas. It is a high investment endeavor undertaken by so-called outsiders and once such an investment is made by them in a certain area, the local farmers not only lose their crop lands in the process, but also lose access to many of the common property resources from the forest and water bodies. For the maintenance and protection of the shrimp farms, the entrepreneurs, by and large, prefer to hire laborers of their own choice from outside. This situation often tends to create tension in the local labor market and social relations. See for details, K. Maudood Elahi, Subash C. Das and Sabiha Sultana, *op. cit.*, pp. 353-359. Also see, Atiur Rahman, "The Impact of Shrimp Culture on the Coastal Environment", in Environment and Development in Bangladesh, Volume 1, 1995, pp. 500-524, for the question whether shrimp culture project in Bangladesh has been enhancing or reducing the security of livelihood of the coastal people.

The vulnerability of the coastal population vis-à-vis the outsiders is explained by poverty, illiteracy, debt burden, remote habitat, absence of political participation etc. The threat as felt by the coastal community is in the form of an encroachment upon their traditional means of livelihood and acquisition of wealth from their local resources by force and coercion.

Economic Threat: The threat to the economy of the coastal people is being increasingly felt at certain fronts. *Firstly*, as mentioned above, there is the encroachment upon all traditional modes of livelihood in the coastal zone by the outsiders. In this connection, as indicated earlier, shrimp aquaculture draws one's attention. Overall, the economic profitability of the practice has been taken for granted for the economic development of Bangladesh in general and the coastal area in particular through foreign exchange earnings. But this, as mentioned earlier, has not happened so far. There are indications of resources flight and resources degeneration in the coastal area of the country due to the expansion of shrimp culture with irreversible socio-economic and environmental losses for the region.. Some of these are : (i) survival of the traditional farmers, artisanal fishermen, salt producers, landless and marginal populations under threat; (ii) losses of common property resources, i.e., mangrove forest resources, grazing land/pasture, salt fields, open water capture fishes etc. and (iii) loss of a range of bio-diversity. *Secondly*, there is unjust distribution of wealth earned from the local resources.⁹⁴ The forest resources are exploited solely by the government personnel with little or no benefit for the local community. In this connection, it is important to note that human intervention in the coastal resources emanates from three sources, i.e., the local population, the government and the private sector. Among these groups, the coastal community continues to remain the least

94 K Maudood Elahi, Subash C Das and Sabiha Sultana, *op. cit.*, pp. 360-361.

beneficiary of local resources. *Thirdly*, the resources of the region and the income therefrom seem to remain in status quo with no efforts underway for job creation. The increased pressure on the existing resources is causing a decline in key common property resources such as marine fisheries, mangroves and fish water resources. In the ultimate analysis, the coastal community will remain to be the worst sufferers economically.⁹⁵ *Finally*, the coastal community remains uncertain about any future prospect of income from the exploitation of local resources by government or private agencies.

Widespread Poverty : Poverty continues to affect the coastal community through hunger and malnutrition, ill health, unemployment, lack of access to safe drinking water, low access to education and other public services and resources, exclusion, lack of participation, violence etc. The coastal people, whether farmers, fishers, or salt producers *en masse* face such problems in their daily life. It should be mentioned that the burden of poverty is disproportionately borne by women. Although, poverty occurs in every nook and corner of Bangladesh, its extent and manifestation are particularly severe in the coastal zone for the following reasons: (i) poor level of service provisions and poorly developed infrastructure thereby increasing their isolation from the rest of the

95 'How do women and men who live and work in the coastal zone of Bangladesh make a living? What do they consider their main resources, vulnerabilities, options and constraints? Looking at the future, what do they expect from the government and what are their own plans to improve their livelihoods? The Report on 'The Perceptions of Direct Stakeholders on Coastal Livelihoods (PDSCL) deals with these and related pressing questions. The Report has been published by WARPO (Water Resources Planning Organization) Government of the People's Republic of Bangladesh, Dhaka, September 2002, pp. 1-55.

country;⁹⁶ (ii) changes in land use pattern and poor regulation for land distribution and resettlement; (iii) poor access to technologies; (iv) poorly recognized gender sensitivity; and (v) exploitation by the outsiders, both government and private and (vi) poor resource management and finally (vii) marginalization of the poor. The deplorable economic conditions of the coastal people create an atmosphere of insecurity and uncertainty that can only be remedied through long- term development of the coast.⁹⁷

Absence of Political Organization: As mentioned earlier, the Bangladesh coastal zone is an area of institutional weakness where several government agencies and departments simply work in a fragmented fashion.⁹⁸ The isolation of the area coupled with the above mentioned problems faced by the coastal community has virtually capped the development of administrative systems in the region. The result being a total absence of political participation by the community and hence the absence of local leadership. However, the politicians, during the national election campaign,

96 Women and men describe poverty mainly in economic terms, i.e., few earner to feed many, high dependency rate, living from hand to mouth, dependence on daily labor for survival and so forth. The most severe forms of poverty are those when economic hardship is aggravated by lack of household members, relatives or others who provide the necessary safety net. A few describe poverty as 'the lack of hope for the future'. *Ibid.*, p. 14.

97 Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia), *op. cit.*, p. 16.

98 In Bangladesh, the coast is an area of institutional weakness. Though several government agencies and departments are working in the coastal region, there is hardly any linkage between them and institutional fragmentation is common. Only bilateral communication takes place between the Ministry of Land and other executing agencies when the latter require land for construction purposes. Further, the agencies responsible have hardly any presence at the local level. Most of these agencies operate only from their thana level offices, again this is not the case for all the departments which are responsible for programs concerning the coastal areas. *Ibid.*, p. 2.

try to manipulate the local masses with false promises and hopes with the help of their local supporters. Lack of political consciousness acts as a barrier for the coastal people to be properly aware about their rights and duties respectively.

Perennial vulnerability to natural hazards: The vulnerability of the coastal population to natural hazards is explained by the following facts: (i) the continuous threat of cyclones and storm surges;⁹⁹ (ii) the ongoing process of land erosion and accretion, affecting many people's property and livelihood. The poor are the victims of erosion, whereas the accreted land is grabbed by the people with local influence; (iii) severe water congestion on old accreted land and associated drainage problem; (iv) salinity intrusion and (v) the climate change induced impacts, as sea level rise, changes in storm surge frequencies and changes in rainfall patterns in the river basin upstream.¹⁰⁰ People's vulnerability to all such hazards is accepted as almost a *fait accompli* as no concrete measures of permanent nature have yet been taken to mitigate them except to respond to episodic crisis.

Threatened coastal ecosystems: The decline in viability of many distinctive and threatened coastal ecosystems including offshore marine habitats and mangrove forests. The Sundarbans faces bio-diversity erosion. Due to all pervasive ignorance, ecosystems, bio-diversity etc. are the terms totally outside the grasp of the coastal community.¹⁰¹

99 Natural disasters like cyclone and erosion are routine affairs in the coastal area of Bangladesh. Embankments have been constructed for providing protection to life and property, but lack of proper maintenance greatly reduce their capacity to withstand the ferocity of the storms. 'Integrated Coastal Zone Management : Concepts and Issues', *op. cit.*, p. 8.

100 'Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)', *op. cit.*, 15.

101 *Ibid.*

Coastal Pollution: As mentioned earlier, the coastal zone of Bangladesh is degraded by both on-site and off-site pollution and its sources are varied. Among the inland pollutants the following may be mentioned, i.e., chemical wastes from industries, agrochemicals, organic wastes from food processing industries, oil spills, domestic sewage and solid wastes.¹⁰²

Multiple and conflicting demands on the coastal resources : Human population increase coupled with demand for outputs and services and the need for economic development has led to multiple and conflicting demands on the coastal area stemming from both within and outside. For example, land use in the coastal zone is found to be ad-hoc and unmanaged which results in misuse in some places and undue exposure of people to cyclone threats in others. In many Thanas, there are conflicts over land use between sectors as well as between people, e.g., aquaculture use versus mangrove shelter belts and agriculture versus shrimp cultivation. Also confrontations between forestry, livestock, aquaculture and other interests over future uses of newly accreted land are not uncommon.¹⁰³ Too often, these conflicts are stirred up by unilateral action of central agencies, and local communities end up as helpless victims.

102 See for details, Zinatunnessa R M M Khuda, *op. cit.*, p. 163-166. Also see 'Integrated Coastal Zone Management : Concepts and Issues', *op. cit.*

103 "Integrated Coastal Zone Management : Issues and Concepts", *op. cit.*, p. 8.

Section II

Bangladesh Coastal Zone – An Area of Opportunities

While the list of vulnerabilities includes a wide range of issues, in the one of opportunities would be included all current economic activities in the region as mentioned above. In this respect, besides agriculture, shrimp culture, livestock, salt production, port facilities, few more opportunities await the region. The zone is the preferred site for urbanization and commercialization. Due to absence of easy access of communication networks, urbanization has not happened yet. But with the development of road networks, the situation will may change. Port cum mega cities like Chittagong and Khulana as well as 16-20 expanding semi-urban towns are located in the zone. New sites of EPZs (Export processing zones) and tourism complexes are all being planned in the coastal area. Ship breaking activities in coastal Chittagong are also expanding. Projected urban population will rise from 22% in 2000 to 39% of the totalcoastal population in 2025.¹⁰⁴

As indicated earlier, coastal Bangladesh is also rich in natural resources, both renewable and non-renewable. In recent years, coastal areas received international attention due to high potential for in-shore and off-shore natural gas.¹⁰⁵ Besides, the region houses several mangrove ecosystems, including the Sundarbans which has been declared World Heritage Site. It is known as the single largest stretch of productive mangrove forest in the world, and is inhabited by one of the most elegant creatures of nature, the Royal Bengal Tiger.¹⁰⁶

104 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op. cit.*, p. 4.

105 "Coastal Zone", *op. cit.*, p. 4.

106 The dimension and richness of biodiversity in the Sundarbans is also proven by the availability of 3,3033 tons of fish, 375 tons of mud crab, 3600 tons of oyster shells and 35 tons of gastropod shells which are obtained from the forest every

For the local inhabitants, the flat plains in the coastal areas are the most important resource that supports crop production, livestock rearing, salt manufacturing from the sea water, shrimp culture activities, ship breaking activities, harbour activities and different types of industries. Coastal areas are endowed with both fresh and brackish water resources. Sandy beaches of about 145 km runs from Cox's Bazar to Badar Mokam, 18km long in Kuakata in the central coastal area. Bangladesh has a tiny island at the tip of its south-eastern reach namely Narikel, Zinzira where coral colonies are located.¹⁰⁷ Provided all facilities are developed, sandy beaches offer good opportunities for tourism.

Exploitation of offshore oil and gas and extraction of minerals from coastal zone would, in all likelihood, be the new sources of income in the area. To this is added the human resource of the area on the condition that the coastal community is given the opportunity and privileges to educate themselves, enhance their skill and expertise, and develop overall capacity for participating in the local management of the endowed resources.

year. In addition, about 1,500 million tiger pawn fries are collected per year from the forest and its adjacent areas. The forest contains a total of 10.6m3 standing tree volume. 64% of it is occupied by the most commercially important species Sunduri. The most important non-wood forest plant is *Nypa fruticans*. Leaves from the plant are widely used for thatching of roofs of houses and boats and also for fencing the houses of millions of families around the coastal districts. The Sundarbans provide livelihood and employment to wood cutters, fishermen, honey and wax collectors, timber traders and workers, laborers of fish drying industries etc. *Ibid.*, p. 5.

- 107 Existing environmental conditions around the coral islands are poor due to several reasons including frequent spillage of bulge waters from the sea-going vessels, increasing turbidity of coastal waters because of deforestation followed by land erosion in the hilly reaches of the coastal zone, and exploitation of coral reefs by local traders. Without immediate and adequate conservation activities, the already endangered ecosystems of the coral islands are likely to suffer further degradation. *Ibid.*, p. 6.

Coastal Zone At A Glance

Table I

Basic Characteristics

Constant salinity and tidal effects

Location in a dynamic delta of the three mighty Himalayan rivers, the Ganges, Brahmaputra and Meghna (GBM)

A vast network of rivers with enormous discharge of sediments

A large number of islands in between the channels

The Swatch of No. Ground

Strong tidal and wind actions

Tropical cyclones and storm surges



Physiographic Units

Eastern region : A 'Pacific type' coast running parallel to young mountain ranges and is non-deltaic. The coast is settled, regular and unbroken one, and is protected along the sea by mud flats and submerged sands.

Central region : It runs from Tetulia river to the Big Feni river estuary including the mouth of the Meghna river. The region is characterized by heavy sediment input, formation of char (new islands) and bank erosion. The region is more dynamic and most of the accretion and erosion occurs here.

Western region : An 'Atlantic type' coast covers the area from the Tetulia river to the international border located in the Hariabhanga river. The region is characterized by many criss-crossing distributaries, stable land mass, and the presence of the world largest mangrove forest – the Sundarbans



Administrative Units

Sixteen districts, i.e., Chittagong, Noakhali, Barisal, Patuakhali, Khulna, Barguna, Bagherhat, Chandpur, Pirajpur, Shariatpur, Feni, Laskhimpur, Bhola, Cox's Bazar, Jhalakhati and Sathkhira.



Ecosystems and Biodiversity

The ecosystem consists of GBM estuarine system, submarine canyon, marshes and wetlands, coral reefs, islands and beaches. Biodiversity consists of 490 species of fish, 66 species of corals, 96 species of coral reefs fishes, 44 species of shrimps, 16 species of crabs, 7 species of lobsters, 361 species of molluscs, 18 species of lizard, 14 species of aquatic mammals, 46 species of terrestrial mammals and more than 315 species of birds. The total number of plant species in the Sundarban mangroves is 219 with 65 mangrove species.



Coastal Population

Ethnically the population is same as in the mainland. However, 12 different groups of tribal people inhabit the area. Islam, Hinduism, Buddhism and animism are the practiced religions.



Coastal Occupation

Coastal agriculture
Marine Fishery
Forestry
Coastal aquaculture
Salt production
Livestock
Honey collection
Extraction of mangrove forests
Boat making

**Threats to Coastal Zone****Socio-economic :**

Social fragmentation and unrest
Widespread poverty (ill health, malnutrition, lack of access to safe drinking water)
Illiteracy
Encroachment on traditional occupation
Uneven distribution of wealth
No job creation
Absence of Health and sanitation facilities
Multiple and conflicting demands on the coastal resources
Absence of political organizations
Absence of land based communication system
Absence of good housing and electricity

Physical

Perennial vulnerability to natural hazards
Threatened coastal ecosystems
Coastal pollution
Loss of coastal bio-diversity

**Opportunities in the Coastal Zone**

Rich in natural resources, both renewable and non-renewable
Availability of offshore natural gas, oil, in-shore radioactive carbon and biomass fuels
Availability of minerals like monazite, ilmenite, rutile, zircon and cesium
Prospects for vigorous activities in maritime communication
Prospects for tourism
Prospect for human resource development

Section III

Identifying the Key Policy Issues

Against the background of threats and opportunities as mentioned above, the overall goal of ICZM in Bangladesh should be to create conditions for reducing poverty, developing sustainable livelihood and guaranteeing the physical safety of the people. The rationale behind this is rooted in the fact that a large number of people particularly the poor depend directly on natural resources such as land and water for their livelihood. This implies sustainable use of the existing resources and their management for present and future generations. As coastal zones offer physical and biological opportunities for increasing human use, it is the objective of ICZM to find the optimum balance between these uses based on a given set of objectives. In this respect, based on the above goals, the three cardinal objectives i.e., conservation, protection and development that figure in the ICZM continuum in general are equally relevant in case of Bangladesh excepting the fact that they have different interpretations in view of the issues that are specific and peculiar to the country. In an area, where human interaction with nature is intense and where several anthropogenic activities like shrimp culture, development projects, deforestation, over-fishing, pollution are the factors to deplete the coastal resources and degrade the environment, the management task would be enormous.

With respect to conservation, the foremost management task would be to take into consideration the nature and extent of human exploitation of and intervention in the natural endowments of the coastal zone. As indicated earlier, such intervention and exploitation is intense reflecting not only the dire needs of the local population for sustenance and livelihood, but as well the commercial need for national revenue by the government and private need for business and profit. Thus, any effective conservation strategy in the region, is to be understood in the context of a complex web of

interrelationships among human activities, societal demands and natural resources. In particular, given the fact that the coastal resources are considered as 'common property'¹⁰⁸ resources (fish, forests, reefs etc.), societal demands for outputs from these resources through a number of activities constitute a right that cannot be disrespected. Logically, therefore, access to such resources is to be guaranteed for the local population and all other relevant groups. The management option would, therefore, be 'intervention' and not 'non-intervention' in nature' with the following objectives in mind: (i) to maintain a balance between the activities undertaken by the various groups on coastal resources; (ii) to arrest the degradation and exhaustion of the resources; (iii) to co-share the responsibility of conserving the resources by all the parties involved; (iv) to preserve all critical ecosystems and bio-diversity of the region. In brief, conservation as envisaged in ICZM suggests a framework of development in harmony with nature, in other words, understanding the strength and weakness of natural forces in designing various projects to meet the ever ending human demands.

In view of the fact that the coastal area in Bangladesh is densely populated one, various human economic activities tend to create stresses on the existing resources and environment. There is, therefore, the need to balance the multiple uses of the resources so as to guarantee maximum economic and social benefits for the coastal population. As observed, the coastal community remains as

108 Coastal resources, e.g., fish and coral reefs are often common property resources with 'open or free' access to users. Free access, often, if not typically leads to excessive use of the resources, e.g., over-harvesting of fisheries, and degradation or exhaustion of the resources, e.g., coastal pollution and habitat degradation. Because not all of the outputs from coastal resources can be expressed in monetary terms, free markets cannot perform the allocation tasks. Some process must be used to decide what mix of outputs will be produced. The process is ICM. 'What is Management' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 1.

the least beneficiary of all local resources and of income therefrom. In this respect, conservation should not be misunderstood as a policy to tap development. Rather, conservation oriented development will be needed to foster general economic and social prosperity of the coastal community.¹⁰⁹

On the question of protection of the coastal zone, the management issue attains a more critical dimension. In so far as the degradation to the coastal environment is caused by a host of natural calamities, the management option with respect to the control of natural process is limited. However, fatalism should not preoccupy the management in case of natural disasters. While the disasters and the calamities that come in the natural process cannot be controlled, their damaging and catastrophic effects on the life and property of the coastal population can be minimized. The poverty stricken people living in poorly constructed houses, the inadequate number of cyclone shelters, the poor cyclone forecasting and warning systems and the extremely low lying land of coastal zone are the factors to magnify the amount of loss and damage in the area due to natural disasters. Research shows that during the natural calamities, casualties were directly related to types of housing and shelters seeking activities, no death occurred among individuals living in 'pucca house' (house made of bricks and concrete).¹¹⁰ On the

109 Contrary to some current impressions, conservation and economic development are not conflicting ideas. In fact, well planned conservation – oriented development will add to the general economic and social prosperity of a coastal community, while bad development will sooner or later have a negative effect. With innovative management based upon sustainable use, communities may be able to achieve a desirable balance without serious sacrifice to either short development progress or longer term conservation needs. "Integrated Coastal Zone Management : Concepts and Issues", *op. cit.*, p. 10.

110 Golam M. Mathbor, "Civil Society, Disaster Management And Coastal Community Development", Paper presented at the 'The Joint Conference of the Federation of Social Workers (IFSW) And The International

preventive side, the objective should, therefore, be the integration of development and disaster management policies and activities. Disaster preparedness, would not only imply adequate physical protection, but also steps to tackle the structural inequalities in order to reduce vulnerability and increase coping capacities.¹¹¹ It should be mentioned that like in case of resource sharing where the coastal community remains at the end of receiving spectrum, they too in case of natural disasters remain the direct target of damage and devastation not faced by the inland population. Increasing their capability to cope with natural disasters and enhancing safety measures embedded in the concept of 'safe heavens' combining cyclone shelters, well constructed houses and towers, warning systems etc. may be effective in reducing vulnerability of the coastal population in many ways. However, it is the management issue with respect to human activities in polluting and degrading the coastal zone through industrial effluents municipal waste, domestic waste, oil spills from ships, spillage, ship breaking waste, deforestation, forest conversion, agricultural and industrial pollution, irrigation, flood control developments, shifting land and the over exploitation of biological resources that should be dealt with due concern. A close inquiry into such activities would show that the majority of such activities originate from the non-coastal zones in the upland. The relevant management issue would be to reduce the deleterious impacts of such activities through appropriate planning and action plans. Likewise, salinity intrusion and global warming which are other natural agents to degrade the coastal area may appear to be unmanageable, but measures should be taken to reduce the damage

Association of Scholars of Social Work (IASSW), Palais des Congr s. Montr al, Qu bec, Canada, July 29 – August 2, 2002, p. 6.

111 Disaster preparedness must be linked to recovery potential as well as survival if it is to make a lasting difference. This is vital if any credible development progress is to be achieved, and highlights the need for anti-poverty programs to take account of the impact of disasters. See for details, DHPN Report, op. cit.

that they are likely to cause to the coastal population. The control of human activities that degrade the coastal zone involve both the inland and the coastal population. The need, therefore, is to assess whose activities are more detrimental to the coastal environment. Thus, the impact of industrial effluents in the coastal zone on the environment would be more damaging than those activities like extraction of mangrove forests by the poor for constructing their house roofs and extraction of coral reefs for sale to the urban rich as decoration pieces.

The development as an ICZM objective inevitably comes in the context of conservation and protection of the coastal zone. Contrary to some current beliefs, conservation and economic development are not conflicting ideas. In effect, well planned conservation-oriented development would add to the general economic and social prosperity of the coastal community in Bangladesh. With innovative management based upon sustainable use, communities may be able to achieve a desirable balance without serious sacrifice to either short-term development programs or long-term conservation needs. In Bangladesh context, sustainability should not only confine itself to harvest, extraction and utilization of resources in a manner not exceeding a point that cannot be generated. Along side this limitation generally envisaged in sustainable development of ICZM program, development should incorporate moral and practical imperatives for emphasizing sustainable livelihood. While the concept of sustainable livelihood is somewhat analogous to sustainable human development being in practice in Bangladesh under the aegis of UNDP, the latter assumes a more serious dimension when 'security is added to it.'¹¹² Thus, in addition to the

112 "We define human development as expanding the choices for all people in society. This means that men and women – particularly the poor and vulnerable - are at the center of the development process. It also means protection of the life opportunities of future generations and the natural

five essential aspects of UNDP sponsored sustainable human development like empowerment, cooperation, equity, sustainability and security, sustainable livelihood security would connote: (i) adequate stock and flow of food and cash to meet basic needs and secure ownership of, or access to resources and income earning activities.¹¹³ A household may be enabled to gain sustainable livelihood security in many ways – through ownership of land, livestock or trees, rights to grazing, fishing, hunting or gathering, through stable employment with adequate remuneration or through varied repertoires of activities.¹¹⁴ The argument in favor of sustainable livelihood security as the strategy to reduce vulnerabilities of the poor and seek solutions for them is well expressed in the words of Chambers. R, that perhaps, has implications for the coastal community of Bangladesh as well. He remarks, “The case for making sustainable livelihood security central for environment and development strategies is reinforced by the need to offset such pressures on resources both from the commercial and rich and from the poor...contrary to popular professional prejudice, there is mounting evidence that when poor people have secure rights and adequate stocks of assets to deal with contingencies, they tend to take a long view, holding on tenaciously to land, protecting and saving trees, seeking to provide for their children. In this respect, their time perspective is longer than that of commercial interests concerned with early profits from capital, or of conventional development projects concerned with internal rates of return. Secure tenure and rights to resources and adequate livelihoods are prerequisites for good husbandry and sustainable management...enabling poor people to gain secure and sustainable

systems on which all life depends. This makes the central purpose of development – the creation of an enabling environment in which all can enjoy long, healthy and creative lives”. ‘Good Governance and Sustainable Development’, UNDP Governance Policy Report, 1994.

113 Atiur Rahman, op. cit., p. 502.

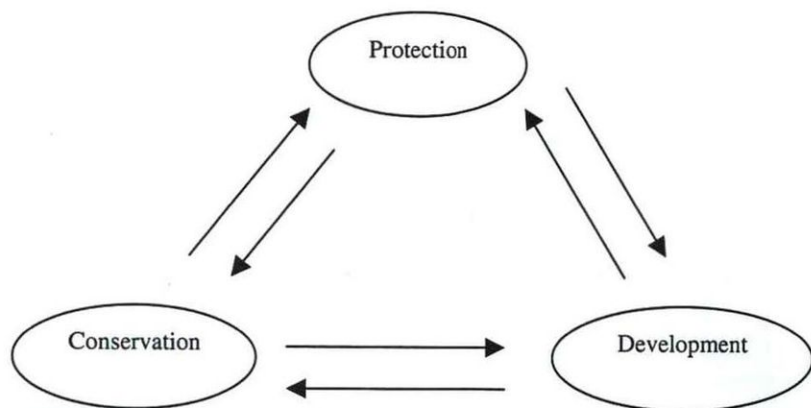
114 Ibid.

livelihoods in resource poor and forest areas, is thus, the surest protection for the environment. The poor are not the problems, they are the solutions".¹¹⁵ The message is that in any development, it is an imperative to make the poor people feel secure about their permanent rights over their resources. When rights are secure and poor people are not desperately poor, they tend to protect, conserve and enhance resources through development.

The goal of eradicating poverty and reducing all sorts of threats is an ethical, social, political and economic imperative. While ICZM as a management process is linked to good governance for attaining this objectives with support from the national level, the fact remains that the objective can better be achieved through a multi-dimensional and integrated approach. This would combine programs targeted at coastal people living in poverty with policies and strategies for meeting the basic needs of all, strengthening their productive capacities, empower them to participate in decision making on policies that affect them, ensure access of all to productive resources, opportunities, public services and enhance social protection and reduce vulnerability. In the context, the empowerment of the coastal community inevitably enters the scene. This is likely to lessen their dependence syndrome in the future and create a belief in them that they can solve their own problems without outside help. Towards this end, it would be an interesting endeavor to find out the extent of concern that the current donor sponsored ICZM in Bangladesh is expected to show for the coastal community. The succeeding chapter addresses this pressing question.

115 *Ibid.*, p. 503.

Identifying the key policy issues
Table II



Conservation	Protection	Development
Balance the human intervention in the natural endowments of the coastal zone	Fatalism should not preoccupy the management of natural disasters, pollution problems and hazards in the coastal zone	Development is to be considered in conjunction with conservation and protection
Understand the complex web of interrelationships among human activities, societal demands and natural resources	Integration of development and disaster management policies and activities	Development should be sustainable and conservation oriented
Arrest the degradation and exhaustion of the resources	Control of all human activities that degrade the coastal zone	Development should incorporate moral and practical imperatives for emphasizing sustainable livelihood
Co-share the responsibility of conserving the resources by all the relevant stakeholders		It should aim at eradication of Poverty, security of permanent rights of the poor over resources, guarantee of adequate livelihoods etc
Preserve all critical eco-systems and bio-diversity of the region		Coastal community should be the central focus in all development efforts

Chapter IV

Current Integrated Coastal Zone Management Régime in Bangladesh

The present management framework of ICZM in Bangladesh can be viewed to be in its nascent stage as the program has been initiated only a few years back with prodding from the donors. Although a belated phenomenon, ICZM in Bangladesh is preceded by a history marked by certain landmark events and developments. Such events and developments made the policy makers aware about the coastal problems not only in terms of hazards and disasters, but also about people's vulnerability in terms of their livelihood, isolation of the area, extreme unequal distribution of assets, and non-accessibility to local resources. The chapter delves into the history of the program in a manner as brief as possible. It then deals with few existing policies, legal and institutional frameworks that have created the groundwork for the current ICZM project in Bangladesh. Finally, a brief discussion on current management structure of the project is made in the chapter.

Section I History of ICZM in Bangladesh

In developed coastal states, and in many countries of high maritime significance, where the oceanic affairs till to date remain in low political stature, the same in case of a poor and underdeveloped country like Bangladesh remains, perhaps, at the periphery of the country's national policy. This is corroborated by the absence of any well formulated national ocean policy at the center, the lack of a coastal development policy, a mere appearance of protection and conservation of marine environment in the

environment policy (1992)¹¹⁶ of the country *en passant* etc. Under the circumstances, the grand idea of undertaking integrated coastal management could hardly come out of the brain works of the Bangladeshi policy planners. Currently, the country's endorsement of the ICZM under the aegis of UNEP sponsored South Asian Regional Seas Program is an attestation of the various post-Rio environmental norms and standards, and as well an attempt to co-share the regional environmental compulsions in the marine domain.¹¹⁷ The inclusion of the term 'zone' is a pointer to the case. In this respect, the country mostly had to follow the *diktat* of several of its donors in unleashing the program. The result being that in the evolution of ICZM in Bangladesh, one notices the initiatives mostly from the external agents rather than from within.

116 'In view of the various adverse impacts on environment, the Government of Bangladesh have attached special importance to its protection and improvement. A number of environmental problems, which inter-alia include natural disasters like recurrent floods, droughts, cyclones, tidal bores etc., primary signs of desertification in the northern districts, intrusion of salinity in the rivers, land erosion, fast depletion of forest resources, instability of the weather and climatic conditions etc. are prevalent in the country. Again this backdrop, the government has established the Ministry of Environment and Forest (MoEF) and upgraded the Department of Environment in order to coordinate and supervise the activities concerning protection and improvement of the environment. Simultaneously, major problems related to environmental pollution and degradation have also been clearly identified. See for details, "Environment Policy 1992" in Mohiuddin Farooq and S Rizwana Hasan, Laws Regulating Environment in Bangladesh, Bangladesh Environmental Lawyers Association (BELA), Dhaka, 1996, pp. 729-735.

117 The South Asian Regional Seas Program is UNEP sponsored and works through an Action Plan called South Asian Seas Action, adopted in 1995 with unqualified support of the region's five countries (excepting Bhutan and Nepal). Its objective is to protect and manage the marine environment and ecosystems of the region in an environmentally sound and sustainable manner. See for details, "South Asian Seas Program : Present Status of the Implementation of Actions and Conventions, UNEP", 01 December, 2000.

Nonetheless, the process has a history of its own marked by certain events of managerial importance.

Bangladesh, an Indian Ocean littoral country, shares a 710 kilometer long coastline along the Bay of Bengal, and is being threatened by some of the greatest pollution and coastal development pressures. Looking in retrospective, one would notice that in Bangladesh, where development challenges are formidable for all parts of the country, the coastal zone, termed interchangeably as 'disaster prone area', 'risk zone' or 'high risk zone' etc. remained for long a neglected area in the development focus of the government. Because of the area's vulnerability to such episodic natural calamities like tropical cyclones, tidal surges, tidal bores etc. with immense damage to the life and property of the coastal inhabitants, the focus on the area was mainly reactive in nature, in other words, a rush to the affected zones immediately after the havoc with aid and assistance from the donors for rehabilitating the local masses, supplying them with food and clothes etc. However, the catastrophic cyclone and tidal surge of 1970 (during erstwhile East Pakistan) that claimed the lives of nearly 150, 000 peoples created a fresh dent in the mind of the policy planners with respect to protecting the coast from such natural hazards.¹¹⁸ The new thinking in this respect was dominated by an engineering paradigm¹¹⁹ or construction approach seeking to build embankment and sluices in the coastal areas to protect the loss of life and crops from the natural calamities under the Coastal Embankment Project (CEP), funded mostly by the external donors. This approach, mono-agency and sectoral in nature, dominated the

118 'Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)', *op.cit.*, p. 4.

119 *Ibid.*

entire seventies through the works of Bangladesh Water Development Board (BWDB).¹²⁰

Beginning from the mid-eighties and in its aftermath, the policy planners, mostly with direction from the donors that finance the country's development projects, began to recognize the wider importance of many coastal issues, and the need to mainstream them into the process of national development. Slowly, a new approach to undertaking coastal zone management began to take shape by a recognition of the crucial significance of the zone in its own right in terms of its various threats and opportunities. Thus, under the direction of ESCAP (Economic and Social Commission for Asia-Pacific), a broader perspective towards coastal development seemed to attract the policy planners in Bangladesh. If carefully noted, during the period, the launching of SACEP (South Asian Cooperation for Environmental Protection) had few of its implications for the marine environment as well. A tangible effort by the GoB in this respect is the formulation of Bangladesh

120 Since the liberation of the country in 1971, an estimated amount of US\$ 72 million of grant assistance and US\$ 700 million of loan was invested in various development initiatives for coastal resources management, but their effects have been mixed. The CEP (Coastal Embankment Project) constructed about 4,800 km of embankment to protect 1,366,000 ha of coastal land from saline water intrusion. By 1970, the work was completed after which both living conditions and agricultural production improved considerably. There is a dense canal system which is used for transport by boat in the wet season. A network of footpath between villages and along the larger channels provided for all movement during the dry season. The negative effects of the projects are no less pronounced these days, though these were very little understood when it had all begun. The natural nursery and grazing grounds of many marine and estuarine fish and prawn have been eliminated by these embankments. These are also creating problems for drainage from polders during the rainy season and for communication as traditional navigation channels have been blocked by deposit of silt.. 'Integrated Coastal Zone Management : Concepts and Issues', op. cit., p. 7.

National Conservation Strategy (1986/87) with relevance to coastal zone protection.¹²¹ During the same period, the UN/ESCAP/GoB led 'Coastal Environment Management Plan for Bangladesh (CEMPBD)' has been another landmark event to put forward the idea of ICM in a different perspective.¹²² It envisaged integrating socio-economic considerations into the environmental issues. While the concept of sustainable development as envisaged in 'Our Common Future Report (UN, 1987)' might have influenced the idea, the catastrophic flood of 1988 with colossal loss of property and lives had its far reaching influence on the policy planners of the country for integrating environment with development with a socio-economic dimension. Although, it had been a brave attempt by CEMPBD towards an integrated approach to coastal zone management, it failed to implement many of its plans and proposals. At best, credence to it was given on face by CARDMA (Coastal Area Resource Development and Management Association) in 1988 formed by the members of the Parliament representing the constituencies in the coastal region and few experts, scientists and policy makers. The most notable outcome of CARDMA is the 'Action Program' that came out of the Association's workshop in 1988 highlighting the priorities on three aspects, Sundarbans, conservation of the environment and

121 The strategy states, 'The economic development of the coastal zone, therefore, needs to be carefully controlled and monitored in view of the numerous linkages that contribute to keeping the whole intact, and it is the whole that matters when considering long-term benefits'. National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op. cit.*, p. 2.. It may be mentioned that in the late 1980s, the ESCAP sponsored the first major initiative in the evolution of a coastal zone management policy in Bangladesh. A report titled 'Coastal Environment Management Plan for Bangladesh' was produced in 1988 addressing the most obvious problems of the coastal zone with emphasis on the need for integrating socio-economic and environmental issues. ESCAP, 1988.

122 'Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)', *op. cit.*, p. 5.

sustainable development.¹²³ Despite the fact that a number of recommendations were made on several topics such as shrimp cultivation, forests, land reclamation, wildlife preservation etc., there had been no further follow-up action programs, and the initiatives, and most of the recommendations were viewed as piecemeal ideas and views of the experts with little practical value.¹²⁴ The catastrophic cyclone of 1991 that claimed the lives of nearly 130, 000 peoples had been another event to draw the policy planners' focus on protecting the people from such havoc through donor (UNDP) aided projects like Multi-purpose Cyclone Shelter Program', 'Master Plan for Multipurpose Cyclone Shelters', 'Cyclone Risk Development Plan etc.'¹²⁵ During the period, an important fact to take note of is the government's recognition of the relationship between development and disasters. If any prevailing trend is credited to have created such awareness, then it would be right to say that post-Rio environmental programs and strategies probably had their influence on such linkage. In this respect, the creation of the Disaster Management Bureau in 1993 (DMB) can probably be viewed to be a tangible effort in the direction.¹²⁶

It is also significant to note that despite the absence of a national ocean policy or a definite coastal development act, several

123 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op. cit.*, p. 2.

124 *Ibid.*

125 "Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia)", *op. cit.*, p. 5

126 The Government of Bangladesh recognized the relationship between development and disasters, and hence in 1993 the Disaster Management Bureau was created. Initially , the activity of the Bureau was funded by UNDP, but the later also received co-funding from UNICEF and DFID. The objective is to create and strengthen disaster management capabilities at the district, thana, union and village levels. Efforts are also directed to prepare a comprehensive disaster management program. *Ibid.*, 7.

policies and regulatory directives at the center started taking shape from the early nineties. In this connection, 'Conservation and Preservation of Coastal and Marine Environment' as envisaged in the National Environment Policy of 1992 has been the most landmark development with respect to coastal development in the country. Although, the new strategy did not envisage an integrated approach towards coastal management, nonetheless, its materialization depended on a coordination of activities between various government departments and agencies. Very little success was, however, achieved in the field. Also, the National Environment Management Action Plan (1995) that with the assistance from the UNDP sought to promote sustainable environment management through a participatory process hardly has any tangible result to its credit. The result being not only the lack of coordination, harmonization or integration between the bureaucratic apparatus and administrative arrangements within which the coastal zones fall, but that the government at the center miserably failed to capture the distinctive combination of threats and opportunities that characterize the coastal zone of the country. More dismaying is the fact that despite the mention about the needs and imperatives of the coastal communities in various government development planning and implementation projects, in practice they were not properly taken into consideration.¹²⁷ Consequently, most of the coastal zone management projects failed, and the question of poverty eradication, empowerment of the coastal people or creation of alternative means of livelihood in the area hardly remained in the scale of national priorities. In other words, despite various proposals, initiatives and piecemeal efforts, no plans, laws and administrative modalities were framed out with respect to the development of coastal zone as an unified system, let

127 Golam M Mathbor, 'The Importance of Community Participation in Coastal Zone Management : A Management Perspective', Community Development Journal, Volume 32, No. 2, April 1997, pp. 124-132.

alone the question of integrated management in the area. Even, the much lauded UNDP sponsored sustainable human development program at the national level (with mostly terrestrial concern) could do little to salvage the coastal community from their underdevelopment and the miseries associated with it. It is in this context that the national planners of Bangladesh, financed and inspired by the donors, sought for an integrated coastal zone management with the avowed goal of no longer leaving the area neglected, isolated and keeping it at the mercy of natural hazards.

Guided by the World Bank, the Netherlands and the World Food Program, Bangladesh was urged to identify specific concepts, goals and objectives and policy formulations to move forward the principles of integrated management of coastal zones that had been on the platter for discussion for nearly a decade. Undertaking such a grandiose plan in hand needed little brushing, and the GoB in 1999 sent a high level delegation to South East Asia to study ICZM.¹²⁸ The delegation work subsequently culminated in drafting the first GoB Policy Paper on ICZM in September 1999. Because of the country's involvement in the UNEP sponsored South Asian Regional Seas Program, the term 'zone' was kept intact in the GoB Policy Paper on ICZM. The establishment of Program Development Office (PDO) in 2000 gave a tangible shape to the GoB policy on ICZM as the former is to develop a framework for ICZM in Bangladesh in the preparatory phase of first three years. ICZM in Bangladesh is, therefore, a relatively new venture and its present management structure can only be studied in the light of its mere Steering Arrangement which is as follows:¹²⁹

¹²⁸ *Ibid.*, p. 8.

¹²⁹ National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op. cit.*, p. 7.

Steering Arrangement
Programme Development Office – ICZM

Interdisciplinary team
 Counterparts from Ministries

Inter-Ministerial Steering Committee
 Secretaries of the Ministries of Water Resources,
 Agriculture, Fisheries and Livestock, Planning,
 Land, Environment and Forestry, Shipping,
 Local Government

Inter-Ministerial Technical Committee
 Representatives of GoB Departments, NGOs,
 Civil Society, Academics, Donors, Key
 Projects and others.

Section II

Management Lessons for PDO-ICZM

If management is a continuous learning process to which feedback is as well provided by past experiences, then the proposed ICZM in Bangladesh has, probably little to learn from the past as the country's policy with respect to **preservation and conservation of marine and coastal environment** did not go along an integrated approach. Nonetheless, few policies, legal and institutional framework that in general guide the latter may have few of its ramifications on the newly proposed ICZM in the country.

Among the major **government policies** relating to the preservation and conservation of marine resources in Bangladesh is the Environmental Policy of 1992. The objectives that flow from the policy for coastal and marine zones are the following: (i) ensure environmentally sound conservation and development of coastal and marine ecosystems and resources; (ii) prevent all

internal and external activities polluting the coastal and marine areas; (iii) strengthen necessary research to preserve and develop coastal and marine environmental and resources and (iv) limit coastal and marine fish catch within tolerable regeneration/re-spawning limits.¹³⁰ To hone the policy, the Environmental Action Plan was adopted in the same year that too had few objectives with regards to coastal and marine environment. In particular, the action plan envisaged coordination among several ministries and departments for the purpose. Two examples are cited here out of few. *First*, Ministry of Land and Department of Forest (Ministry of Environment and Forest) were to work in coordination with each other in order to hand over to the newly accreted land in coastal areas to the latter for stabilization of land and afforestation. *Second*, Department of Shipping (Ministry of Shipping) and Bangladesh Navy (Ministry of Defense) were to in unison in order to prevent pollution of territorial waters and as well monitor it.¹³¹ The Forest Policy of 1994 also had its direct relevance for the conservation and preservation of marine environment. The policy emphasizes the importance of maintaining the ecological balance through conserving the natural habitat and rehabilitating biodiversity of the degraded forestland. It also recognizes the importance of people's participation to control encroachment of forestland, illegal felling of trees and illegal hunting of wildlife on the basis of mutual partnership agreement.¹³² At least 3 working plans have been prepared for the SRF between 1894 and 1980. None of the working plans contained any prescriptions for wildlife conservation.¹³³ It is important to note that there is no national policy to manage coastal protected areas effectively for the

130 Mohiuddin Faoque and S Rizwana Hasan, *op.cit.*, p. 734

131 See for details, 'Environment Action Plan 1992' of Bangladesh, in *Ibid.*, pp. 738-758.

132 Dipak Kamal, *op. cit.*, p.47

133 *Ibid.*, p. 48.

conservation of coastal and marine environment and resources therein. Similarly, the Fisheries Policy of 1995 recognizes the importance of conservation and participation of the resource users as a prerequisite for sustainable development. However, there is no provision to create alternative of ESN (Estuarine Set Beg Net) fisherfolk to reduce over-fishing. It has no provision to establish marine protected areas in the EEZ of Bangladesh although Marine Fisheries Ordinance (1983) and Territorial Waters and Maritime Zones Rules (1977) have reference for creating protected areas in the EEZ for the conservation of fisheries resources.¹³⁴

As far as **legal framework** for conservation and protection of Bangladesh marine environment is concerned, the country is backed by a list of laws and acts, both international and municipal. With respect to management of coastal zone in an integrated fashion, UNCLOS recognition finds eloquent expression in its very preamble. It views that the problems of the ocean are closely interrelated and need to be considered as a whole. The Convention talks about the need for sustainable uses of the ocean space and its resources in the following areas: (i) fisheries and aquaculture (Parts V, VII and IX of the Convention); (ii) minerals and metals (Parts V and XI); (iii) shipping, ports and harbours (Parts II, III, IV, V, VII, X, XI and XII); (iv) coastal development and engineering (Part XII), (v) tourism (Part XII); (vi) scientific research (Part XIII); (vii) technology (Part XIV) and (viii) defense (warships, monitoring and surveillance, Parts II, V, VII and XII). However, it should be mentioned that it is Chapter 17 of Agenda 21 of UNCED (1992) that gave a concrete shape to ocean management by incorporating seven comprehensive programs in it among which the first one deals with integrated management and sustainable development of coastal areas including exclusive economic zones. The program (i) provides for an integrated policy

¹³⁴ *Ibid.*

and decision making process to promote compatibility and balance of uses; (ii) identifies existing and projected uses of coastal areas and their interactions; (iii) concentrates on well-defined coastal management related issues; (iv) applies preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects; (v) promotes the development and application of methods, such as national resource and environmental accounting, that reflect changes in value resulting from uses of coastal and marine areas and (vi) provides access to relevant information and opportunities for consultation and participation in planning and decision making at appropriate levels. The first programme along with the one ones such as marine environmental protection, sustainable use and conservation of marine living resources of the high seas, sustainable use and conservation of marine living resources under national jurisdiction, strengthening international including regional cooperation and coordination and sustainable development of small islands constitute a process leading in the direction of integrating ocean development into general development strategy. In reality, the Chapter 17 of Agenda 21 acts a bridge between UNCLOS and UNCED process. Thus, a number of post-Rio international conventions, treaties and protocols obliged Bangladesh to pay due attention to its marine environment. So far, the country signed 24 and ratified 22 international conventions/treaty/protocols relating to the environment and natural resource conservation. The most important among them are mentioned in the following table.¹³⁵

135 Mohammad Yousuf Mehedi op. cit., p. 94.

Table: III

- | | |
|--------|--|
| (i) | International Convention for the Protection of Birds 1995 |
| (ii) | International Convention for the Preservation of Pollution of the Sea by Oil, London, 1995; |
| (iii) | The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971; |
| (iv) | Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters, 1972; |
| (v) | Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1971; |
| (vi) | International Convention for the Prevention of Pollution from Ships 1973, (MARPOL); |
| (vii) | Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973; |
| (viii) | Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973; |
| (ix) | Protocol to Amend the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Paris, 1982; |
| (x) | UNCLOS, Montego Bay, 1982; |
| (xi) | Vienna Convention for the Protection of the OzoneLayer, Vienna, 1985; |
| (xii) | Agreement on the Network of Aquaculture Centres in Asia and the Pacific, Bangkok, 1988; |
| (xiii) | United Nations Framework Convention of Climate Change, New York, 1992 and |
| (xiv) | Convention on biological Diversity, Rio de Janeiro, 1992. |

At the municipal level, there being the absence of a single unified law for protecting marine and coastal environment, biodiversity and resource management, the country has taken advantage of various acts and laws with relevance, direct or indirect, to the subject. The list includes Forest Act (1855), Protection and Conservation of fish Act (1950), Territorial Water and Maritime Zones Act (1974), Wildlife Preservation Act (1974), Territorial Waters and Maritime Zones Rules (1977), Marine Fisheries Ordinance (1983), Environment Conservation Act (1955) and Environmental Conservation Rules (1997).¹³⁶

While policies and legislation existed well in black and white, the problem with respect to conservation and protection of marine environment in Bangladesh arose with respect to **institutional framework**. Institutions are the main actors in the coastal management process and the institutional mechanism created to harmonize the activities and programs that affect the coastal area and its resources constitute a fundamental part of ICZM. In case of Bangladesh, there being no central statutory institution for the conservation of coastal habitat and resources, the newly created Ministry of Environment (1989) acted as the vanguard of the task with other public agencies to carry out the mandate. They are Department of Forest, Department of Fisheries, Department of Environment, Bangladesh Parjatan (Tourism) Corporation.¹³⁷ In addition, NGOs, Research Institutions and Educational institutions also had their role to play. In particular, the NGOs played a significant role in the development of the coastal fisher-folk community. Complications, however, arose among the departments and agencies guided by different mandates and laws, often containing different goals, objectives and policies. As Cicin

136 For detailed discussion on the acts and laws, see Mohiuddin Farooque and S Rizwana Hasan, *op. cit.*

137 Mohammad Yusuf Mehehi, *op.cit.*, p. 112.

Sain and Knecht remark, "agencies may also differ in outlook, type of personnel and training, and external constituencies. Hence, institutions, even if predisposed to collaborate with sister organizations, may interpret their underlying legislation as restraining or even preventing such cooperation".¹³⁸ The tendency reflected itself well in case of Bangladesh too. The conflict between the Ministry of Land, the Department of Forest and the Ministry of Environment and Forest over some water bodies (e.g., mangroves and wetlands) is a pointer to the case.¹³⁹ The conflict between the Ministry of Fisheries and the Department of Forest over the management of fishes in the Sundarbans is another important illustration of inter-departmental conflict. In a normal manner, the Ministry of Fisheries and Livestock should work as the leading agency for coastal aquaculture management.¹⁴⁰ In practice, however, other ministries like the Ministry of Land and the Ministry of Industry intervened and sought to play their respective roles by issuing leases of mangrove swamps for shrimp culture without even consulting with the Ministry of Forest or Fisheries and Livestock.¹⁴¹ Similarly, the Ministry of Environment and Forest was not recognized in making policies with regard to shrimp culture in the buffer zone of the Sundarbans.¹⁴² In effect, there has virtually been no inter-agency coordination in managing coastal and marine environment and resources with any vision to conserve or preserve ecology, bio-diversity or resource of the region. Due to lack of coordination between the relevant departments, the works and proposals of various research institutes and universities were of no avail. More important, there has been

138 Cited in 'What Kind of Institutions Carry out ICM' in "Integrated Coastal Zone Management", *op. cit.*, p. 1.

139 "Integrated Coastal Zone Management : Concepts and Issues", *op. cit.*, p. 8

140 "Integrated Coastal Zone Management in Bangladesh: A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)", *op. cit.*, p. 1.

141 *Ibid.*

142 *Ibid.*

no partnership agreements between resource users and governing agencies in the 'top-down' management regime as envisaged for protection and conservation of marine environment in Bangladesh. In addition to these problems, widespread corruption, lack of skilled manpower and lack of proper enforcement measures also worked against national development with respect to marine and coastal environment.

For the purpose of the paper, it is relevant to know about the extent of community involvement in the government sponsored conservation and preservation of marine environment program. The government approach to coastal zone management and its development in Bangladesh has been over-centralized with little community participation existing in the development of coastal regions. This phenomenon or the 'paternalistic fallacy' assumes that planners, technicians and experts possess all knowledge, wisdom, and virtue needed to achieve development; the poor being deemed responsive and grateful beneficiaries.¹⁴³ These centralized planning approaches have generally been expensive and of limited lasting value. Their often individually focused emphasis has also resulted in greater isolation, dependence and despair for the inhabitants. In a clear-cut centralized system, therefore, the local coastal community did not witness, among others, (i) the transfer of authority and responsibility; (ii) sufficient financial resources and mechanisms for generating revenue; (iii) adequate administrative and technical capacity for handling new responsibilities; (iv) reliable accountability mechanism in place and (v) a clear definition of what should the local people do and how to preserve and conserve the marine and coastal environment.

143 Golam M. Mathbor, *op.cit.*, p. 131.

Section III

Management Structure of PDO-ICZM

The on-going ICZM project in Bangladesh is not expected to work in vacuum as few experiences and lessons can be drawn from the decade long practice of conservation and protection of marine and coastal environment in Bangladesh for its future operation. The Steering Arrangement under which the current ICZM in Bangladesh is functioning has, in its Inception Report (January 2001),¹⁴⁴ charted out an outline of past activities and a list of future activities to achieve the goal of ICZM. More important to take note of is its reference, direct or indirect, to some of the actions that most nations adopt to accomplish its purposes of ICZM. They are: (i) a policy commitment to support coastal resources management and environmental conservation; (ii) achieving an understanding on resources and environmental objectives among the various coastal stakeholders; (iii) establishment of a governmental office for coordination of coastal affairs; (iv) initiation of a system for review of development projects, including environment assessment; (v) accumulation of technical information and (vi) design and development of effective planning and management programs. It would be relevant to see how the PDO-ICZM conforms to such actions.¹⁴⁵

The present ICZM program in Bangladesh seems to be a committed one, at least, politically. As one government official

144 Although some of the assumptions taken during the preparation of the Inception Report have changed, the major tasks to be done are still valid. These are in brief, office arrangements and personnel, facilitating the Steering arrangements for the ICZMP, protective interaction and harmonization, participatory stakeholders Consultation Process etc. National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', op.cit., p. 4.

145 John Clark, op.cit., p. 158.

remarked, 'needless to repeat that ICZM type of program cannot succeed without a strong political commitment. Hopefully, there will be no lack of it this time'.¹⁴⁶ The goals and visions as envisaged in the PDO-ICZM speak about a comprehensive development of the coastal zone for the benefit of all involved in the process. Thus, to GoB, ICZM 'offers a means of balancing the competing demands of different users for the same resource and of managing the resource to optimize benefits ... it is an effective framework for dealing with the conflicts arising from interactions of the various uses of coastal areas'.¹⁴⁷ The definition, apparently, has a human outlook as it talks about a just share of coastal resources and their management in a way so as to avoid conflicts and disputes whatever. More important is the vision and some of the issues associated with it that directly touch on human aspect. The vision statement goes as such, 'to make the coastal zone a place where local people can pursue their life and livelihood within a secure set of physical conditions and can make use of the natural resources for their well-being, which is also conducive to the long term sustainable development of the region and the nation as a whole'.¹⁴⁸ The vision, therefore, generates issues like safety of the coastal people from natural disasters, fulfillment of their basic needs and alternative livelihood, regional economic growth, improved environment and ecosystems, empowerment and participation, institutional and legal development.¹⁴⁹ In order to translate the stated goals into reality, the PDO puts emphasis on a wide range of sectoral policies as they relate to coastal development. In this respect, the policies are under review and are likely to influence any future management structure with respect to

146 "Integrated Coastal Zone Management : Concepts and Issues", *op. cit.*, p. 15.

147 National Workshop on 'Vision for Development for the Coastal Zone of Bangladesh', *op. cit.* p. 3.

148 *Ibid.*, p. 8

149 *Ibid.*

ICZM in the country as development activities in the coastal zone are multi-sectoral and are guided by sectoral policy documents.

With respect to achieving an understanding on resources and environmental objectives among the various stakeholders, ICZM strategy is perceived as a forum for the different key stakeholders to come together to exchange information to agree on principles and basic parameters to weigh interests, to agree on priorities and thereby to engage in integrated coastal zone management. In this connection, a Participatory Stakeholder Consultation Process (PSCP) was felt to be an essential prerequisite for the process.¹⁵⁰ It will deliver the essential information from the stakeholders in the coastal zone in order to get the issues with their views on future development. It would be carried out under the responsibility of WARPO (Water Resource Planning Organization, The Ministry of Water Resources). The NGOs who are active in the coastal zone will participate in the process with PDO-ICZM having a monitoring role. Because of the fact that the PSCP has to deliver essential information for the development of a

150 A Japanese Grant to the World Bank has been made available to the Government of Bangladesh for Policy and Human Resource Development to initiate a participatory stakeholder consultation process (PSCP). The funds will be channelled through the Water Resources Planning organization of the MOWR of Bangladesh. The Program Development Office of ICZM will play a monitoring role in the implementation of the activities as defined. The World Bank, IDA is the administrator of the funds. The PSCP will be done at local community, regional and national levels to ensure that integrated coastal management and priority project interventions are based on the needs of the local communities and institutions needs. NGOs working in the coastal zone of Bangladesh will organize the grassroot consultations which will be facilitated by experienced facilitators. The regional and national consultations would be organized by specialists who would also be responsible for organizing, synthesizing and analyzing the outcomes. A national team leader would have the overall responsibility for the process. "Coastal Zone", *op. cit.* pp. 1-7

vision and a strategy for coastal development, the PDO-ICZM has been involved in the conceptualization of the PSCP in order to get the answers to the right questions at the three levels, local community, regional and national. NGOs working in the coastal zone of Bangladesh will organize the grassroots consultations, which will be facilitated by experienced facilitators. The regional and national consultations would be organized by specialists who would also be responsible for organizing, synthesizing and analyzing the outcome.

With respect to the establishment of a governmental office for coordination of coastal affairs, it should be mentioned that there is no central coastal agency to undertake the task. The administrative culture of Bangladesh is not supportive of an area-based super agency with a mandate to control all aspects of the coastal area.¹⁵¹ The result being that in the Gob Policy Note on ICZM there is a decision not to establish a special coastal development agency but rather to base ICZM on harmonization of the policies, programs and capabilities of existing institutions. This means that effective institutional processes for this harmonization are pivotal to coastal development. Till to date, the issue that remains somewhat contentious is the selection of water resource agency as the lead sector to carry on the ICZM.¹⁵² This puts special responsibilities to the Ministry of Water Resources in opening up for cooperation with other government sectors, local government and organizations. It is important to note that the current PDO is housed in WARPO (Water Resources Planning Organization) which was not the intention before.

151 "Integrated Coastal Zone Management : Concepts and Issues", *op.cit.*, 15.

152 "Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)", *op.cit.*, p. 9.

In effect, the selection of the Ministry of Water Resources as the lead agency and the housing of PDO in WARPO has raised concern with respect to the integrated approach that the ICZM is supposed to take with respect to coastal development. Two factors many explain the selection. *First*, it is the question of issue. Since the said Ministry is involved in coastal development in a number of projects like embankments, polders, sluices etc., the development in the area is seen as its prerogative. This, despite the fact that its past record draws a bleak picture of its achievements as most of the above mentioned projects, based on pure engineering approach, neglected the socio-economic conditions of the coastal people. In particular, the change in land use and planning in the area was adversely affected, and caused open conflict with the Ministry of Land on many occasions.¹⁵³ Water issues are not only the ones to be involved in a comprehensive ICZM program, it is just a component of the whole process. However, the position of the Ministry of Water Resources as the lead agency somehow gives the impression of current ICZM as being water sector dominated. *Second*, it is the question of taking initiative. It may be mentioned that since the independence of Bangladesh, the country has taken a number of programs in the water sector with help and assistance from the Netherlands, in particular, in the Meghna sector. Other donors active in the process are the World Bank, Asian Development Banks and Danida. In effect, with aid from the Netherlands, the Ministry of Water Resources has been successful in launching the Integrated Water Sector since 1997, and this program is likely to be incorporated and operational in the current ICZM.¹⁵⁴ More important, since the current PDO-ICZM is funded mostly by the Netherlands, the GoB probably feels that like in the

¹⁵³ *Ibid.*

¹⁵⁴ "Integrated Water Resource Management", Publication by the Embassy of Netherlands in Dhaka, Bangladesh, 2000.

Netherlands, in deltaic nations the lead for ICZM should be normally in the hands of the Water Resources agency.

With regards to initiation of a system for review of development projects including environment assessment, a common understanding has been reached at with different options to enhance resilience of the coastal communities, to develop the coastal resources in a sustainable manner and to restore and maintain critical environment processes. Development challenges can be defined from existing trends and processes. From this, the most promising strategies are to be defined and then translated into operation and action in accordance with existing policy plans. The process to arrive at common strategies would consist of (i) economic development opportunities of different parts of the coast; (ii) strategies for environmental protection and conservation of biological diversity; (iii) strategy for land use planning and zoning, including land reclamation; (iv) reaching at specific objectives after consultation with the stakeholders; (v) enhance productivity and to increase the resilience of the people.¹⁵⁵

Accumulation of technical information has received its due impetus in the current PDO-ICZM. An Integrated Coastal Resource Data Base (ICRDB) is to be developed under the monitoring of the PDO-ICZM. The ICRDB is to contain essential data and knowledge, in particular, with respect to marine ecosystems, aquatic resource potential, marine resources of the Bay of Bengal etc.¹⁵⁶ The ICRDB is also intended to undertake an assessment of the state of social, environmental and natural resources. Lastly, with respect to design and development of effective planning and management programs, PDO-ICZM has

155 National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op.cit.*, p. 8.

156 "Coastal Zone", *op. cit.*, p. 14.

produced a framework to guide decision makers in the immediate and future allocation of scarce resources among competing interests (stakeholders). In this respect, the ICZM-PDO Program has defined detailed objectives, priority projects and activities in its Strategy Document (February, 2001).¹⁵⁷ It defines the outline conditions for ministries and departments to prepare annual plans and budgets. The program should be prepared by key stakeholders, scientists and consultants. Related line ministers and departments would be required to support and agree with the document. The PDO-ICZM has a temporal dimension as well. It would work in its preparatory phase for three to four years after which some elements of the program might enter the 6th Five Year Plan to be adopted in 2003.

Section IV

Policies, Legal Structure and Institutional Frameworks

The mere setting of action plans at the national plan would not necessarily guarantee the effective functioning of ICZM. Much would depend on how the plans and programs of the PDO are backed by policies, institutions, the legal and administrative capacity, financial capacity and human resources capability.

Policy Guidelines: The current ICZM is to be guided by a number of national policies, more than what one observed in case of conservation and protection of marine environment in Bangladesh. The relevant policies are as follows: (i) National Environment Policy (1992); (ii) National Tourism Policy (1992); (iii) National Forestry Policy (1994); (iv) National Fisheries Policy (1998); (v) National Policy for safe Water and Sanitation (1998); (vi) National Agricultural Policy (1999); (vii) National Water

¹⁵⁷ National Workshop on 'Vision Development for the Coastal Zone of Bangladesh', *op.cit.*, p. 2.

Policy (1999); (viii) Industrial Policy (1999); (ix) National Shipping Policy (2000) and (x) National Land Policy (2001). All the mentioned policies have clear implications for coastal development, but in most cases do not have specific sections on coastal areas and often fail to capture the distinctive combinations of vulnerabilities and opportunities that characterize the coast.¹⁵⁸ For example, the National Water Policy does not categorize the coast as a distinctive zone, but rather links it into three distinct southern hydrological zones that connect it to the wider catchment. Specific issues such as saline intrusion are acknowledged but no distinctive policy prescriptions that reflect the coast's different characteristics are contained in the policy.¹⁵⁹ Similarly, the draft National Land Use Policy recognizes the far higher levels of land conflicts in the coastal areas but does not contain effective prescriptions for their resolution. Likewise, it does not contain specific contingencies for the extremely rapid levels of land erosion and accretion or the very different problems associated with land tenure and land rights found in coastal areas.¹⁶⁰ Some policies do, however, acknowledge the special nature of the coast, for example, the Environment Policy reflects the special character and importance of marine and coastal habitats and the specific pollution threats that come from ship breaking, port activities and coastal industries. The policy contains provision for a special cell for the cooperation and monitoring of activities to protect coastal and marine environment, but it is worth noting that this cell has not yet been established by the Ministry of Environment.¹⁶¹ Also Forestry Policy contains specific provisions for the afforestation of newly accreted lands and the protection of mangroves, and

158 "Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship, Working Paper 1)", *op. cit.*, p. 11.

159 *Ibid.*

160 *Ibid.* 12.

161 *Ibid.*

recognizes the importance of (both as habitats and in coastal protection) and specific threats to forest resources in coastal areas. There are, however, problems associated with the implementation of the policy, and the rapid degradation of coastal forests has yet to be addressed.¹⁶² The policy that is most specific in dealing with coastal areas (and is of profound importance for coastal livelihoods) is the Fisheries Policy. Similarly, whilst not formally a policy (and consequently not considered in the PDO paper), the National Disaster Management Program is a de facto policy of profound importance to the coast.¹⁶³

It would be wrong to state that the policies as mentioned above are not relevant to coastal development. While each of the Ministries has its own sectoral policy with respect to coastal development, the challenge lies creating a linkage between these policies, in other words, the need for a strong inter-departmental coordination. In this respect, even the GoB admitted that, 'development programs do not occur departmentally, they appear in a complex web of interrelationships needing concerned efforts by more than one agency'.¹⁶⁴ As a result, the issue of inter-sectoral linkages would be always critical for the future development of the coastal areas of Bangladesh. The absence of an agency to direct coastal development makes it even more critical.

Legal Structure: As observed in case of the coastal conservation and protection, principles for guiding it were the agreed international norms of environment and development that have emanated from the Earth Summit (1992) and key

162 *Ibid.*

163 *Ibid.*

164 Government Policy Paper on ICZM, 1999. Cited in "Integrated Coastal Zone Management in Bangladesh : A Policy Review (Livelihood-Policy Relationship in South Asia, Working Paper 1)", *op. cit.*, p. 8.

international agreements and principles specifically related to the special character of coasts and oceans. In addition, a number of municipal acts and laws in the field influenced the policy in various ways. The same set of rules and principles emanating from sources, both international and municipal, would find their relevance in case of the current ICZM as well. In this connection, the management task would be to see if the laws, decrees and regulations, in particular, at the municipal level, are adequate enough to allow the present management operate. Also, to take into consideration with due concern would be the effective means of compliance and enforcement. For example, although, most of the developing countries do not lag behind in signing a number of environmental legislation, their enforcement is hampered by tight budgets, violations that are difficult to detect, cumbersome inspection procedures, poorly written regulations, complex mechanisms for punishing violations etc.

Institutional Framework: The institutional framework of current ICZM in Bangladesh is at present a matter of conjecture only. The SC will coordinate the interdepartmental activities with participation from all stakeholder's ministries and agencies under their jurisdiction. The Minister of Water Resources will chair this high level committee. Given the fact that the ICZM is seen as a multi-sectoral program, a number of Ministries/Agencies are represented in the SC. They are: (i) Ministry of Water Resources; (ii) Ministry of Fisheries and Livestock; (iii) Ministry of Environment and Forests; (iv) Ministry of Agriculture; (v) Implementation, Monitoring and Evaluation Division, Ministry of Planning; (vi) Bangladesh Water Development Board; (vii) Ministry of Planning; (viii) Ministry of Land; (ix) Ministry of Shipping; (x) Ministry of Local Government, Rural Development

and Cooperatives and (xi) External Resources Division, Ministry of Planning.¹⁶⁵

On the other hand, the TC will comprise Heads of all the relevant GoB departments, representatives from universities, NGOs and the civil society. The Secretary of the Ministry of Water Resources chairs the TC. The following Ministry/Departments/Agencies that are represented in the SC are: (i) Ministry of Water Resources; (ii) Bangladesh Parjatan (Tourism) Corporation; (iii) Local Government Engineering Department; (iv) Department of Livestock Services; (v) Department of Environment; (vi) National Conservation Strategy Program; (vii) Department of Agricultural Extension; (viii) Bangladesh Shipping Corporation; (ix) Bangladesh University of Engineering and Technology; (x) Bangladesh Agricultural University; (xi) Bangladesh Unnayan Parishad; (xii) Planning Commission; (xiv) Bangladesh Water Development Board; (xv) Department of Public Health Engineering; (xvi) Department of Fisheries; (xvii) Department of Land Records and Surveys; (xviii) Disaster Management Bureau; (xix) Department of Forests; (xx) Bangladesh Agricultural Research Council; (xxi) Association of Development Agencies in Bangladesh (ADAB), (xxii) Bangladesh Navy; (xxiii) Chittagong Chamber of Commerce; (xxiv) Dhaka University and (xxv) Water Resources Planning Organization.¹⁶⁶

Both SC and TC are likely to create enough room for a more diversified institutional structure for the program. In the composition of both, the ubiquitous presence of government is clearly visible. While in case of SC, practically all the National Ministries are the representatives, in case of the TC, various Ministerial departments along with research institutes, NGOs, few

¹⁶⁵ "Coastal Zone", *op.cit.*, p. 2.

¹⁶⁶ *Ibid.*

universities are its representatives. However, in the latter case, the representatives of the World Bank and the Netherlands Embassy have their place as observers. Being donors of the project, they have a leeway in influencing the planning, decision making and implementation process of the governmental apparatus. As the present scenario suggests, the Steering Arrangement is overtly governmental in nature where decisions of the bureaucrats would reign supreme. The approach, therefore, is a bureaucratic top-down approach. It is also anticipated that various levels of government would perform services and operate programs. Each level will be made up of a number of different organizations or institutions, specialized in a particular function or field. It is through these organizational units, consisting of staff, space, facilities, budgets and procedures that government is expected to operate. The challenge, therefore, would be to ensure that the actions with respect to coastal and ocean management at each level of government are harmonized with each other and are consistent with agreed coastal goals and objectives.

At present, the political commitment towards ICZM seems to be high. As the country is equally committed to a wider processes of decentralization and democratization, there is the likelihood of local level attain more importance in the administration. In the context of ICZM, it implies the need to involve all parties of interest and sectors, i.e., fishery, shipping, tourism, navy etc. in the concerned areas. In Bangladesh, among all groups of interest and sectors, perhaps, the most neglected one is the local coastal community whereas they are the ones who as direct resource users of the zone are likely to determine the success or failure of sustainable development. Despite the fact that the present ICZM in its goals and objectives is people oriented, there is little mention about the actual involvement of the community in the ICZM process. As mentioned earlier, while the needs of the coastal

communities are often mentioned in planning and implementing coastal management projects, they are not taken properly into consideration and remain as simply as 'eye wash'.¹⁶⁷ Consequently coastal zone management projects have had only limited success. The PDO-ICZM can not probably overlook this reality.

Another important element in ICZM is the proper identification of management priorities. Coastal zone faces a different set of challenges, in different political and public settings and consequently require a different management focus. In particular, management has to rank the level of priority for some of the issues among which upgrading the status of the coastal community as a formidable stakeholder is now a widely recognized fact. At present, many activities are going on in the coastal zone of Bangladesh and the government does not intend to put a moratorium on the existing pipeline projects. In the process, the main priority of the of the PDO-ICZM, i.e., welfare of the coastal community may remain submerged. "The best measure of the coastal zone's importance to a nation is the quality, quantity and value of resources within the nation's jurisdiction. However, the proper utilization of resources such as mangrove vegetation and inshore fisheries and coral reefs, depends upon the community's understanding of the delicate nature of these resources and the beneficial role of the proposed project in people's daily lives and future welfare".¹⁶⁸ Concern for local level is, therefore, essential in ICZM.

There are certain elements that might pose a challenge for the current ICZM in Bangladesh. While it is true that no central agency has been established to carry forward the ICZM related

167 Golam M. Mathbor, *op. cit.*, p. 137

168 'What Kind of Capacity is Needed for ICM? In "Integrated Coastal Management : An International Priority", *op. cit.*, p. 1.

projects in the country, nonetheless, the special position accorded to the Ministry of Water Resources both in the SC and TC creates room for apprehension about the Ministry's capture of the whole process as the lead agency. As mentioned in the beginning, the Ministry of Water Resources has its own peculiar perspective towards coastal management in terms of such activities as construction of embankments, polders etc. This parochialism may not be acceptable to the other Ministries and Departments involved in the PDO-ICZM. Also, there arises the question of financial capacity of the GoB to carry out the planning and implementation of coastal management efforts. The present issue is with respect to the future role of donors in the current ICZM project. The question arises to what extent the current approach has been driven by the desire of the donors to define fundable projects and the GoB to acquire such projects. Interviews with senior governments officials make clear that they are aware of these tensions and are working to resolve them. The few other aspects of the ICZM that need scrutiny would be: (i) adequacy of laws, decrees and regulations under which the new ICZM would operate; (ii) adequacy of administrative and execution of the program; (iii) adequacy of access to needed expertise (legal, scientific and technical, public administration, economic); (iv) adequacy of available resources (funding, trained staff, facilities); (v) effectiveness of the programs (enforcement, compliance etc) and finally (vi) public participation in the process.

What probably is lacking in the current ICZM is its focus on human factor, in other words, placing the coastal community at the center of all activities. The coastal management entity which is basically central and governmental in nature can not overlook the concerns for local community in an ICZM. Thus, the overall responsibility for the management of coastal and ocean resources should not fall only on national government and its relevant

agencies. The local level can contribute the most detailed understanding of the local coastal zone and its problems, constraints and limitations that will affect the choice of solutions, data and information on the local coastal zone and support of coastal user groups and the community. There is, therefore, the need for a **Two Way Management** involving both national and local levels. Since coastal socio-economic development is multi-sectoral in nature, the building of institutions, administrative and legal instruments should create the scope for shared responsibility in which the local community with their existing and newly acquired knowledge would have a role to play. In other words, there is the imperative for community based participatory coastal management system in today's Bangladesh. The succeeding chapter would be an endeavor to deal with the issue.

Chapter V

Community Based Co-Management System in Coastal Zone – A Missing Link in the ICZM

ICZM, as mentioned earlier, is essentially a governmental process that consists of the administrative, legal and institutional framework necessary to ensure the development of coastal and marine resources in an integrated and holistic fashion.¹⁶⁹ In this respect, the foremost management task is to acknowledge the interrelationship that exists among various coastal and ocean users with conflicting and competing interests.¹⁷⁰ In other words, the analysis of stakeholders' role is an essential ingredient of the ICZM process, and that the list of stakeholders is usually a long one so as to include governmental, non-governmental agencies, private groups, NGOs, donors, civil society, the epistemic community, the coastal community and a number of others. The importance and weight of a particular stakeholder is normally determined by the nature and intensity of its activities in the coastal zone, and by an account of tangible interests derived from such activities by the concerned stakeholder.

169 ICZM refers to a special type of governmental program established for the purpose of conserving coastal resource or environments through control of development. Use of the term implies that the government unit administering the program has distinguished a special coastal zone as a geographic area combining both ocean and terrestrial domains. 'Integrated Coastal Zone Management : Concepts and Issues', *op. cit.*, p. 9

170 Some typical manifestations of conflicts among ocean users as suggested by E. L. Miles involve : (i) competition for ocean or coastal space; (ii) adverse effects of one use, such as oil development on another use, such as fisheries; (iii) adverse effects on ecosystems and (iv) effects on onshore systems such as competition for harbor space. Cited in 'What Triggers the Need the ICM' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 2.

It has been observed that while ICZM launches its multifarious programs and projects for developing the coastal zone, the people inhabiting the region remain in a low profile stature in the labyrinth of stakeholders. This, notwithstanding the fact that coastal community that consists of individuals or groups of individuals is directly involved in all coastal activities for their economic survival, and are linked to the ocean and its adjoining terrestrial environment by a strong oceanic culture. More important, if there is any benefit out of coastal development, it is the local people who should have the first claim over it. Ironically, people who live outside the zone, and yet place high value on aesthetic, touristic and recreational value of the coast are accorded, in the list of stakeholders, a place much more important than that of the coastal community.

The low profile stature of the coastal community as a stakeholder is explained by a number of socio-economic, political factors that vary among different coastal zones. In case of Bangladesh, an analysis of such factors begs no further explanation as it has been taken up for discussion in one of the preceding chapters depicting their deplorable social, economic, political conditions. What is, perhaps, important to take note of by the management is the fact that the unique geographic, economic, and social needs of the coastal community in Bangladesh have virtually been ignored by the centralized bureaucratic system, and that simple lip service has been paid to the needs of the coastal communities in the overall context of mainland development. Even the development in the overall national context had been parochial, taking into account only quantitative growth, whereas its main characteristic, i.e., social development has been quite benignly neglected.¹⁷¹ The latter could not be pursued due to government's

171 Economic Growth is a means to sustainable human development but not an end in itself. Human Development Report 1996 showed that economic

failure in promoting people's empowerment and participation in a democratic and pluralistic manner, and its sheer neglect of human rights and fundamental freedom. This, notwithstanding the fact that Bangladesh is a nascent democratic country, and is passing through a period of transition to experiment the ideology. The result being that the marginalized coastal people have been suffering from the double vulnerability of being poor and uneducated.¹⁷² The need, therefore, is to empower them economically, socially, personally to ensure their participation in coastal zone management projects. The case, however, is not unique in case of Bangladesh only. In Indonesia, for example, despite the considerable efforts of government to redress perceived imbalance in income and various community enterprise and socially safety net innovations, coastal communities lack empowerment. In the context, the relevant questions are: what is empowerment? how is it fostered? and how does it come within the purview of ICZM. An attempt is made in the chapter to address these questions.

Section I

Empowerment of the Coastal Community Through Participation

Before an attempt is made to transpose the two concepts, empowerment and participation, in ICZM, it is relevant to throw few reflections on them briefly. The empowerment as a concept

growth does not automatically lead to sustainable human development and the elimination of poverty. For example, countries that do well when ranked by per capita income often slip down the ladder when ranked by human development index. There, are, moreover marked disparities within countries – rich and poor alike – and these become striking when human development among indigenous peoples and ethnic minorities is evaluated properly.

172 Golam M Mathbor, *op.cit.*, p. 132.

has been defined in several ways. In its most ordinary sense, it connotes the expansion of assets and capabilities of poor people to participate in, negotiate with influence, control, and hold accountable institutions that affect their lives.¹⁷³ Developed in the context of social work and community organization, empowerment is characterized by certain elements like (i) empowerment aims at the improvement of individuals and collective skills to regain control over living and working conditions and their impact on well-being; (ii) empowerment is the aim and the means of community organization; and (ii) empowerment refers to a constant process of enabling individuals and groups to take part in collective action. Empirical observation now leads to a widely held view that participation is the vehicle of empowerment and is a key factor in delivering a sustainable coastal renaissance. It is a process through which people with an interest in an area of topic (stakeholders) contribute to influence and manage efforts. It builds the capacity of and empowers individuals and communities to manage their coastal environments.¹⁷⁴ Community participation is

¹⁷³ Human Development Report 1996.

¹⁷⁴ 'Participation is both an end and a means – an *end* (i.e., by itself a goal of development) because it will lift the marginalized people from being left out to being in partnership, and a *means* because it will enable them to contribute to development in a meaningful manner for their own as well as society's benefit. Differing theoretical postulates exist regarding people's participation. Classical modernization theories from the 1950s and 1960s viewed widespread and active public participation in decision making, and therefore, democracy to be inimical to growth because ordinary people lack knowledge, foresight and imagination. Other suggested that, while limited and institutionally orchestrated participation would serve useful purposes, widespread participation could lead to political breakdown. However, today it is widely held that widespread, effective public participation in decision making and implementation is in fact essential for development'. Qazi Kholiquzzaman Ahmad, Economic Reforms, People's Participation and Development in Bangladesh, Asiatic Society of Bangladesh (Bangladesh Unnayan Parishad), Dhaka, 2000, pp. 29-30.

a key factor in delivering a sustainable coastal renaissance. As the Canadian International Development Agency (CIDA) suggests, 'some major problems in coastal habitats may result from the economic practices of local communities not having alternative sources of livelihoods. Community needs must be taken into consideration in planning and implementing projects which affect them and their resource base. Active participation by the affected community in all stages of a coastal development project will often have tremendous impact on the sustainability of the project and the protection of coastal resources and habitats'.¹⁷⁵ Community participation helps ensure that decisions are sound and all parties will support them. It is facilitated by: (i) conducting consultations where people are; (ii) working with traditional local leaders, and the full range of community groups and organizations; (iii) ensuring that the scope of consultation is appropriate to the decision being made; (iv) limiting the number of management and consultative bodies to which communities have to relate; (v) giving communities and other interested parties adequate, readily intelligible information and enough time to consider it, contribute to proposals themselves and respond to invitations to consult; (vi) ensuring that consultations are in a culturally acceptable form. For example, indigenous people with a tradition of decision making by communal discussion should not be expected to respond with a written submission from one representative. If indigenous consultation mechanisms exist, they should be used, and finally (vii) ensuring that the timing of consultations is right.¹⁷⁶

In the context of ICZM, empowerment of the coastal community implies that actions are to be undertaken at the local level away from the center of power wielders. And if participation

¹⁷⁵ Golam M. Mathbor, *op. cit.*, p. 124.

¹⁷⁶ IUCN/UNEP/WWF Caring for Earth : A Strategy for Sustainable Living, Gland, Switzerland, 1991.

is the means to arrive at any possible empowerment, then the centralized structure is to adopt few classic principles of decentralization like: (i) local authorities should be institutionally separate from central government and assume responsibility for a significant range of local services (primary education, clinics and preventive health services, community development and secondary roads being the most common); (ii) these authorities should have their own funds and budgets and should raise a substantial part of their revenue through local direct taxation; (iii) local authorities should employ their own staff, although in the initial stage the regular civil service staff could be employed temporarily; (iv) the authorities would be governed internally by councils, predominantly composed of popularly elected representatives and finally (vi) government administrators would withdraw from an executive to an advisory and supervisory role in relation to local government.¹⁷⁷

Thus, the coastal community, from a management perspective, occupies a defined position at a level called 'local' which is nearest to the zone and its problems and opportunities. The need, therefore, is to go for a harmonization between the levels – national and local, the former being the vanguard of the whole ICZM process. In other words, local vision needs to be enmeshed with the national one. While such an empowerment may appear to

177 FAO Community Forestry Report states that certain conditions need to be met for a positive impact on forest management. These relate to decentralization like (i) sufficient transfer of authority, in addition to responsibility, from central forestry agencies to local level; (ii) sufficient financial resources and mechanisms for generating revenue locally to accompany the transfer of responsibilities; (iii) adequate administrative and technical capacity for handling new responsibilities; (iv) adequate administrative and technical capacity for handling new responsibilities; (v) reliable accountability mechanism in place, and (vi) a clear definition of what should be transferred and how, as well as to whom.

be an anathema to centrally controlled ICZM process, it has its own *raison d'être* that cannot, probably, be ignored by the national bureaucrats.

Section II

Raison d'être for Integration between National and Local levels

The inclusion of local level in ocean management is, in fact, the order of the day. Contemporary ocean governance means the way ocean affairs are governed not only by governments, but also by local communities, industries, and other concerned parties or stakeholders. The concept also includes national, international, public and private law, as well as custom, tradition and culture and the institutions and the processes created by them. Thus, action with respect to ocean governance is now viewed at three levels – national, regional and international.¹⁷⁸ It is under the national level that local level finds its place. The importance attached to this layer of administration may be justified by several facts, allusion to many of which has already been made earlier. The coastal zone is the area of legitimate concern of every member of the coastal community. The local government and community are likely to be the most concerned and most affected by the ecological and

178 ICM cannot be applied without proper linkages between institutions at all levels: the community, the state, the region and the global that must work together and in harmony at all levels of ocean governance. The whole system must be : (i) comprehensive, comprising the four levels identified; (ii) consistent, having harmonies and corresponding decision making processes; (iii) participatory, i.e., inclusion of all interests, civil society, major groups, socio-economic sectors, local communities and nongovernmental mechanisms in the decision making; (iv) bottom-up, i.e., rules and regulations cannot be imposed from outside or distant authorities. G. Kullenberg, "Integrating Sustainable Development and Security", Draft Paper, presented at IOI Headquarters, Malta, February 2002., p. 7.

economic health and productivity of the coastal zone and most impacted by poor development and/or environmental degradation. Also, in case of an effective development in the area, the local people should be the one to reap its maximum benefits. They are the people who have an interest or stake in the future of the oceans and as well of the lands adjoining it and their participation in the ocean policy formulation and implementation is a necessity. In brief the model of contemporary ocean governance begins with the local community. This is where people are actually involved in marine activities, this is where they are directly exposed to the ravages of nature and the deadly impact of pollution. It is at this level that one sees new forms of cooperation and organization emerging. These new forms are adumbrated in the Bruntland Report (1988) and spelled out in Agenda 21 (Chapter 17) of Rio Summit (1992) and in various post-Rio arrangements.¹⁷⁹

For management, more practical arguments in favor of a linkage between the national and local levels can be cited by taking into account certain viewpoints of Cicin-Sain and Knecht. *Firstly*, responsibility for the management of coastal and marine resources should not fall only on the level of government. In most countries, national, provincial and local governments have some form of jurisdiction or management control over coastal lands and water. It is, therefore, essential to reach an understanding of the relative roles of these various levels.¹⁸⁰ In the context of Bangladesh, this split up is little complex as the administrative system is unitary in nature with no provinces or federations. *Secondly*, national and local governments may sometimes be in conflict over ICZM on the

179 Elisabeth Mann Borgese, "The Philosophy of Ocean Governance", Reading for the Course "Politics of the Sea II" for Graduate Students at Dalhousie University.

180 'What Kinds of Institutions Carry Out ICM' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 3.

question of responsibilities, legal authorities and priorities etc. The linkage provides an opportunity to respond to such anomalies, in particular, with cooperation from the national level that holds command over resources and technology.¹⁸¹ *Thirdly*, the linkage may erode away doubt and suspicion of the local government towards the national government with respect to issues like shifting of power and authority, proper power sharing etc. Moreover, the local level remains assured about not being overburdened with costs, and certain about benefits out of development.¹⁸² *Fourthly*, the linkage also provides national government some sort of assurance of not being resisted by the local level in various development efforts as consensus, in whatever form it may be, develops between the two.¹⁸³ *Fifthly*, each level of government brings unique expertise and perspectives to the ICZM process. As mentioned earlier, the local level can contribute the most detailed understanding of the local coastal zone and its problems, constraints and limitations that will affect the choice of solutions, data and information on the local coastal zone, and support of coastal user groups and the community.¹⁸⁴ *Finally*, in case the ICZM attains a trans-boundary dimension, the national government, with the advice of local governments and affected stakeholders formulates and legislates broad coastal policies and goals for the nation, and the local government develops plans and actions for their coastal zones that are consistent with and incorporate these national coastal policies. The local government then operates a regulatory system consistent with its coastal plan.

181 *Ibid.*

182 *Ibid.*

183 *Ibid.*

184 *Ibid.*, pp. 3-4.

Section III

Incorporation of CBCM in ICZM

The empowerment of local coastal community through participation at the local level implies civic-democratic involvement in ocean management, or, in other words, a consistent, coherent and participatory bottom-up administration. If the linkage between the national and local levels is deemed necessary for an effective ICZM, then its materialization can probably be possible through community based co-management or community based participatory management which so long has been the missing point in ICZM. While the traditional vanguard of ICZM, i.e., the national level, may find in such management strategy a threat to its centralized bureaucratic system with vested interests, the fact remains that CBCM or CBPM is a strategy not to supplant but to complement the ICZM process. Also, the fact that CBCM deals with common property resources finds its relevance in case of marine resources as they are common property too involving public or societal interests.

It is not the purpose of the paper to go into a detailed theoretical discussion on CBCM. The concept defies any precise definition. Nonetheless, the one furnished by Berkes, Pollnace, MccConney and Pomeroy in the context of fishery is applicable in the co-management of other common property resources as well. To them, 'fisheries co-management is a partnership in which the government, the community of local resource users (fishers), external agents (non-governmental organizations, academic, and research institutions), and other fisheries and coastal resource stakeholders (boat owners, fish traders, money lenders, tourism establishments etc.) share the responsibility and authority for making decisions

about the management of a fishery'.¹⁸⁵ Co-Management may, thus, be considered as a collective and participatory process of regulatory decision making among representatives or user groups, government and research institutions. The aim is to reduce the size and role of government control in order to increase efficiency of services as well as to promote pluralism, democracy and public participation. In such system, rules and regulations cannot be imposed from outside or distant authorities.¹⁸⁶

Coastal management along the line of CBCM would, thus, be what is called community based coastal management (CBCM) – a current global trend for fostering coastal stewardship. While CBCM is growing in various parts of the world in view of the need to

185 Cited in Berkes, F., Mahon, R., McConney, P., Pollnac, R. and Robert Pomeroy, "Co-Management and Community Based Management" in *Managing Small Scale Fisheries: Alternative Directions and Methods*, Ottawa, IDRC, 2001, p. 20.

186 National Round Table on the Environment and the Economy, *Sustainable Strategies for Oceans* gives few aspects of co-management like: (i) an institutional arrangement in which responsibility for resource management, conservation and/or economic development is shared between governments and user groups; (ii) management systems in which users and other interests take an active part in designing, implementing and enforcing management regulations; (iii) a sharing of decision making between government agencies and community based stakeholders; (iv) management decisions (policy) based on shared information, on consultations with stakeholders, and on their participation; (v) the integration of local level and state level systems and/or; (vi) institutional arrangements in which governments and other parties, such as Aboriginal entities, local community groups, or industry sectors enter into formal agreements specifying their respective rights, powers and obligations with reference to, for example, environmental conservation and resource development. Source: National Round Table on "Environment and the Economy, Sustainable Strategies for Oceans: A Co-Management Guide", 1998, Ottawa. Cited in Elisabeth Mann Borgese, The Oceanic Circle : Governing The Seas As A Global Resource, UN University Press, New York, 1998, p. 138.

harness coastal resources for food and livelihoods, it is hard to predict at the moment its actual operationalization in a country like Bangladesh. However, the Coastcare in Australia can, perhaps, provide an example showing the involvement of coastal community in coastal management and decision making. In particular, the objectives for which the program was launched can have its illustrious effects on Bangladesh as well. The stated objectives of Coastcare that attempt to cover the various stages of the management cycle are: (i) to engender in local communities a sense of stewardship for coastal areas; (ii) to provide opportunities and resources for interest groups, business and residents to participate in coastal management; (iii) to support community identification of natural and cultural heritage resources and (iv) to facilitate interaction between the community and groups with responsibility for managing coastal areas.

While a number of well documented theoretical advantages of CBCM can be cited to justify it as an adjunct to ICZM in Bangladesh, the important point to take into consideration would be the current realities in the country. In particular, since in Bangladesh, the current ICZM is likely to be activated by the parties, the most significant among which are the government, the donors and NGOs and the coastal community, it is relevant to look into the current position of each of them in the country's polity. This has implications for the current ICZM program, and the management has to take cognizance of this fact. In the first place, the role of government at the national level should weigh heavy in management calculation. As has been indicated earlier, the current PDO-ICZM has been structured in a manner that reflects overt centralization and bureaucratic domination. In a country where democratic traditions and institutions have not found their deep root till to date, and that political instability remains a recurring phenomenon, the government in power wields power in all spheres

of national life. Thus, one observes in case of fisheries co-management, there is the total government strategy in few cases to dominate the management in the name of co-management. The government dominated strategy is as well marked by frequent conflicts between the government and the NGOs, thereby creating a hindrance on the way of an evolving local leadership. In case of a coastal management, the resources in the area constitute a 'common property' to which access by the government cannot be infringed upon. Moreover, as mentioned earlier, management of practically all the important resources of the zone, i.e., forestry, fishing, tourism etc. remain under the exclusive domain of the governmental authority and this cannot suddenly be in the hands of those outside the government. Also, the future exploitation of resources and the control of income therefrom would, in all likelihood, be under the control of the government. The government's importance is also enhanced by its capacity to provide legislation and its possession of legitimate rights to organize, make and enforce institutional arrangements at all levels. Given the fact that the SC that consists of a number of Ministries whose activities would pertain to coastal development, there would be the need to create new institutions and organizations depending on needs and circumstances. In the ultimate analysis, the government or the national level will remain as the provider of education, technical assistance and funding to create new institutions and subsequently implement programs through them.

Then comes the role of NGO and donors. As indicated earlier, the PDO-ICZM is a donor sponsored enterprise, and the presence of donors in any development project has different implications for the country. The TC where the donors are represented have formidable power and capacity to offset the decision and plans of the SC and even stop the implementation of a particular project if it is to their disliking. The situation, in effect, is to be understood in the context

of importance that NGOs have acquired in Bangladesh's polity in recent years. These bodies have become powerful in the country with the ability to influence many of the government agencies. The government's vulnerability to the NGOs stems from its dependence on aid and the donors who choose the NGOs for implementing the development projects.

Next comes the community factor. If looked from a larger perspective, it should be noted that despite poverty and other problems, the common masses in Bangladesh are becoming increasingly conscious about politics, economic and environment etc. To a large extent, this is attributable to the works of different NGOs in providing education, creating awareness, disseminating ideas human rights, women rights etc. This is, however, a mainland phenomenon, and the coastal community remains detached from this new enlightenment. The crux of the problem is, therefore, the empowerment of the coastal community as a formidable stakeholder in the region. While uplifting people or alleviating poverty may follow the principles of sustainable human development being followed at the national level by the GoB in collaboration with various international donors, in particular, the UNDP, like empowerment, cooperation, equity, sustainability etc., in the coastal zone, it would be expected to attain a dimension still more complex. As mentioned earlier, the empowerment of the coastal community is to be understood in a broader sense to include their economic, social, political, cultural, educational, psychological upliftment so as to turn them into a powerful stakeholder in their area with sufficient bargaining capability vis-à-vis the other stakeholders interested in the area and its resources. As ICZM envisages participation of all stakeholders in an integrated fashion, the coastal community can play the role only when they are recognized as an effective regional force. Thus, if the government's Tourism Office intends to develop tourism in the area, then the coastal community can be mobilized to

make it a 'community based tourism' with due consideration not only to the market interests of the project originator, but as well to the conservation of local environment and to the creation of local opportunities. Also, in case of any future oil drilling activities either in the inshore or offshore areas of the coastal region, the empowered local community can bargain with the outsiders in safeguarding their traditional interests in the region. If ICZM advocates equity, then the empowered people can also claim a share of the benefits that are being accrued from certain activities mentioned above or the benefits likely to be generated in the region in the future. Benefits to the local community may not necessarily be only monetary/financial in nature. The local people, endowed with local knowledge, should be recognized and be enrolled as potential participants in the development projects.

Thus, the three poles having significant positions respectively in today's Bangladesh, can possibly co-exist in coastal management once it reaches co-management. 'If co-management is an institutional arrangement in which the responsibility for resource management, conservation and economic development is shared between government and resource users in a balanced way',¹⁸⁷ then a future community based coastal management in Bangladesh would, in all likelihood, be more effective in tackling the various issues pertaining to coastal development. Another important factor to justify co-management in case of the coastal zone is the very principle of co-management in accepting informal sector as one of the stakeholders. In the coastal zone of Bangladesh, there are the people who kill marine turtles and steal their eggs for livelihood. Then, there are the people who steal wood from the forests and go out to the sea for catching fishes at high risks. Also, women and children work in different projects at minimum wages, in particular,

187 Elisabeth Mann Borgese, The Oceanic Circle : Governing the Seas As A Global Resource, op. cit., p. 93.

in shrimp cultivation. Sometimes the children who work are too young and the women employed are underpaid. Such irregularities are tantamount to violation of human rights. A pressing question like this can only be addressed once all the partners are in a better understanding to take up the issue. Next, co-management in coastal development gets its high credence in Bangladesh due to its ability to act as a conflict resolution mechanism. In all likelihood, the generation of resources out of the untapped potentialities in the coastal zone would create a new brand of stakeholders with conflicting claims over the new wealth in the region. In a country like Bangladesh, abysmal poverty, limited resources, rampant corruption and a number of social problems on the one hand, and population pressure on the other, create a resource-population imbalance thereby creating fertile ground for conflicts. In this respect, the participatory process facilitated by the system is a positive step towards conflict resolution. Perhaps, there is no denying the fact that in case of fisheries management in Bangladesh, the conflicts between the government and the NGOs or between the NGOs and the local community are still prevalent because of the defective nature of participation.

While the imperatives for co-management in case of coastal development are justified by the above arguments, the arduous task would be to set the conditions in proper place at the levels – both national and local. Setting all such conditions need enormous efforts towards resource management, community and economic development, capacity building, institution building, and developing appropriate mechanisms for implementation of policies and strategies. The final chapter of the paper is an endeavor in the direction to suggest the steps that can be taken to incorporate community based co-management in the ICZM process within the framework of Two Track Management as mentioned earlier.

Chapter VI

The New Management Approach: Future Strategies, Opportunities and Challenges

Larry Hilderbrand remarks, "After almost 40 years of ICM efforts around the world, the practice has developed a reasonably good understanding of the approaches, key principles and guidelines, frameworks and techniques for organizing and implementing programs, and it is beginning to benefit - to a degree - from collective experience. However, ICM is faced with a rather extensive list of challenges that must be overcome if ICM, as a distinct form of environmental planning and management is to produce desired outcomes that are essential to our coastal zones".¹⁸⁸ The rationale behind the remark is explained by a number of constraints that most of the coastal states normally encounter in defining and implementing a national program for ICZM. The constraints are found at both national and local levels and include: (i) limited understanding of and experience in integrated coastal zone management; (ii) limited understanding of coastal and marine resources, processes and opportunities; (iii) fragmented institutional arrangements; (iv) single-sector oriented bureaucracies; (v) competing interests and lack of priorities; (vi) inadequate legislation and/or lack of enforcement; (vii) lack of knowledge of land tenure regimes and other social factors and (viii) lack of information and resources (funds, trained personnel, relevant technologies, equipment etc.¹⁸⁹

In order to face some of the constraints mentioned above, the efforts undertaken in various coastal states for ICZM are not identical. This is due to the variation in the capacities among the

188 Larry Hilderbrand, *op. cit.*, p. 5.

189 John R. Clark, *op. cit.*, p. 117

coastal states. While in some cases, there are large and well funded institutions with well defined legal and regulatory mandates and capacities for carrying on ICZM programs, in few other cases, the arrangements to deal with ICZM are informal or consensual with a much lower capacity to directly achieve the objectives.¹⁹⁰ Judged in this light, Bangladesh would no doubt fall in the second category where the ICZM program at present is in its nascent stage, and in a period of transition. The program being funded by the donors and with a management structure that exists in a mere 'Steering Arrangement', and still more, the experience that it has gained during the short span of time, do not really give one a scope to assess its achievements, strengths and weaknesses.

However, it would not be wrong to state that constraints and weaknesses for Bangladesh exist at both levels – national and local. While at the national level, there is the lacuna in administrative, legal and enforcement measures, at the local level, the scenario is still worst where the administration till to date remains significantly neglected by the central authority. This, in other words, means a corresponding neglect towards the coastal community. In the circumstances, the new management approach would not only be to develop national capacities for taking the responsibility of the coastal zone but as well to render efforts towards converting the long neglected coastal community into a meaningful stakeholder in the ICZM process with due human consideration. The chapter is an endeavor to deal with few suggested plans, strategies and actions to be realized under the new ICZM policy in Bangladesh.

¹⁹⁰ Larry Hilderbrand, *op. cit.*, p. 5.

Section 1

Capacity Building At National Level

Coming to the question of building capacity at the national level, the first point to take into consideration would be to identify the gaps in the knowledge, education and skills of the persons who are likely to be involved in an interdisciplinary task as is ICZM. Towards this end, as a short term immediate strategy, capacity building of the bureaucrats and resource managers becomes the foremost imperative so as to enable them to (i) assess the pitfalls in existing mechanisms of the governmental departments/agencies relevant to coastal zone development; (ii) acquire knowledge for building a constructive linkage between the departments likely to be involved in coastal zone issues; (iii) learn to cooperate with various private agencies, research organizations, universities, the epistemic community, the NGOs etc. (iv) be ready to accommodate changes with respect to rules and regulations related to nature and resource management of the coastal zone. In this respect, a great deal of training and education of a new and genuinely interdisciplinary type is required to make the ICZM program successful in the future. In fact, a new type of civil servant is required in the management of ocean affairs in the country so that the new pool of persons may not necessarily be specialized in any particular sector of this or that governmental department, but at home in both the natural and the social science and in all major uses of the seas and oceans.¹⁹¹ Such persons must be on the staff of every one of the ministries and departments involved, to make inter-ministerial cooperation effective so much needed in case of ocean management in an integrated fashion. Perhaps, there is no gainsaying in stating that due to the low profile status of marine affairs in the country's overall national policy, persons conversant with the dynamics of marine

191 Elisabeth Mann Borgese talks about the idea in the chapter, 'Ocean Perspectives : Institution' in her book , The Oceanic Circle : Governing the Seas As A Global Resource, op. cit., pp. 143-144.

life, its biodiversity and ecology and the proper utilization of its resources are rare.

Next, capacity building in Bangladesh for its ICZM program would involve institutional building. In view of the fact that a number of governmental departments are involved in the current ICZM in Bangladesh, each with its different goals, objectives, policies, mandates and laws, the arduous task would be to devise institutional or procedural mechanisms that can coordinate myriad organizations and agencies. Successful institutional arrangements may hopefully establish the following conditions: (i) common goals and objectives; (ii) binding regulations governing allocation and use; (iii) a mechanism for dispute resolution; (iv) a governing or oversight body; (v) a network for continuous data and information exchange; (v) a delivery mechanism for joint programs.¹⁹² With respect to institution building, the most critical point, perhaps, is the establishment of a mechanism for ensuring that all shared interests are represented and that all concerns are integrated. In this connection, the setting up of a central agency would inevitably be a positive step in the direction. The proposition for a separate department/agency is made in view of the fact that due to financial and other administrative and legal constraints, a separate Ministry for Ocean Affairs at present may not be a practical proposition in Bangladesh. A separate department for ocean affairs should not be placed in any particular Ministry, rather representatives from all other Ministries relevant to ocean management should constitute such a body. As mentioned earlier, in Bangladesh the administrative culture is not supportive of a central agency/body. The rigid bureaucratic mentality of such kind, thus, should be given up in favor of a central mechanism with the following attributes:

192 'What Kind of Institutions Carry Out ICM' in "Integrated Coastal Management : An International Priority", *op. cit.*, p. 2.

- It must be authoritative and have appropriate legal/legislative authority.
- It must be able to affect the activities of all agencies and levels of government that have decision making authority relative to the coastal zone.
- It must be seen as a legitimate and appropriate part of the process.
- It must be capable of making 'informed' decisions, that is, it must have access to appropriate scientific and technical expertise and data.¹⁹³

It is very difficult to predict the institutional arrangements that Bangladesh would make in the future with respect to coastal management, nonetheless, the framework for such arrangement must be comprehensive, consistent, tran-sectoral and multi-disciplinary and participatory – bottom-up and not top down one.

A very crucial element with respect to the setting up of a central agency is the formulation of a national ocean policy. Bangladesh should be bold enough to come out with a national ocean policy, and thereby make a breakthrough in its ocean management. Unless such a policy is formulated, marine vocation or vision, whether domestic or international can not be achieved.¹⁹⁴ Also, in the absence of such a policy, major coastal and ocean development issues and sectors and the priorities in the domain cannot be identified. In this respect, if not the ocean policies of other coastal states, at least, that of India, Bangladesh's next door

¹⁹³ *Ibid.*

¹⁹⁴ Ideas expressed by Dr. Aldo Chircop (Associate Professor at the Faculty of Law, Dalhousie University, Halifax, Canada) in one of the classes (fall 2001) on the course, Contemporary Issues in Ocean Management and Governance, for the Master of Marine Management students.

neighbor, can be an inspiring factor.¹⁹⁵ The formulation of a national ocean policy would eventually facilitate the formulation of a Coastal Act for the country absent at present. The Act that would be a guideline for the management of entire coastal affairs may ultimately pave the way for a separate central ocean agency towards which the apathy of the country's bureaucracy is well known to all.

Capacity building for Bangladesh also necessitates an inter-agency coordination and this is achievable only when a clear understanding of the philosophy of integration by all relevant quarters is well understood, in particular, by the reluctant bureaucrats. A FAO Study in 1992 comments as follows, "coastal resources conservation and bio-diversity preservation are more often restrained by political uncertainty and bureaucratic inertia than by a shortage of scientific information".¹⁹⁶ A full fledged integration can only fructify when interagency coordination is guaranteed. Given the various issues involved in coastal development like marine fisheries, coastal agriculture and livestock, coastal afforestation, coastal environment and bio-diversity, climatic change, conservation strategies, coastal water management, land issues, coastal tourism and a host of others, there is the need for increased inter-agency coordination and support for resolving conflicts that may arise out of the strategies and actions of the various departments with respect to the area. As a result, all departments, sectors and agencies should be united to face the multiple impacts of their future activities in the coastal zone. The challenge for the management is, therefore, to ensure a harmonization of the actions of the coastal and ocean institutions at

195 See for details, 'Ocean Policy Statement', Department of Ocean Development, Government of India, p.5.

196 "Integrated Coastal Zone Management : Concepts and Issues", *op. cit.*, p. 15.

each level of governance and maintain consistency in the agreed coastal goals and objectives.

While it is true that inter-departmental cooperation is not expected to take place overnight, what is, perhaps, needed at the moment is the change in the mental make-up of the bureaucrats occupying such departments at the center. The bureaucrats must give due recognition to the fact that 'the problems of the ocean space are closely inter-related and must be considered as a whole'.¹⁹⁷ Such recognition has significant institutional implications for horizontal and vertical integration involving the national and local levels. Notwithstanding the fact that ICM institutions are not created equal and that they vary among coastal nations with respect to their regulatory mandates, capacities, financial strengths etc., the moot point is the need to create institutions in order to harmonize the activities and programs that affect the coastal area and its resources. The need for interagency cooperation is, therefore, indispensable and the bureaucrats can no longer ignore this reality. It may be mentioned that 'a chronic problem in Bangladesh, at times 'killing worthwhile projects/programs/policies is the lack of coordination and cooperation among different ministries. It is also known that large proportions of multilateral and bilateral technical assistance funds (grants) are not utilized, often because of inter-ministerial or inter-personality (bureaucratic, political) wrangling as well as bureaucratic procrastination. These problems must be resolved in

197 The Law of the Sea states, in its Preamble that 'the problems of oceans are closely interrelated and need to be considered as whole'. It is on this idea that Agenda 21 stresses chapter after chapter, section after section, the need for interdisciplinary planning and decisions making and for integration of national, regional and global policies. Elisabeth Mann Borgese, Ocean Governance and the United Nations, op. cit., p. 151.

the national interest, indeed, an effective government cannot be established without removing these bottlenecks'.¹⁹⁸

Very intricately related to capacity building for ICZM is the financial capacity to sustain it. While, the case of ICZM in Bangladesh amply demonstrates its reliance on foreign funds, caution is to be guarded with respect to over reliance on foreign assistance and donation of the donors. Efforts should be rendered for creating funds and revenues from local sources. It is relevant here to mention that many foreign assistance and programs or projects do not build adequate local capacity to sustain the program. Also, it has been empirically, observed that when donor assistance decreased or was withdrawn, the foreign consultants left the country thereby leaving the local ICZM workers in an awkward situation. Such an eventuality should be avoided, and Bangladesh should get rid of the dependence syndrome on the outside donors.¹⁹⁹

Capacity building at the national level also relates to legal capacity. It is the governmental apparatus at the center that possesses the capacity to legislate, regulate and achieve

198 Qazi Kholiquzzaman Ahmad, *op. cit.*, pp. 28-29.

199 There are few successful self-sustaining ICM efforts in developing nations, particularly after international assistance is phased down or terminated. One true test of the worth of an ICM effort is the willingness of government units (national/state/provincial, regional and local) to fund the program if and when external assistance funds are terminated or phased out'. Larry Hilderbrand, *op. cit.*, p. 9. In a poverty ridden country like Bangladesh, funding for projects that remain away from the gravity of few pressing current issues like poverty, unemployment, shortage of food, social and economic stresses etc., funding from national sources may pose a problem in the future. The need, therefore, is to generate internal sources of revenue, instead of depending on the donors' fund. Some of the internal sources may be user charge, polluter charge, local taxes, national taxes, private sector borrowing etc.

compliance. In an extensive ICZM program where management of fisheries activities, protection of sensitive habitats, safeguarding the interests of the coastal community, implementation of sustainable development projects etc. are involved, there is the management need for adequate laws, decrees and regulations for guiding such activities. In the context of Bangladesh, it is observed that (i) each department is not sufficiently backed by a legal framework to guide its activities. For example, most of the rules related to nature and resource conservation are outdated and need to be revised like protection measures for marine life in Wildlife Act, protection measures for waste treatment facilities and others. In particular, there is the urgent need to identify appropriate practical legal mechanisms to give effect to environmental protection of the coastal areas. Next, the involvement of a number of departments in the ICZM process entails the creation of interdepartmental agreements and programs to avoid jurisdictional conflict. For example, many fisheries legislation like Fisheries Protection and Conservation Act of 1950 (latest amendments in 1995), Marine Fisheries Ordinance (1983), Fish and Fish Product Rules 1997 (Inspection and Quality) may contradict many of the provisions enshrined in the country's environmental acts. Lastly, it should be borne in mind that the ICZM project in Bangladesh reflects its commitment to the South Asian Regional Seas Program. In such an endeavor, where attention is now being focused on land based sources of pollution, the adoption of GPA (Global Program of Action) would imply that many of the international legal arrangements would be required to be incorporated into the municipal laws of the country. Mere setting of legislation is not an end in itself. Legislation would only be useful and meaningful if proper mechanisms of compliance are ensured. In this regard, appropriate agreements and instruments are to be made for achieving compliance. Lack of coordination between the relevant agencies that in the past was a factor contributing to poor

enforcement should be overcome. The need, therefore, is to establish a completely transparent and accountable enforcement mechanism to ensure and institutionalize a corruption free regime

It should be mentioned that Bangladesh's governance capacity is not constrained by an internal problem like in many countries like rift among the religions groups, ethnic conflict, civil unrest etc. The country possesses the potentialities for building capacity for all purposes of development. The responsibility at the national level would, therefore, be to harness such opportunities in order to establish a type of governance marked by transparency, accountability and absence of corruption at all levels of the society.

Section II

Capacity Building At Local Level

More than at national level, capacity building at the local level would be a monumental task for the policy makers of Bangladesh. In particular, capacity building at the level of the coastal zone would be a difficult task as the area and its resource systems are, from the management point of view, increasingly complex because of the degree of shared jurisdiction and the amount of common property resources involved. ICZM activities, therefore, need to involve all levels from national to village governments in the management process. In other words, the program requires the highest level of public participation of those who live along the coast and have traditionally used coastal resources, and who may be greatly affected by new rules and procedures. Needless to mention that a participatory process would only be possible once a democratic structure at the local level is established, and made effective in terms of authority, working and finances. The relevant issue, therefore, is one of decentralization of the entire governance structure of the country in general.

Looking at the current ICZM in Bangladesh, one would notice that despite the promise of community participation in the program, no where there is the mention about the decentralization of authority. The aberration is explained by the fact that the country till to date lacks in sincere efforts towards a decentralized administration. Since the emergence of Bangladesh, different forms of decentralization measures have been undertaken to empower the local government, but all have met with utter failure. 'Never has political power been appropriately devolved to the local government system, nor has its access to adequate financial resources been ensured by allocating to it an appropriate share of the central government's annual budget. Scope of raising resources locally has remained rather limited; it would have expanded had the local economic growth accelerated sufficiently, but that has not happened'.²⁰⁰ As a result, in Bangladesh local government and other decentralized and participatory institutions have not been developed as relatively self-governing autonomous peoples' institutions, but rather as dependent territories. Hence, one of the explicit objectives of decentralization is to reduce the political, administrative and financial dependence of local government on national governments and foster local self-sufficiency in every respect.²⁰¹ Under the circumstances, the relevant question is : how

200 Qazi Kholiquzzaman Ahmad and Ahsan Ahmed (ed.), Bangladesh : Citizen's Perspectives on Sustainable Development, Bangladesh Unnayan Parishad (BUP), Dhaka, 2002, p. 20

201 Anwar Pasha, 'Mobilizing Local Resources for Local Development', Paper presented at the Seminar on Young Scholar's Seminar on 'Local Government and Resource Mobilization for Local Development', at Bangladesh Institute of International and Strategic Studies (BIISS), 24 September 2001. Remaining dependent on the central government, both structurally and financially, the local government institutions have always acted as the local agents of the central government. The concept of local self-government (i.e. a local government with appropriate developed authority, a high level of autonomy in its functioning, and assured access to

would the coastal community develop itself as a self-governing entity within a centralized administration that consists of several departments headed by bureaucrats with narrowly focused mandates and lack of coordination among them?. In particular, can co-management that requires the central government to be clearly committed to sharing power with local government and organizations, flourish in Bangladesh coastal management where a centrally dominated administration is in existence?

Assuming that the overall decentralization of the country's governance would take time to get materialized, in case of coastal management where the government needs to incorporate co-management urgently, decentralization can be operationalized in the following way: (1) De-concentration : the transfer of authority and responsibility from the national government departments and agencies to local offices (district or thana levels); (2) Delegation : passing of some authority and decision making powers to local officials. The central government retains the right to overturn local decisions and can, at any time take these powers back; (3) Devolution : the transfer of power and responsibility for the performance of specified functions from the national to the local government without reference back to central government. The nature of transfer is political (by legislation), in contrast to de-concentration's administrative transfer, the approach is territorial or geographical rather than sectoral; and (4) Privatization : the transfer of responsibility for certain governmental functions to NGOs, voluntary organizations, community associations, and private enterprises.²⁰²

a reasonable amount of resources) has never been considered seriously in Bangladesh. Qazi Kholiquaaman Ahmad and Ahsan Ahmad, *op. cit.*, p. 20.

202 The idea is taken from the decentralizations measures in case of co-management in fisheries as suggested by Pomeroy and Berkes . See for details, Berkes. F Mahan, R. McConney, P. Pollnac and Robert Pomeroy, *op. cit.*, pp. 24-26.

It is important to note that decentralization along the above line would facilitate a multi-tiered co-management where national control of resources is maintained but participation of local community is maximized. The system recognizes the competing vested interests of all and establishes a proper coordination between the local and national levels as a necessary prelude to the empowerment of the local people. It would expand the political space of the coastal community within which they would be required to undertake various sustainable development programs for efficient and equitable growth. In the final analysis, co-management in a decentralized system as proposed should be backed by adequate administrative and policy structures that define the legal status, rights and authorities essential for the effective performance of local organizations.

However, in all likelihood, the administrative system of Bangladesh would not consider the local coastal community fit, effective and skilled enough to take many of the coastal development responsibilities that would evolve out of decentralization. As a result, the process of decentralization may become a victim of bureaucratic procrastination, and its materialization may be delayed. Under the circumstances, the utmost need is to build the capacity of the coastal community. In this respect, 'capacity building should be understood as the approach to community development that raises people's knowledge, awareness and skills to use their own capacity and that from available support systems, to resolve the more underlying causes of mal-development, capacity building helps them better understand the decision making process, to communicate more effectively at different levels, and to take decisions, eventually instilling in them a sense of confidence to manage their own destinies. Capacity building strengthens the Assessment-Analysis-

Action process in the community and, therefore, leads to more sustainability'.²⁰³

Capacity building is a time consuming process, nonetheless, its success depends much on the philosophy on which it is based and the actors involved in accomplishing the task. In Bangladesh context, the endeavor should first be taken by the national government with all the resources at its command, while the NGOs, the universities, research institutions, the epistemic community, civil society, etc. would come in the process as 'helping hand'. In such a scenario, a triangular structure is envisaged with government, the non-government bodies, and the coastal community remaining at three distinct points of the structure. As far as the epistemic community is concerned, there is the need to develop it soon. There is no gainsaying in stating that due to the lack of coastal forums, coastal and marine research institutes such a community is yet to develop in the country. Knowledge in marine science and technology is to be considered as an essential input to the decision making process for ICZM and its model building. More important, perhaps, is the understanding of objective behind the whole scheme of capacity building. The government, in particular, should know: why should it build the capacity of the coastal community that so long remained neglected in its development program? The whole idea is to experiment local stewardship in the coastal zone – an idea based on a great philosophy. It recognizes human being not as "owner" but as "steward" of earthly goods which he/she has the right and the duty to manage in accordance with commonly agreed standards and with due consideration of the interests of the community as a

203 Claudio Schuftan, 'The Community Development Dilemma: What is Really Empowering', *Community Development Journal*, Volume 31, No. 3, July 1996, p. 201.

whole, and in particular, the poorer members of the community.²⁰⁴ This would imply that the coastal community should be educated, empowered and informed in a manner so as to make them the managers and custodians of their resources and environment. This, would eventually motivate the coastal community to participate in decision making in order to improve and reverse the wastage of coastal resources. More important, once local stewardship is guaranteed, it would foster an attitude among the coastal community marked by commitment, willingness and sincere efforts to ensure the sound and sustainable use of coastal resources.

The foregoing discussion leads us to a point where the current integrated coastal zone management in Bangladesh with the concern for the coastal community at its center cannot, probably, overlook the following recommended actions:

- Identifying the problems, needs and opportunities of the coastal community.
- Enhance the knowledge of the coastal community on sustainable development of coastal resources in order to avoid wastage of resources.
- Institutional capacity building at national and local levels for coastal stewardship.
- Necessary legal and institutional reforms for local government.
- The involvement of local bodies in planning and implementing coastal development projects with the focus on 'poverty alleviation'.
- The constitutional protection of local authority.

204 Elisabeth Mann Borgese, Ocean Governance and the United Nations, *op. cit.*, p. 172.

- The need for social mobilization in order to make people conscious about their duty and responsibility with respect to coastal management and development.
- Recognition to local knowledge and expertise.
- Building and empowering local leadership.
- Empowerment of women through training, specific responsibilities and appropriate facilities.
- Reviewing all protocols, conventions, laws and ordinances concerning coastal management from local level perspectives.
- Proper enforcement measures.
- Eradication of rampant corruption.²⁰⁵

It should be mentioned that ICZM is a continuous process for which there is no blueprint but rather a variety of arrangements to suit a specific context. Given the fact that ICZM is a development strategy that differs from the traditional form of development in many ways, it is now a new management test case for a country like Bangladesh. Despite the absence of many prerequisites for such an expensive project at present, success can still be achieved if there is a political will to incorporate at least few minimum requirements as suggested above in the management plan, notwithstanding the fact that the process may consume time, money and energy from the national level. In particular, there should, under no circumstances, be a deviation from the stated goals and objectives for which the program of ICZM was launched in the country. The realization of the stated goals would depend on

²⁰⁵ Today in Bangladesh, corruption has become an all pervasive phenomenon involving people from the ranks of the high and mighty in various kinds of corruption. It runs through the whole governance process – police, bureaucracy, judiciary, political parties and the rest of it. See for all interesting details of corruption, Qazi Kholiquzzaman Ahmad and Ahsan Uddin Ahmad, *op. cit.*, pp. 29-35.

the success of Bangladesh government in approaching and establishing grass root links and evolving a process for incorporating the wishes and aspirations of the coastal community. The management should well recognize that *raison d'être* of all policies, strategies, actions with respect to integrated coastal zone management would, in all likelihood, lose its ground once 'concern for the coastal community' remains in its oblivion.

Conclusion

If the present ICZM in Bangladesh aims to eliminate various kinds of threats to the coastal zone, and reap the myriad opportunities to be provided by the zone, then the management has to give its top most priority to the community which remains the direct victim of all existing threats, and as well the rightful claimer of all the opportunities. In the scale of priorities, therefore, a comprehensive empowerment (political, economic, social and cultural) of the coastal community should gain its prominence. As mentioned earlier, it is participation that generates empowerment. In Bangladesh, however, people's participation in defining the parameters and strategies for development is a chimera for reasons like state power, self-interests of the private groups, the dictates of the donors etc. Thus, applying the principle of co-management in case of Bangladesh's ICZM is the only rational approach at the moment to guarantee people's participation in the project. How and when the present PDO-ICZM would incorporate the principle is simply a matter of speculation. Nonetheless, the Government Policy Note by stressing on coastal community's concern has at least created the base from which the idea of co-management can be catapulted in the future. Meanwhile, the PDO-ICZM has by now adopted a strategy that talks about approaches and procedures for the development of 'an enabling institutional environment'. The focus is 'on the creation of an environment which supports

local communities in improving their livelihood conditions'.²⁰⁶ It is expected that several steps like this would be forthcoming in the near future in order to make ICZM more people oriented.

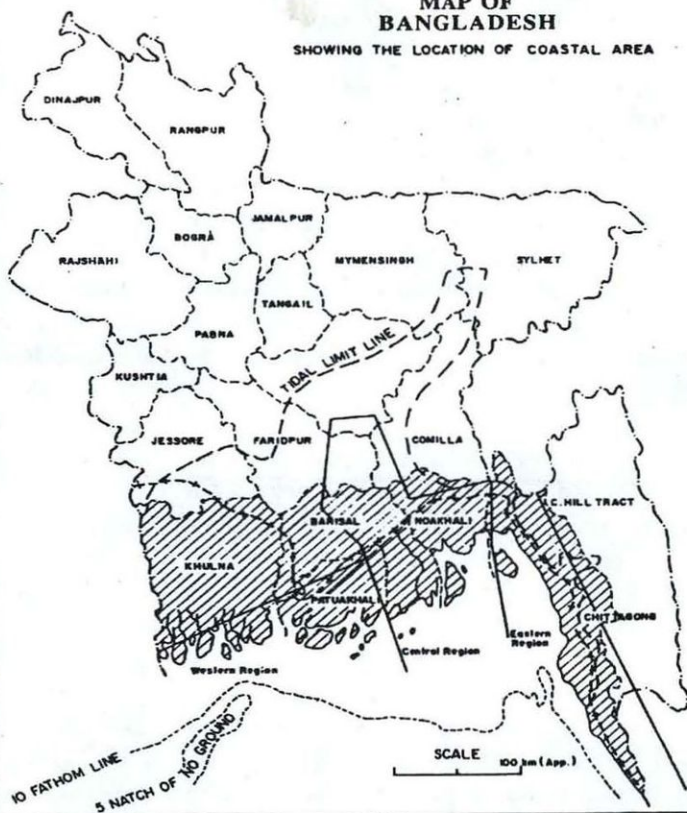
While incorporating the modalities of co-management in the ICZM in Bangladesh may face legal, structural, institutional and financial problems in the beginning, the efforts should continue as management in itself is a continuous process. The management should take into consideration the fact that no success story of ICZM can serve Bangladesh as an example as ICZM varies among nations due to the difference in physical, political, social, economic, cultural, legal and administrative conditions. However, if management needs to judge the people centric nature of ICZM the following criteria should at best be taken into consideration i.e., transfer of activities to the locals, creation of awareness, long-term benefits for the community, participatory process, gender sensitivity, upholding local identities, respect for human rights etc. The management can also take into consideration the case of several co-management arrangements with respect to common property resources in few countries. The paper ends with a cautionary note that the suggested proposal for incorporating co-management in the current ICZM in Bangladesh should by no means be understood as a scheme anti-state, anti-government or anti-bureaucracy in nature. 'This view where it exists is somewhat romantic and unrealistic, and is just as likely to be unable to achieve planning and management for sustainable development as direct state management'.²⁰⁷

206 Brief on the PDO-ICZM.


207 "The Ethical Dimensions of Coastal Zone Management : The Case of The Portland Bight Protected Area - Jamaica", http://www.unesco.org/cst/pup/papers_comp/nun, retrieved on November 2002.

MAP OF BANGLADESH

SHOWING THE LOCATION OF COASTAL AREA



LEGEND

- INTERNATIONAL BOUNDARY
- - - DISTRICT BOUNDARY (OLD)
- TIDAL LIMIT LINE
- + - + - LINE SHOWING THE SALINITY LIMIT OF 1000 MICROMHOS (8.76 PPT. APPROX.)
- THREE BROAD REGIONS OF THE BANGLADESH COASTAL AREA
-  COASTAL AREA