

Coastal Zone Management: an Analysis of Different Policy Documents

Working Paper
WP009

Dhaka
January 2003

**Program Development Office
for
Integrated Coastal Zone Management
(PDO-ICZM)**

**Coastal Zone Management: an Analysis of
Different Policy Documents**

Working Paper
WP009

Prepared by
M. Rafiqul Islam & Rob Koudstaal

Saimon Centre, Road 22, House 4/A, 5th floor
Gulshan 1, Dhaka 1212
Tel & Fax: 8826614; Tel: 9892787; Email: pdo@iczmpbd.org
Web: www.iczmpbangladesh.org

Dhaka, January 2003

TABLE OF CONTENTS

TABLE OF CONTENTS	I
ABBREVIATIONS	II
1 INTRODUCTION.....	1
1.1 Background	1
1.2 Structure of the report.....	2
2 NATIONAL STRATEGIES & LONG-TERM PLANS	3
2.1 Fifth five-year plan (1997-2002).....	3
2.2 A national strategy for economic growth, poverty reduction and social development	4
3 SECTOR POLICIES.....	9
3.1 Environment policy & implementation plan (MoEF, 1992)	9
3.2 Livestock development policy (MoFL, 1992)	11
3.3 National tourism policy (MoCA&T, 1992).....	12
3.4 National forest policy (MoEF, 1994)	13
3.5 National energy policy (MoEP&MR, 1996)	13
3.6 National fish policy (MoFL,1998)	14
3.6.1 <i>Coastal shrimp and aquaculture policy</i>	14
3.6.2 <i>Marine fisheries resources development, exploitation and management policy</i>	16
3.7 National policy for safe water supply and sanitation (MoLGRD&C, 1998).....	18
3.8 National agricultural policy (MoA, 1999).....	19
3.9 Industrial policy (MoI, 1999)	20
3.10 National water policy (MoWR, 1999a)	21
3.11 National shipping policy (MoS, 2000)	22
3.12 National rural development policy (MoLGRD&C, 2001)	23
3.13 National land use policy (MoL, 2001).....	24
4 A PRELIMINARY ASSESSMENT OF THE POLICY FRAMEWORK	27
4.1 Common themes	27
4.2 Coordination between and among sectors.....	31
4.3 Implementation and harmonization	35
4.4 Concluding comments	37
5 ROLE OF DIFFERENT ORGANISATIONS IN POLICY DOCUMENTS	39
6 TOWARDS A COASTAL ZONE POLICY.....	45
6.1 Policy note on ICZM.....	45
6.2 Integrated coastal zone management: an overview.....	46
6.2.1 <i>What is ICZM?</i>	46
6.2.2 <i>Why ICZM?</i>	47
6.2.3 <i>Steps towards ICZM</i>	48
6.3 Drafting a coastal zone policy (CZPo)	49
REFERENCES	51

ABBREVIATIONS

AC	Advisory Committee
AEZ	Agro-Ecological Zones
BEA	Bangladesh Economic Association
BIWTA	Bangladesh Inland Water Transport Association
BIWTC	Bangladesh Inland Water Transport Corporation
BRDB	Bangladesh Rural Development Board
BSCIC	Bangladesh Small & Cottage Industries Corporation
BWDB	Bangladesh Water Development Board
CDS	Coastal Development Strategy
CZPo	Coastal Zone Policy
DAE	Department of Agricultural Extension
DoE	Department of Environment
DoF	Department of Fisheries
DPHE	Department of Public Health Engineering
EIA	Environmental Impact Assessment
EPoIP	Environment Policy & Implementation Plan
ERD	Economic Relations Division
FAO	Food & Agriculture Organization
FCDI	Flood Control, Drainage & Irrigation
FD	Forest Department
FDI	Foreign Direct Investments
FFYP	Fifth Five-Year Plan
GDP	Gross Domestic Product
GoB	Government of Bangladesh
ICZM	Integrated Coastal Zone Management
IMF	International Monetary Fund
IPo	Industrial Policy
ISO	International Standard Organization
LDPo	Livestock Development Policy
LGED	Local Government Engineering Department
MoA	Ministry of Agriculture
MoCA&T	Ministry of Civil Aviation and Tourism
MoEF	Ministry of Environment and Forest
MoEP&MR	Ministry of Energy, Power and Mineral Resources
MoFL	Ministry of Fisheries & Livestock
MoI	Ministry of Industries
MoL	Ministry of Land
MoLGRD&C	Ministry of Local Government, Rural Development & Co-operatives
MoP	Ministry of Planning
MoS	Ministry of Shipping
MoWR	Ministry of Water Resources
NAPo	National Agriculture Policy
NEDA	Netherlands Development Assistance
NEdPo	National Education Policy
NEnPo	National Energy Policy
NFiPo	National Fish Policy
NFoPo	National Forest Policy
NGO	Non Governmental Organization
NLUPo	National Land Use Policy
NPoAW	National Policy on Advancement of Women
NPoSWSS	National Policy for Safe Water Supply & Sanitation
NRDPo	National Rural Development Policy
NSPo	National Shipping Policy
NTPo	National Tourism Policy
NWPo	National Water Policy
NWRC	National Water Resources Council
O&M	Operation & Maintenance
PDO	Program Development Office

PDO-ICZM	Program Development Office for Integrated Coastal Zone Management
PSC	Production Sharing Contract
PRSP	Poverty Reduction Strategy Program
SPARRSO	Space Research & Remote Sensing Organization
TC	Technical Committee
TYRP	Three-Year Rolling Plan
WARPO	Water Resources Planning Organization
WASA	Water and Sewerage Authority
WB	World Bank
WFP	World Food Program

1 INTRODUCTION

1.1 Background

Starting from the early nineties, several ministries of the Government of Bangladesh released policy documents. While some ministries are still to draft a policy, others have already revised or are in the process of revision of their policy documents. In addition to two national strategic planning documents, the Government of Bangladesh so far has prepared more than a dozen sectoral policy documents, that are relevant for Integrated Coastal Zone Management (ICZM).

In 2001, during the interim period of the PDO project, a first attempt was made to bring together from these policy documents all the statements relevant for the coastal zone. Eight policy documents and the Fifth Five-Year Plan (FFYP) were reviewed and results were presented in a discussion paper (PDO-ICZM, 2001).

Since then, new policy documents have been released and some earlier released documents could be collected. The present working paper updates the previous discussion paper with information from 5 additional sectoral policy documents and the National Strategy for Economic Growth and Poverty Reduction (ERD, 2002). The complete list of reviewed sectoral policy documents contains the following policies (additional ones are indicated in *italic*):

- ◇ Environment Policy & Implementation Plan (MoEF 1992);
- ◇ *Livestock Development Policy (MoFL 1992)*;
- ◇ National Tourism Policy (MoCA&T 1992);
- ◇ National Forestry Policy (MoEF 1994);
- ◇ *National Energy Policy (MoEP&MR 1996)*;
- ◇ National Fish Policy (MoFL 1998);
- ◇ National Policy for Safe Water Supply and Sanitation (MoLGRD&C 1998);
- ◇ National Agricultural Policy (MoA 1999);
- ◇ Industrial Policy (MoI 1999);
- ◇ National Water Policy (MoWR 1999a);
- ◇ *National Shipping Policy (MoS 2000)*;
- ◇ *National Rural Development Policy (MoLGRD&C 2001)*; and
- ◇ *National Land Use Policy (MoL 2001)*.

In this backdrop, it merits mention that the Government of Bangladesh has not yet adopted a formal Coastal Zone Policy. In September 1999, however, a document: “Integrated Coastal Zone Management: Concept and Issues” was released by the Ministry of Water Resources, that is identified as Policy Note of the Government (MoWR 1999b). Based on this Note, a more formal policy will be drafted by the PDO-ICZM project. More detailed information on this Coastal Zone Policy is included in Chapter 7.

The following observations merit mention for better interpretation of the contents of this report.

- The present working paper replaces the 2001 discussion paper and contains all information from that report which was deemed useful.
- Only the policy documents themselves were considered in the analysis and not subsequent papers, which were published afterwards to support implementation.
- Most policy documents are in Bangla. For some only, official English versions are available. This analysis has been done using the official versions of the policy documents.

- In the last months of the year 2002 an additional analysis has been made on the implementation of policies. This study will be documented separately. A summary of findings is included in the present report in Chapter 6.

1.2 Structure of the report

Chapter 2 deals with the considered national planning documents (being the FFYP and the National Strategy for Poverty Reduction), while Chapter 3 provides detailed information on the 13 sectoral policy documents mentioned in the above section.

Chapters 4 and 5 give information on how the various policies deal with specific issues of relevance for the coastal zone (Chapter 4) including the status of policy implementation and on the identified role of various institutions in policy documents (Chapter 5).

Chapter 6 gives an overview of the state of the art of the Coastal Zone Policy as it is in preparation through the PDO-ICZM project.

2 NATIONAL STRATEGIES & LONG-TERM PLANS

2.1 Fifth five-year plan (1997-2002)

The Five-Year Plans encapsulate the Government's policy, strategy and plan for the country's development in the 5-year reference period. As such, the Fifth Five Year Plan (FFYP) provides the only currently available comprehensive document setting out the totality of GoB's development plans with a 5-year planning horizon, 1997 to 2002 (MoP, 1998). It is, however, sectoral policy documents that provide indications of the medium and longer-term strategic directions of the Government.

The FFYP provides an important starting point for understanding the vision of the Government for the development of any area, for example, the coastal zone. As the development of the coastal zone is neither an explicit national development target nor the responsibility of a specific ministry/agency, the FFYP does not allocate resources particularly for the development of the zone. Aspects of coastal development are embedded in activities/programs/projects of many sectoral ministries and agencies.

For the present ICZM purpose, the most important aspects of the FFYP are its overall policies and strategies in so far they affect the coastal zone. In this context, the FFYP recognizes the 'coastal zone being a neglected region of Bangladesh' and narrates:

“Coastal area of Bangladesh is ecologically sensitive and climatically vulnerable. It is ecologically sensitive because of the continuous process of land accretion, which needs to be protected for natural vegetative growth and afforestation. It also contains one (5,000 sq. km) of the largest mangrove forests in the world. But the area has also been subject to severe cyclonic storms originating in the Bay of Bengal, causing some of the greatest disasters of the world. The area covers over 1.8 million of households (1991) in 133 thanas along the coastal belt and is considered as risk prone. In spite of the cyclonic risk, there has been growing population pressure on the area, particularly since the beginning of the construction of 5,000 km of coastal embankments. Such embankments have helped to bring land under rice cultivation as salinity reduced. In recent years, the area has also taken up extensive shrimp culture, which needs saline water. This development has created conflict of interests between small farmers and relatively wealthy shrimp farm owners. Besides this, shrimp culture has also adversely affected the mangrove forest. Under these circumstances there is a need for careful planning for the development of the area without irreparably damaging the eco-system of the area.

The area is resourceful in many ways. It contains one of the two rich forest belts of the country and provides fuelwood and raw material for the newsprint mill. Its flora and fauna contribute to other production also. Indeed, with the loss of inland flood plains, the area including its offshore belt has grown in importance for fisheries. Above all, continuous silting of the area by rivers and channels has enriched the soil within the embankments for paddy cultivation. In spite of these potentials, no concerted efforts has been made to secure the development of the area against its natural risk and ecological sensitivity except for shelter of people and livestock. Even in this respect, existing facilities are inadequate and in derelict condition. After the cyclone of 1991 in which about 139 thousand people perished, multipurpose cyclone shelter programme was developed with focus on the development of shelter-cum-school/community facilities. Though the programme will save lives, it will not enhance the capability of people to endure the economic losses (crop, fish, livestock, etc.) due to cyclone. The desired socio-economic goal can be achieved only by accelerated development of the area.

For development of coastal areas, emphasis will be given on:

- ◇ *development of appropriate housing for low income people;*
- ◇ *building more cyclone shelters;*

- ◇ *developing intensive shrimp and pisciculture;*
- ◇ *completing embankments;*
- ◇ *encouraging fish processing industries;*
- ◇ *setting up export processing zones; and*
- ◇ *building efficient power, transportation and telecommunication links, particularly with the islands.*

Very recently, sizeable gas resources have been found in the coastal areas. Special emphasis will be given to utilise these resources for production of power and setting up of downstream manufacturing based on gas.”

Other relevant policy statements call for decentralisation of the public sector administration and activities, with a focus on local-level participatory planning and management and a progressive devolution of authority from the central to local government in the framework of ‘balanced regional development’.

The Government has recently announced that the existing system of 5-year planning will be replaced by a system of rolling 3-year plans, which is presently (end 2002) under preparation.

Comments

Even in absence of a focused emphasis, the FFYP has placed explicit importance on the development issues of the coastal zone, recognizing its hazard proneness and ecological vulnerability and the need for careful planning in this zone which is characterized as: ‘one of the neglected regions of Bangladesh’.

The FFYP has proposed seven specific development efforts aiming at the mentioned “balanced regional development”, but is it not clear whether and how such a planning would be undertaken. Proposed interventions mainly and typically focus on infrastructure and economic development.

2.2 A national strategy for economic growth, poverty reduction and social development

The Government of Bangladesh has embarked upon preparing a national strategy document which may be considered as the equivalent to the ‘Interim Poverty Reduction Strategy Paper (I-PRSP). An Inter-Ministerial Task Force has prepared the document under the above title (ERD, December 2002) through a process of combined policymaking and broad-based consultations with different stakeholders. It was intended that, for operational purposes, the strategy would form the “core” of the Three-Year Rolling Plan (TYRP) providing the basis for the annual budget. The TYRP would be formulated within the framework of a long-term Perspective Plan.

The strategy document makes general mention of attention needed for the coastal zone. The focus on economic growth, poverty reduction and social development creates a framework, which is similar to the ICZM objectives. The following merit mention as having bearing on the objectives and scope of the ICZM process under development.

- The document has explicit focus on poverty. The document gives an analysis of the poverty status of the nation, sets poverty reduction targets and formulates poverty reduction strategies (Chapters 2, 4 and 5, (ERD, 2002)).

- The report recognizes that in addition to sectoral variation, considerable *regional variation* in poverty is noticeable. It is explicitly mentioned that progress in poverty reduction over the nineties has been unequal across regions, with rapid progress in Dhaka division and very little change in Chittagong (including Sylhet) division. There is also considerable district-level variation in poverty. Regional variation in poverty is influenced by the incidence of natural hazards and tends to be higher in disaster-prone areas. The level of poverty is typically higher for the landless. The incidence of extreme poverty (however defined) is generally higher for the female-headed, female-managed and female supported households. (Quoted from paras 2.6 & 2.8 (ERD, 2002))¹.
- The overall pace of decline in income-poverty in the nineties has been referred to as modest (1 percentage point per year). The pace of rural poverty reduction was slow in the eighties, but became faster in the nineties. The reverse is true for the urban areas. On the other hand, the level of inequality showed very little change in the eighties but urban inequality rising much more than the rural inequality in the nineties.
- The consensus view was that public action could have maximum impact on poverty only with the support of a *strong* (with adequate financial and administrative power) and *popular* (elected with people's mandate) *local government*. Without having effective structures of local governance at union and thana levels, the issues of improving quality and enhancing accountability of public services at local level cannot be effectively addressed. (Quoted from para 3.9 (ERD, 2002)).
- The grass-roots consultations in preparation of this strategy document demanded additional attention to the problems of environmentally fragile settings such as char areas, river-erosion areas, salinity and flood-prone areas. Concerns were also raised over the *lack of adequate participation* of diverse categories of socially vulnerable groups such as those residing in ecologically vulnerable areas such as cyclone-prone coastal areas, char and river-bank erosion areas and others. (Quoted from para 3.24 (ERD, 2002)).
- Through adopting a comprehensive approach, the Strategy visualizes that, by the year 2015, Bangladesh would achieve the following goals/*targets* (quoted from para 4.1 (ERD, 2002)):
 - (i) Remove the 'ugly faces' of poverty by eradicating hunger, chronic food-insecurity, and extreme destitution;
 - (ii) Reduce the number of people living below the poverty line by 50 per cent;
 - (iii) Attain universal primary education for all girls and boys of primary school age;
 - (iv) Eliminate gender disparity in primary and secondary education;
 - (v) Reduce infant and under five mortality rates by 65 per cent, and eliminate gender disparity in child mortality;
 - (vi) Reduce the proportion of malnourished children under five by 50 per cent and eliminate gender disparity in child malnutrition;
 - (vii) Reduce maternal mortality rate by 75 per cent;
 - (viii) Ensure availability of reproductive health services to all;
 - (ix) Reduce substantially, if not eliminate totally, social violence against the poor and the disadvantaged groups, especially violence against women and children; and
 - (x) Ensure comprehensive disaster risk management, environmental sustainability and mainstreaming of these concerns into the national development process.
- The PRSP follows an approach of "*all routes matter*" and proposes that the strategic elements of anti-poverty policies and institutions will cover five broad avenues. The first set of policies would accelerate and expand the scope for *pro-poor economic growth* for increasing income and employment of the poor. The second set would foster *human development* of the poor for raising

¹ These categories seem to be more represented in the coastal zone than in other parts of Bangladesh.

their capability through education, health, nutrition, employment oriented skill training, and social interventions. The third set of policies would support *women's advancement and closing of gender gaps* in development. The fourth set of policies would provide *social protection* to the poor against anticipated and unanticipated income/consumption shocks through targeted and other efforts. The fifth set would favorably influence *participatory governance*, enhance *voice* of the poor, and improve *non-material dimensions* of well-being including security, power and social inclusion by improving the performance of anti-poverty, disaster preparedness and mitigation institutions and removing institutional hurdles to social mobility (Quoted from para 5.2 (ERD, 2002)).

- Relevant to the ICZM approach is the emphasis for targeting. The PRSP states (para 5.3 (ERD, 2002)): “The above interventions will have maximum impact on poverty, especially in minimizing the severity of poverty, when these are targeted to the poor regions and with special focus on the needs of the most disadvantaged population and ethnic groups. Policies and institutional actions delineated under the proposed poverty reduction strategy will be designed to reach out to the poorest and the remote rural areas, which are vulnerable to adverse ecological processes (including the cyclone-prone coastal regions, *chars* and river erosion affected areas) and those with high concentrations of socially disadvantaged and marginal ethnic groups.”
- For accelerating rural development, an integrated approach ‘covering the deprived population of char areas, coastal and hard-to reach areas under special rural development programs through both government and NGO/CBO efforts’ would be taken. (Quoted from para 5.43 (ERD, 2002)).
- Special attention is given to women’s advancement and removing gender gaps. The PRSP observes that the overall level of empowerment of women “leaves much to desired”. Areas that are considered of critical importance and will be emphasized include: policies and institutional actions to combat continuing negative sex ratios; violence against women; high maternal mortality; restriction on women’s employment and economic opportunities; policies to ensure formal equality, supporting affirmative actions at all levels and in all spheres; creating women-friendly institutional environment; and generating gender-disaggregated statistics. (Quoted from para 5.70 (ERD, 2002)).
- The third of four sets of policies under ‘strengthening social protection’ is ‘strengthening disaster preventing and mitigating mechanisms to enhance the coping capability of the poor in times of natural disaster. This is important from the prospect of averting large-scale entitlement failure, which may result as a consequence of severe natural disasters (including river erosion). (Quoted from para 5.74 (ERD, 2002)). Reduction to vulnerability to natural disasters would be an integral aspect of the national strategies for poverty reduction (Quoted from para 5.75 (ERD, 2002)).
- A special section is dedicated to caring for environment, emphasizing the link between poverty and environment and the importance of access to the natural resources. As 80% of the population depend to some extent on the country’s natural resources, “the policies will strike a realistic balance between the existing livelihood requirements of the people and sound environmental resources management that can ensure sustainability. A special emphasis will be given to addressing the problems of river erosion (Para’s 5.84 (ERD, 2002)).
- Most importantly the PRSP initiates the development of “a systematic approach to monitoring and evaluating the progress in implementing the strategy”. A tentative list of core-indicators and required institutional arrangements for monitoring, has been developed aiming to keep track of trends in poverty. It is proposed to produce an annual Report on Poverty and Human Development, providing, among other things, an overall view of economic growth, human development, poverty reduction and gender equality targets. (Para 7.1, (ERD, 2002)).

Comments

The objectives and approach as described in the document ‘A national strategy for economic growth, poverty reduction and social development (the Interim PRSP)’ are very much in line with the objectives and scope of ICZM. The strategy paper prepares for a focus of GoB-actions on poverty reduction in relation to economic growth, paying relevant attention to women’s advancement and monitoring arrangements. Such an accepted national-level focus and approach would greatly facilitate the development and implementation of an ICZM approach as envisaged through its objectives.

The document identified coastal regions as areas ‘vulnerable to adverse ecological processes’ and the population of coastal area as ‘deprived’ and ‘require special rural development programs’. These could lead to a special status of the coastal zone. This would create a framework for developing and implementing a CZPo and CDS as an inter-ministerial responsibility and would support the establishment of the required structures and procedures for harmonization and coordination.

It has to be realized, however, that this document is yet to be made into a full-blown poverty reduction strategy by December 2004. Mean time, the interim strategy would form the “core” of the Three-Year Rolling Plan (TYRP) providing the basis for the annual budget. On the other hand, a national debate seems to be emerging whether Bangladesh should formulate a PRSP in compliance with an “edict of the Bretton Woods institutions” (The Daily Star November 12, 2002).

It also merits mention that in terms of contents and scope, the PRSP meets strong critics from renowned economists in the country (BEA, 2002). The main argument is that the proposed strategy would confirm vested interests and does not really focus on poverty reduction. A genuine poverty alleviation (preferred above poverty reduction) would above all focus on “reversing the trend of inequality in the distribution of both income and assets and inequality in access to different vital institutions in the society” (BEA, 2002; keynote paper Section D). Leaving aside the correctness of such statement, it would be an interesting challenge for a more focused and practical strategy, to see whether the CDS can provide an answer to these critics.

3 SECTOR POLICIES

The following policy documents consulted and the related inferences drawn for integrated coastal zone management:

- ◇ Environment Policy & Implementation Plan (MoEF 1992);
- ◇ *Livestock Development Policy (MoFL 1992)*;
- ◇ National Tourism Policy (MoCA&T 1992);
- ◇ National Forestry Policy (MoEF 1994);
- ◇ *National Energy Policy (MoEP&MR 1996)*;
- ◇ National Fish Policy (MoFL 1998);
- ◇ National Policy for Safe Water Supply and Sanitation (MoLGRD&C 1998);
- ◇ National Agricultural Policy (MoA 1999);
- ◇ Industrial Policy (MoI 1999);
- ◇ National Water Policy (MoWR 1999a);
- ◇ *National Shipping Policy (MoS 2000)*;
- ◇ *National Rural Development Policy (MoLGRD&C 2001)*; and
- ◇ *National Land Use Policy (MoL 2001)*.

These policies are discussed in more detail in subsequent respective, sections. The non-italic policies from the above list have been covered in the previous study (PDO-ICZM, 2001).

3.1 Environment policy & implementation plan (MoEF, 1992)

The Environmental Policy & Implementation Plan (EPoIP) is one of the key and earlier policy document of the Government (MoEF, 1992). The objectives of the EPoIP are to:

- (i) maintain ecological balance and overall development through protection and improvement of the environment;
- (ii) protect the country against natural disasters;
- (iii) identify and regulate activities which pollute and degrade the environment;
- (iv) ensure environmentally-sound development in all sectors
- (v) ensure sustainable, long-term and environmentally sound use of all national resources; and
- (vi) actively remain associate with all international environmental initiatives to the maximum possible extent.

The policy addresses 15 sectors in all, in addition to providing directives on the legal framework and institutional arrangements. Coastal and marine environment is one of the sectors.

Policy declarations that have particular bearing on the ICZM relate to:

- ◇ sustainable use of coastal & marine resources and preservation of coastal ecosystems;
- ◇ prevention of national and international activities causing pollution in coastal and marine environment;
- ◇ strengthening research in protection and development of coastal & marine resources and environment; and
- ◇ exploitation of coastal and marine fisheries to a maximum sustainable limit.

The policy document has indicated the following activities in relation to coastal and marine environment.

- Establish a special Cell to co-ordinate and monitor development activities to protect coastal and marine environment (MoEF, FD, DoE and Forest Research Institute)

- Transfer newly accreted land to the Department of Forests on a priority basis to stabilize and protect from erosion (MoL, DoF).
- Bangladesh Navy will oversee & prevent pollution in territorial water of Bangladesh. Ministry of Shipping will monitor (MoDefence, Bangladesh Navy, MoShipping).
- Mobilise resources and undertake local and national contingency plans to handle accidental pollution of coastal waters; co-ordinate with regional plans (MoShipping, MoDefence, Bangladesh Navy).
- Undertake measures to technically handle waste and polluted oils from ships at both Chittagong & Mongla ports (MoShipping).
- Establish a special Cell within the Ministry of Shipping to determine level of pollution parameters before dumping at sea and issue required permit (MoShipping, DoE).
- Raise on a priority basis a ‘Coast Guard’ regiment within the Ministry of Shipping to provide security to coastal resources and assist in environmental protection (MoShipping).
- Undertake necessary steps to prevent pollution of coastal water, protect newly accreted land and preservation and proper utilization of all coastal resources (MoDefence, Bangladesh Navy, MoShipping, DoForest, SPARSSO).

The EPOIP also makes the following statements that have some bearing on the ICZM.

- *Agriculture.* All steps and technologies for agricultural development and attainment of food self-sufficiency are to be environmentally sound; all resource bases are to be sustainable.
- *Energy.* Reduced use of pollution generating energy sources; reduced use of wood as fuel and increased use of alternative energy sources; preservation of reserve and renewable energy sources; EIA before undertaking any exploration activities.
- *Water development, flood control and irrigation.* Ensure environmentally-sound utilisation of all water resources:
 - ◊ ensure that water development activities and irrigation networks do not create adverse environmental impact;
 - ◊ ensure that all steps are taken for flood control, including construction of embankments, dredging of rivers, digging of canals, etc, be environmentally sound at local, zonal and national levels;
 - ◊ ensure mitigatory measures of adverse environmental impact of completed water resources development and flood control projects;
 - ◊ keep the rivers, canals, ponds, lakes, haors, baors and all other water bodies and water resources free from pollution;
 - ◊ ensure sustainable, long-term, environmentally sound and scientific exploitation and management of the underground and surface water resources; and
 - ◊ conduct environmental impact assessment before undertaking projects for water resources development and management.
- *Land.* Promulgation of environmentally sound national landuse policy; Prevent land erosion; land reclamation and strengthening of management of newly accreted land; encourage land use compatible with various eco-systems and prevent spread of salinity and alkalinity on land.
- *Forest, wildlife and bio-diversity.* Inclusion of afforestation activities in all development projects; preserve and protect forest land and forest resources; conserve and develop wetlands and protect migratory birds.

- *Fisheries and livestock.* Ensure an appropriate environment for the conservation and development of fisheries and livestock; prevent activities which diminish the wetlands/natural habitats of fish and encourage rehabilitative measures in this area; ensure that development activities in fisheries and livestock do not create any adverse impact on the mangrove forests and other eco-systems; re-evaluation of existing projects on water resources development, flood control and irrigation to determine their adverse impact on fisheries and adopt measures for alternate fish culture upon improvement of environmental conditions.
- *Institutional arrangements.* The Ministry of Environment and Forests (MoEF) is to coordinate implementation of the policy and prepare timely updates under the direction of a National Environmental Committee; the DoE is to review and approve all EIAs.

Comments

As one of earlier policy documents, the EPoIP is comprehensive. The document has not only elaborated policies but also outlined possible institutional arrangements for their implementation. One of the policy statements is 'the establishment of a special Cell to co-ordinate and monitor development activities to protect coastal and marine environment'. This special cell has not been established but the establishment of the PDO-ICZM is expected to be instrumental in harmonising many activities including protection of coastal and marine environment.

Pollution of the coastal and marine environment is one of the concerns in the coastal zone. The Bangladesh Navy and the Ministry of Shipping are allocated crucial tasks in management of the marine environment, such as: preventing and monitoring pollution in the territorial waters; to develop contingency plans; and to control waste disposal and oil pollution from ships (including licensing). Envisaged institutional arrangements are the establishment of a special Cell and a special Coast Guard regiment in the Ministry of Shipping. An assessment of these announced measures and whether they are adequate is important. The role of Bangladesh Navy for example, has become more crucial as the Government has declared an area as 'marine reserve' in the Bay of Bengal. The co-operation between the Bangladesh Navy, the Dept. of Environment, the Ministry of Shipping and the Dept. of Fisheries is important.

3.2 Livestock development policy (MoFL, 1992)

The Livestock Development Policy (LDPo) emphasizes the importance of the livestock sub-sector, which has been neglected so far despite its contribution to the national economy. Based on 12 different policy objectives, the following seven programs will be undertaken for stabilizing the development of the livestock resources and increasing the production of milk, egg and other commodities:

- (i). development of livestock, poultry and duckary;
- (ii). production of feed for livestock, poultry and duckary;
- (iii). control and treatment of livestock, poultry and duckary diseases;
- (iv). education, training and research;
- (v). investment of capital and loan management;
- (vi). marketing management; and
- (vii). institutional development.

The LDPo does not distinguish the coastal zone separately. Among 60 or more policy statements, the following two policy statements contain the mentioning of the coastal zone.

- Specific areas will be identified to implement programs for fattening of cattle and livestock. For this purpose, the Chittagong Hill Tracts, the coastal areas and the islands will be included under the fattening of livestock and cattle program.
- Special programs will be taken up for the production of grass in the Chittagong Hill-tracts and the coastal areas.

Comments:

Livestock is one of the key assets in coastal households and the protection of livestock from cyclones and tidal surges is a major concern. The construction of killahs for protection of livestock is a crucial infrastructural intervention in the coastal areas. However, this has not received any mention in the policy document.

3.3 National tourism policy (MoCA&T, 1992)

In the National Tourism Policy (NTPo), tourism has been recognised as an industry with multi-dimensional aspects. Co-ordinated involvement of many sectoral agencies is seen as vital for the growth of this industry. Coastal beaches, among others, are considered as one of the attractions. Relevant among the 25 major principles of the NTPo (1992) are:

- ◇ development of infrastructural facilities at and connecting tourist sites;
- ◇ development of the rich cultural, historical and religious pasts of tourist sites along with providing modern facilities for foreign tourists;
- ◇ allocation of certain islands only for use by foreign tourists;
- ◇ encouragement of domestic and foreign investments in the private sector to promote tourism;
- ◇ development of facilities to encourage domestic tourism;
- ◇ conservation & maintenance of archaeological and historical sites;
- ◇ wild-life conservation with tourism master plan for the Sundarbans
- ◇ development of Cox's Bazar sea beach;
- ◇ development of Kuakata and sea beaches in southern Bangladesh; and
- ◇ delineation of special areas or islands for foreign tourists and their development through private sector involvement.

For tourism development, seven different regions are identified of which 3 relate to the coastal zone:

- ◇ Chittagong Metropolitan Area & its surroundings;
- ◇ Sonadia island of Cox's Bazar & neighbouring coastal islands; and
- ◇ Khulna, Mongla, Sunderbans, Kuakata & Hiron Point.

Comments:

As development in the tourism industry is dynamic, a revision of the National Tourism Policy (1992) is required focusing on eco-tourism and other aspects of guided tourism. Tourism is a potential component of Integrated Coastal Zone Management. A revised policy, if any planned, needs to accommodate opportunities for the employment for coastal resources users that are affected by tourism developments. It is understood that the Tourism Master Plan of 1988 will be updated & revised.

3.4 National forest policy (MoEF, 1994)

The National Forest Policy (NFoPo) of 1994 is a successor to the first version produced in 1979. The overall objective is to meet the basic needs of the present and future generations and to ensure greater contribution of the forestry sector in economic development. The overall policy goal is that approximately 20% of the area of Bangladesh will be afforested. The NFoPo realizes the need for massive and planned tree plantation, maintenance and preservation in the coastal areas to reduce the velocity and intensity of cyclones, tornados and tidal bores.

The NFoPo mentions ‘because of limited amount of forest land, effective measures will be taken for afforestation in the newly accreted chars in the coastal areas’.

A multiple use policy is adopted for the Sundarbans, covering forest, water and fish.

Eco-tourism, related to forest and wildlife, is recognised as a forestry-related activity, which will be promoted taking into consideration the carrying capacity of nature.

The NFoPo further states: ‘because of the scarcity of forest land, state-owned reserved forest cannot be used for non-forestry purposes without the permission of the Head of the Government’.

The policy recognises the international commitments Bangladesh has made on global warming, desertification and the international trade in endangered species.

Comments

The general objectives of the NFoPo accord with the vision of ICZM, but the determination to extend forestry to cover 20% of the land may cause a conflict with agriculture and other growing land uses for industry and recreation. Afforestation in the newly accreted chars in the coastal areas is in line with the concept of ICZM but later handover of the area for other landuse remains a delicate issue. A national consensus is needed on this vital issue of land transfer between different governmental departments. In this respect, it has to reassessed whether the policy of ‘20% of the area of Bangladesh to be afforested’ is a realistic one.

3.5 National energy policy (MoEP&MR, 1996)

The National Energy Policy (NEnPo) is a comprehensive policy document formulated to ensure proper exploration, production, distribution, and rational use of energy sources to meet the growing energy demand of different zones, consuming sectors and consumers groups on a sustainable basis (MoEP&MR, 1996). The policy recognises the need to assess ‘the prospect of tidal and wave power in coastal areas’ as potential energy source.

Resource assessment. For energy planning purposes, an assessment of all types of energy resources (e.g.: oil; gas; coal; nuclear minerals; hydropower; biomass fuels; solar; wind; and tidal waves) is to be undertaken on a regular/continuous basis by the appropriate authorities. Special incentives are to be given to undertake exploration and appraisal of petroleum resources in the western zone and off-shore areas.

The NEnPo emphasizes an area-based energy planning to ensure a sustainable supply of biomass fuels and to meet the energy needs of rural areas.

An adequate emergency stock of coal, say equivalent to one month’s consumption, is to be maintained in off-shore islands and flood prone areas to meet the cooking fuel needs at the time of emergency.

Non-renewable energy policy. Since the reserve of the Kutubdia gas field has been considered in the energy balance, due consideration is to be given to its development and availability for use.

The ‘establishment of adequate oil depot at the Chalna port and up-country’ in the western zone should be undertaken.

Petroleum policy. Special consideration will be given to the application for a PSC (Production Sharing Contract) in offshore areas.

Renewable and rural energy policy. Potentials of renewable sources of energy like solar, wind, mini/micro hydro, tidal, wave and geothermal are to be assessed on an area-basis considering the unions or thanas as a unit for resource assessment.

Remote and isolated areas, including off-shore islands, which are not likely to be brought under the networks of commercial fuels in a foreseeable future, are to be considered as potential sites for implementing renewable energy technologies, in spite of their high capital cost. Solar photovoltaic may be considered for specific purposes for cyclone shelters.

Power policy. Special projects are to be identified, for example power plants in the western zone or the off-shore islands. Plans for the generation of electricity on isolated and remote areas like off-shore islands are to be drawn up separately and criteria for its acceptance shall be fixed on the basis of fuel and technology options relevant for such areas.

Comments

The NEnPo is very explicit in recognising the remoteness of off-shore islands and the coastal zone in general. It makes specific recommendations even to tackle emergency situations like stocking of coal. In addition, the coastal area is central in policies dealing with renewable energy sources such as wind and tidal waves. Yet the area lacks behind in providing even the basic energy need. Implementation of these policies remains to be seen.

3.6 National fish policy (MoFL,1998)

Coastal and marine fisheries are prominently dealt with in the National Fish Policy (NFiPo). The marine area includes a total water area of 1.66 lakh km² including the 200 nautical miles of exclusively economic zone along the 480km. coastline. The NFiPo incorporates, among other things, with

- ◇ a policy for culture of shrimps in coastal regions; and
- ◇ a policy for exploitation, conservation and management of marine fisheries resources.

Intended arrangements under these policies are summarized in two following sub-sections.

3.6.1 Coastal shrimp and aquaculture policy

This policy incorporates the following 23 arrangements.

- There will be a thana, district, division and national committee. This committee will take care of the development of shrimp production, implement laws related to shrimp culture and mitigate other concerned problems. This committee will be run by the policies of the government.
- Measures will be taken to conserve biodiversity in the coastal region and necessary steps will be taken to culture fish/shrimp along with rice crop, either in rotational or concurrent systems.
- Arrangements will be established within the polders (embankment) and flood control projects to conserve wild life. Each polder will be coupled with arrangements for fish/shrimp culture with rice either in concurrent or in rotational system.

- Improved – extensive culture will be encouraged. However, semi-intensive culture systems may be encouraged in controlled and feasible areas. Expansion of shrimp culture in mangrove forest will be completely banned in order to ensure ecological balance. Tree plantation will be encouraged in shrimp culture areas.
- Demonstration shrimp farms will be established through the private sector with government assistance. Farmers will be given proper training.
- Shrimp farming will be considered an export industry and like other such industries, shrimp industry will be given proper facilities.
- Proper training will be given to fry catchers to reduce mortality of fry or larvae during exploitation and transportation. Adequate infrastructure facilities will also be established.
- Private entrepreneurs will be encouraged to establish commercial shrimp hatcheries in order to reduce the dependency on natural shrimp post-larvae.
- Shrimp harvesting during the shrimp breeding season will be banned. Some selected breeding grounds at sea will be declared as shrimp sanctuaries.
- Private entrepreneurs will be given priority to establish shrimp and prawn hatcheries.
- Infrastructure facilities will be developed for shrimp hatcheries with the co-operation of the government. Moreover, appropriate security measure will be developed during the period of shrimp harvest and marketing.
- Emphasis will be given to increase shrimp production by developing appropriate technology. Big farms will be encouraged to convert farms into smaller more manageable units through the development of water supplies and drainage facilities.
- Shrimp food will be produced by using local food ingredients. Ingredients, such as fish meal, vitamin, mineral premix, food binder etc. will be imported, wherever necessary.
- Hygienic conditions will be ensured during farm management and in the post harvest period.
- Training programs will be chalked out for the concerned workers to keep healthy conditions in the post harvest period for shrimp. Other relevant infrastructure facilities will also be expanded.
- In order to get a good foreign market, the marketing sector will be strengthened.
- Facilities for Quality Control Laboratories will be expanded. Facilities of these laboratories will be modernised to ensure quality to exportable fish and shrimps.
- The Central Shrimp Cell will be expanded up to the field level in order to provide services to the shrimp farms.
- Different facilities along with trained personnel will be expanded to ensure better service from the Shrimp Cell.
- Consultation will be made with the Ministry of Environment and Forests to ensure increased shrimp production and maintain the ecological balance.
- Coastal areas will be selected for shrimp farming.
- Combined efforts with other foreign countries will be made to achieve environment friendly semi-intensive shrimp culture
- Insurance system will be adopted in fish and shrimp culture

3.6.2 Marine fisheries resources development, exploitation and management policy

This policy recognises that marine fisheries, at present, is mainly confined within a range of 40 m depth. Presently, there are 73 trawlers of which 73% are being utilized for the harvesting of fish. The following measures will be adopted.

Analysis and utilization of previous surveys

- Analysis of previous surveys will be done with the help of local and foreign specialists to formulate specific recommendations to measure the nature and specificity of the marine resources.
- Results of the analysis will be extended to the owners of the trawlers, mechanised boats and fishers communities in more practical ways.
- Surveys will be conducted in new fields with the continuation of previous surveys. Accordingly, required manpower will be developed. Emphasis will also be given to gather information, data, and statistics by the fishers. Based on this information and analysis, recommendations will be prepared focusing on the situation, improvement of gear technology, conservation and mitigation. Extension booklets will also be prepared combining this information.
- Projects will be undertaken regarding the presence and abundance of pelagic fish, like tuna, mackerel etc, in the exclusive economic zone.
- Harvest of fish and shrimp by the trawlers in the shallow coastal areas (within 40 m depth) will be banned.
- Considering the fisheries resources in the deep sea, joint venture activities with foreign countries will be established.
- Necessary research activities will be taken-up for the development of the marine fisheries resources.

Conservation of marine biological resources

- According to the previous survey, the quantity of exploitable fish and shrimp has reached their maximum levels. Under these circumstances, strict decisions will be taken against increases of mechanised or non-mechanised boats engaged in fish harvest in the marine zones. This is required to keep the fish harvest at its maximum sustainable level. So expansion of any trawler will be restricted into the fleet.
- Behundi net's (set bag net) are destructive to fry and juveniles of shrimp. Their actual number and extent of destruction will be counted and analysed and conservation measures will be taken. Moreover, spawning grounds will be conserved to ensure natural breeding in the sea.
- Bans will be imposed to harvest bagda, chaka and harina shrimps from their breeding grounds and migration routes during the breeding season.
- Practical approaches will be extended to harvest, collect and utilise trash fish.
- Appropriate preventive measures will be taken against dumping of hazardous chemicals and atomic wastes into the sea.

More priority on small scale fisheries sector

- Small-scale fisheries contribute about 95% of the total fish harvested from the marine water. Emphasis will be given to the small scale fisher communities in the coastal areas.

- Special measures will be taken to limit the uncontrolled fish harvest from the marine environment.
- Small scale fishers in the coastal region will get fish harvesting rights. A separate fish harvest area will be demarcated for the small and large scale fishers. This will be determined on research and survey results and information on commercial harvest. For these reasons, the existing rules and regulations will be updated.
- Research and surveys will be conducted under local and international programmes to develop capacity for using modern fish harvest techniques.
- Special emphasis will be given to the life and resources of the fisher communities. For this reason, the following programmes will be undertaken:
 - ◊ initiate life and resource (e.g.: boat, engine, nets, and fish) insurance policies;
 - ◊ each fishermen-boat must contain life saving utilities and radio; and
 - ◊ strict measures will be taken to control sea robbery.
- To increase working efficiency and family income of the fisher communities, appropriate training programmes will be developed on new and modern fish harvest techniques, fish conservation, distribution, processing and preservation.
- Supervised loan systems will be developed against the present mortgaged-based loan system.
- Infrastructure facilities of the coastal fish landing centres will be developed to reduce spoilage of fish.
- Prior permission will be required for the construction of fish landing centres and establishment of fish retail markets at private level.
- Appropriate technology will be adopted for the conservation of marine fisheries resources to increase fisheries production.

Some other related issues

- The Department of Fisheries will be the authority to issue, cancel or renew licenses for fishing vessels and other implements for the proper management of marine fisheries resources.
- All fishing vessels or units will be ready to supply required technical information to the Department of Fisheries.
- Registration systems will be executed for fish and shrimp hatcheries to control quality.
- Emphasis will be given to export shrimp of different species, fish, turtles and other aquatic species instead of existing 2 or 1 shrimp species.
- Differentiation and diversification of the presentation of processed products of shrimp, fish, turtle, etc. will be initiated. Technologies related to produce different value added products will be encouraged, based on international demand.
- For effective implementation of the NFiPo, emphasis will be given to the following four sub-sectors:
 - ◊ inland closed water bodies;
 - ◊ inland open waters;
 - ◊ coastal shrimp and fish culture, and
 - ◊ marine fisheries resource conservation and management.

- Production and exploitation of hilsa will be improved through identification and conservation of their breeding and grazing grounds, and removal of any obstructions to their anadromous migration routes (from coastal areas to the inland water bodies)

Comments:

In terms of targets, the policy aims at exportable surpluses rather than self-sufficiency. There is no upper-limit set for fish production. Quality, rather than marketable quantities, appears to limit demand. Export of turtles is being emphasized in this policy. This may conflict with conservation of endangered species of the government.

NFiPo's aim to expand fisheries areas and integrate rice, fish and shrimp cultivation highlights the problem of benefiting farmers and fisher folk simultaneously and may conflict with an ICZM approach in waterlogged areas. Care needs to be taken that shrimp culture, whilst it is to be promoted in the coastal regions, should not cause damage to mangrove forests.

The NFiPo states that 'harvest of fish and shrimp by the trawlers in the shallow coastal areas (within 40 m depth) will be banned'. In addition, an assessment of present and planned measures to encourage fishing in the deep sea has to be made.

3.7 National policy for safe water supply and sanitation (MoLGRD&C, 1998)

The Local Government Division of the Ministry of LGRD and Co-operatives published this policy. The goal of the policy is to ensure that all people have access to safe drinking water and sanitation services at an affordable cost.

The policy distinguishes between rural and urban areas but does not treat the coastal zone separately. However, the policy recognises intra- and inter-regional disparities. The policy mentions that the ratio of people per tube-well is around 70 in the areas with shallow water tables and 200 and 300 in the coastal areas and areas with low water tables, respectively. Without mentioning the coastal zone, the principle is to 'assigning priority to under-served and un-served areas'.

The objectives of this important policy are to improve the standard of public health and to ensure improved environment through the following steps:

- ◇ facilitating access for all citizens to basic levels of services in water supply and sanitation;
- ◇ bringing about behavioural changes regarding the use of water and sanitation;
- ◇ reducing the incidence of water-borne diseases;
- ◇ building capacity in local governments and communities to deal more effectively with problems relating to water supply and sanitation;
- ◇ promoting sustainable water and sanitation services;
- ◇ ensuring proper storage, management and use of surface water and preventing its contamination;
- ◇ taking necessary steps for storage and use of rain water; and
- ◇ ensuring storm-water drainage in urban areas.

The National Policy for Safe Water Supply and Sanitation (NPOSWSS) specifies the following targets to be achieved within the near future:

- (i) increasing the present coverage of safe drinking water in rural areas by lowering the average number of users per tube well from the present 105 to 50;
- (ii) ensuring the installation of one sanitary latrine in each household in the rural areas and improving public health standard through inculcating the habit of proper use of sanitary latrines;

- (iii) making safe drinking water available to each household in the urban areas;
- (iv) ensuring a sanitary latrine within easy access of every urban household through technology options ranging from pit latrines to water-borne sewerage;
- (v) installing public latrines in schools, bus stations and important public places and community latrines in densely populated poor communities without sufficient space for individual household latrines;
- (vi) ensuring supply of quality drinking water through observance of accepted quality standards;
- (vii) removal of arsenic from drinking water and supply of arsenic-free water from alternate sources in arsenic-affected areas;
- (viii) taking measures in urban areas for removal of solid and liquid waste and their use in various purposes. Ensuring the use of waste for the production of organic fertiliser (compost) in rural areas.

Comments:

The NPoSWSS is generally consistent with the development objectives for the coastal zone. The policy elaborates and quantifies a number of the strategies for the country as a whole. Although the presence of arsenic is viewed as of grave concern, little attention is given to the problem in the policy. Also, little attention is given to rain harvesting, which is gaining popularity in the saline coastal belt and coastal islands. Promoting this technology could be recommended pending full service by tube wells. The coastal community has identified scarcity of drinking water as a key problem. There are some on-going projects dealing with drinking water supply in the coastal belt.

3.8 National agricultural policy (MoA, 1999)

The overall objective set out in the National Agricultural Policy (NAPo) is to make the nation self-sufficient in food through increasing production of all crops including cereals and ensure dependable food sector security arrangements for all. The policy does not distinguish the coastal zone separately but all 18 specific objectives are applicable to the development of coastal zone agriculture.

Under *Crop Production*, the policy states: ‘special development programmes will be taken-up with a view to increasing the production of potential crops suitable for the coastal area’.

Under *Minor Irrigation*, the policy states: ‘suitable projects will be taken-up for building water reservoirs to capture tidal water and thereby expanding mechanized irrigation facilities in the coastal areas’.

Under *Agriculture Research*, the policy states in general: ‘soil and Agro-Ecological Zone (AEZ) specific research’; and ‘region-wise research on irrigated and rain-fed cultivation’. Specific mention is made of: ‘research on the development of improved varieties and technologies for cultivation in coastal, hilly, water-logged and salinity affected areas’.

The policy recognises ‘water logging and salinity’ as serious problems in the coastal area, which is not only a threat to agricultural activities but can cause great damage to the overall environment’. The steps to be taken by the government in this respect are the following.

- Measures will be taken to resist water logging and farmers will be motivated to follow appropriate crop rotation as well as to practice crop and fish culture by turns.
- Salt-tolerant crop varieties will be developed and extended along with possible measures to resist salinity.

- Although earning of foreign exchange is largely attributed to the shrimp culture in the southern saline areas, saline water together with shrimp enclosures in adjacent areas have been a source of environmental pollution. In this respect, realistic steps will be taken in the light of the already formulated Fish Policy (MoFL, 1998).

The New Agricultural Extension Policy of 1996 will continue to be implemented through the Department of Agricultural Extension (DAE) with the objective of promoting sustainable technologies for improved crop production systems. Private sector, NGOs and farmers are to assist in strengthening research-extension linkages. DAE is also assigned the responsibility under NAPo for the development and maintenance of an agricultural database, which is to be displayed publicly. The DAE district offices are to be responsible for collecting, compiling and preserving this information, and are to be equipped appropriately. Environmental concerns are addressed through promotion of integrated pest management and an increased use of composted fertilisers. Social concerns relate to the protection of the interests of small and marginal farmers.

Comments:

The key point of the NAPo in relation to ICZM is its simultaneous recognition of the importance of shrimp farming as foreign exchange earning activity and its environmental consequences. However, the policy does not mention conflicts between farmer and shrimp-gher owners and thus fails to indicate any mitigation measures. Land use zoning may offer instruments to reduce conflicts. Bio-saline agriculture, practiced elsewhere, could be tried in the coastal zone.

3.9 Industrial policy (MoI, 1999)

The vision of the 1999 Industrial Policy (IPo) is that within a decade the industrial sector will contribute from its current 10% of GDP to at least 25% (MoI, 1999). The industrial workforce is expected to double from the 10% presently employed in this sector. A vibrant and private sector is envisaged operating within liberalised internal and external markets. Labour-intensive manufacturing is seen as the core business, whilst not precluding high-tech niche markets.

The prime objectives of the IPo are to accelerate industrial growth led by private sector investments and production. Other objectives are to: diversify and expand exports; disperse medium and small-scale industries throughout the country through suitable measures and incentives; build up indigenous capacity; and rehabilitate deserving sick industries.

Agro-based industries, frozen food and tourism are some of ‘thrust industries’ more relevant to the coastal zone.

The policy emphasizes on enforcement of the Environmental Protection Act 1995 to control industrial pollution of the environment. The policy also encourages industries to obtain ISO-14000 certification.

Comments:

Two of the industrial zones, Chittagong & Khulna and both the sea ports Chittagong & Mongla, are located in the coastal zone. Yet, no specific mention has been made on protection of coastal environment from industrial pollution.

It may be noted that the IPo, like the National Land Use Policy (NLUPo), sheds no light on the issue of industrial zoning and targeted growth locations in the country. However, tax holidays are available for Foreign Direct Investments (FDI) in Khulna, Barisal, and Chittagong in the coastal zone.

3.10 National water policy (MoWR, 1999a)

The National Water Policy (NWPo) recognises water as central to the way of life in Bangladesh and the single-most important resource for the well-being of its people (MoWR, 1999a). It also recognises that water resources management in Bangladesh faces immense challenge for resolving many diverse problems and issues.

The NWPo defines six broad objectives, reviews topics under 16 heads, and concludes with sections dealing with the institutional policy and the legislative framework. These objectives are set out as guiding principles rather than as specific targets for implementation. The six broad objectives do not specify the coastal zone separately.

Through its responsible agencies, the Government will ‘plan and implement schemes for reclamation of land from the sea and rivers’.

In respect of water supply and sanitation, the policy recognises ‘salinity intrusion from seawater deep into the land in the southwest are rendering groundwater unfit for consumption’. The policy favours means of ‘rainwater harvesting and conservation’. The policy also recognises ‘excessive water salinity in the southwestern region is a major deterrent to industrial growth’.

In respect of water and environment, the policy states that ‘poor water quality affects the availability of fresh water for different uses. Related environmental problems are: contamination of surface water bodies and groundwater aquifers; excessive soil erosion and sedimentation; water logging and salinisation of agricultural land; groundwater depletion; watershed degradation and deforestation; reduction of biodiversity; wetland loss; saltwater intrusion; and coastal zone habitat loss. Policies, relevant for coastal zone, are:

- ◇ to ensure adequate upland flow in water channels to preserve the coastal estuary eco-system threatened by the intrusion of salinity from the sea; and
- ◇ to stop unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted lands.

The policy emphasizes to ‘investigate thoroughly important flood control and management issues, such as the efficacy of coastal polders, for guiding future policy on structural interventions’.

Comments:

The NWPo does not recognise the coastal zone as a separate zone and the zone itself is embedded, for water management planning, in three southern hydrological regions. This philosophy takes its root from the fact that upland fresh water flow is important for prevention of salinity intrusion in the coastal zone. Safety issues from tidal surge of coastal main-lands and, specially char-lands have not received any mention. The policy, however, suggests investigation on ‘efficacy of coastal polders’. Policy guidelines on measures in response to impacts of global climatic changes such as flooding in the coastal area of Bangladesh have not received any mention. It is expected that the National Water Management Plan will deal with these issues. The ICZM policy note covers some of these issues (MoWR, 1999b).

The NWPo states that the Government will ‘Plan and implement schemes for reclamation of land from the sea and rivers’. The policy document did not elaborate further. Such schemes, on one hand, ‘augment new land’ for already marginalized erosion victims and on the other ‘interfere with coastal eco-system’. Development of a consensus on this issue will be major task of ICZM.

3.11 National shipping policy (MoS, 2000)

The main objective of this policy is to assist and encourage for the overall economic development through: rendering most business helping transportation service; keeping shipping security and environmental matters under due consideration; and ensuring the most effective operation of ports, movement of sea-going vessels and inland navigation sector. The National Shipping Policy (NSPo) describes all elements in three major headings: Sea Port, Sea Transportation and Inland and Coastal Shipping.

The following actions, among others, will be undertaken:

- ◇ development and maintenance of main channels of seaports and main and important channels of inland navigation;
- ◇ development of two existing seaports and installation of a communication network between main river ports, ghat and inland container ports and depots;
- ◇ rendering passenger and cargo carrying services for coastal islands including facilities;
- ◇ ensuring shipping security and saving river ways from environmental degradation; and
- ◇ increasing excavation capacity to protect the navigability of the waterways.

The policy also states that ‘government understand the necessity of government and private sector partnership for the development of inland and coastal shipping, port and shipping activities sector’.

As seaports are naturally located in the coastal area, the policy rightly notes that ‘port is not only the centre of shipping and trade and commerce but also the centre of industry and service activities’ and ‘needs coordinated carrying system organized properly through water and roadways’. At present, port areas have been determined through government gazette notification.

The following statements are, in general, relevant to the coastal zone.

- Excavation and maintenance of waterway entrances of port and front side of jetties are necessary. The government will take necessary steps of excavation works and to keep direction of channels for the navigability of river ways.
- Coastal water areas, entrances of the port and ‘Kharis’ are important national resource areas of Bangladesh. These water areas should be protected from pollution. At present, the responsibility of environmental matters within the port areas is entrusted to the port authorities. The following steps will be taken:
 - ◇ preparation of an environment management strategy for the ports and coastal water areas; and
 - ◇ innovation of rules and regulations, monitoring and management systems to ensure effective control and removal of environmental pollution in the ports and ocean areas.
- In order to encourage and consolidate and environmentally balanced and technology dependent ship-breaking industry, a policy will be prepared by the Ministries of Shipping, Industry and Labour. In order to stop environmental pollution from ship movement, ship building, ship repair and breaking activities, concerned international conventions, protocols, etc., will be introduced and applied.
- Passenger carrying services will be continued in the coastal area for public interest. These services will be run by BIWTC through giving government subsidy until private sectors take over.
- A five-years term dredging plan will be prepared for inland waterways.
- The Department of Shipping will be authorised to prepare rules to prevent environmental pollution by inland marine vessels in the inland river ways, outlets of the river and in coastal areas.

Comments:

The National Shipping Policy is a highly relevant policy document for the coastal zone. This policy deals with many important issues like inland and coastal waterways, dredging and pollution on these waterways and even long-term river basin management. However, no reference has been made to the existing National Water Policy (MoWR, 1999).

Through this policy, importance of ship breaking activities has been recognised along with the resulting concern of pollution. No direction has been mentioned regarding improvement of communication facilities with remote coastal islands. Importance of involvement of private sector has been duly highlighted.

3.12 National rural development policy (MoLGRD&C, 2001)

The National Rural Development Policy (NRDPo) has 7 sections that, in total, consist of 30 sub-sections. This policy aims at: creating an enabling environment; comprehensive village development; stable social and economic development; increasing the opportunities for income generating activities; generating wide-spread self-employment opportunities; ensuring development of physical infrastructure; creating skilled human resources; ensuring equal participation of women; reducing the disparity between the rural and urban areas; and others.

The NRDPo, in general, is applicable to all of the coastal area. However, one of the 30 sub-sections specifically deals with 'Area Specific Special Development Programme' to include, among others, char areas, coastal areas and island. This sub-section mentions the following arrangements.

- Suitable integrated programmes will be taken-up, and their implementation will be ensured with priority, for the development of education, human resources, family planning, agriculture, water resource, physical infrastructure, housing, etc. of these areas.
- For implementation, the local government institutions will be involved and assigned the role of co-ordination.
- Social movement will be conducted to organise and unite people socially with a view to unleashing their potentials and creativity.
- For strengthening and integration, proper management systems will be devised and responsibility will be given to district level local government authorities for co-ordination
- Area specific integrated development programmes will be formulated through assessment of local needs with active participation and involvement of the local people.
- Arrangements will be made for co-ordinating activities of government and non-government organisations in the respective areas.

The sub-section 'Development of Rural Housing' mentions that:

- ◇ prior to new settlement in village areas, specially in island and char areas, necessary layout design has to be done; and
- ◇ families who become landless, displaced, shelterless due to river erosion, will be provided with shelter within a short time on a priority basis and will be rehabilitated in the nearest government Ashrayan/Adarsha Gram project areas.

The NRDPo 2001 is already under active revision of the present government to accommodate 4-tier local government.

Comments

With respect to the development of the rural area, which is crucial to the overall development of the coastal zone, this policy provides a comprehensive picture but lacks specific proposals. The policy does not give 'how' and 'who' of implementation. However, the NRDPo provides the provision of 'area specific special development program' and this provision can be used to develop specific plans for areas within the coastal zone. It is expected that the revised version will be more specific in institutional arrangements specially the involvement of elected local government representatives.

3.13 National land use policy (MoL, 2001)

The National Land Use Policy (NLUPo) observes in its introduction that per capita land availability is gradually decreasing due to the increase in population. The need for a policy, it argues, is to support trends in accelerated urbanization, industrialization and diversification of development activities. The maximum utilization of land and water resources depends on an effective land use plan and would contribute to the gross domestic product of the country. The objectives of the policy are therefore to:

- (i) arrest the continued decrease of agricultural land to ensure food production for the increasing population;
- (ii) prevent indiscriminate and mis-use of land;
- (iii) determine which land would be used for what purposes, develop guidelines for the most appropriate use of land;
- (iv) exercise utmost economy in acquisition of land for implementation of development projects and for urbanisation and other uses of land;
- (v) determine which land would be needed in future for development purposes and earmark and protect those lands (especially khas land);
- (vi) ensure that the use of land is environmentally friendly; and
- (vii) ensure the best possible use of land to support poverty alleviation and enhanced employment opportunities, thus to contribute to arrest the growth of landless households.

The NLUPo states that for a balanced eco-environment and human health, 25% of the total land should be under forest coverage. This can be largely achieved by afforestation on char lands and other suitable lands.

The NLUPo recognises that it is almost impossible to increase the land area of the country. The amount of land obtained through natural accretion processes is not that significant. Land reclamation by artificial means is expensive and effective only in the longer run. Consequently, planning should be limited to the existing and available land resources. That demands special consideration for protection and preservation of all 'khas lands' for the need of future generation.

The policy advocates the establishment of land data banks where, among others, information on accreted riverine and coastal chars will be maintained.

The NLUPo formulates 28 policy statements, of which, the followings are relevant for ICZM:

- ◇ forests declared by the Ministry of Forests and Environment will remain as forest lands;
- ◇ reclassification of forest lands will be prevented; and
- ◇ effective green belts will be created all along the coast.

Comments:

The NLUPo is an important policy document affecting the future developments in the coastal zone and thus deserves special attention. However, this document does not refer to land use conflicts in the coastal zone nor does it introduce zoning as an instrument for managing the scarce land resources in Bangladesh. This policy document is strong on the conservation of 'khas land' for the use by future generations but is not clear on a khas land distribution program of the government. The policy does not favour artificial reclamation of land for being too expensive.

4 A PRELIMINARY ASSESSMENT OF THE POLICY FRAMEWORK

From the earlier descriptions, it appears that an extensive framework of policies has been built up in Bangladesh in the last 10 years. Few policies have an explicit focus or define specific interventions in the coastal zone; most of them refer somehow to the special characteristics of the coastal zone; but all of them propose general actions that have a bearing on the coastal zone. The relevance of the individual policies for ICZM has been indicatively summarized in the respective sections in the chapters 2 and 3.

From an ICZM perspective, the interest is to assess whether and to what extent this policy framework is conducive to ICZM or can be instrumental in implementing ICZM. The starting point in such an assessment would be that ICZM is expected to function within and be complementary to the existing policy and institutional framework. For this purpose, the following questions are addressed in the subsequent sections:

- ◇ how are such common themes of general interest, such as poverty, livelihoods, gender, disaster prevention, and economic growth, addressed;
- ◇ how are issues dealt with that need coordination between and among individual sectors; and
- ◇ what is the status of implementation of these policies?

Concluding comments are presented in a final section.

4.1 Common themes

The following common themes have been identified which are of special relevance to the ICZM objectives of enhancing livelihood conditions and economic growth:

- ◇ poverty & economic growth;
- ◇ environmental issues;
- ◇ empowerment of local communities;
- ◇ local level participation in planning and implementation;
- ◇ disaster preparation and mitigation;
- ◇ gender; and
- ◇ international relations.

Poverty and economic growth

Poverty reduction and economic growth are stated objectives in most of the policy documents.

The NFiPo (1998) emphasizes on ‘creation of self employment to reduce poverty and socio-economic upliftment of the fisher’.

The LDPO (1992) emphasizes on ‘assisting poverty reduction by encouraging landless, marginal farmers, unemployed youth and destitute women to obtain gainful employment through rearing livestock and poultry’.

The NTPo (1992) highlights ‘steps to reduce poverty through creating opportunities for local employment’.

The NFoPo (1994) states ‘by creating employment opportunities, strengthening the rural and national economy, the scope for poverty alleviation and trees and forest based rural development sectors will be extended and consolidated’

The NLUPo (2001) emphasizes on ‘steps for the best utilization of land and arrest the growth of landless’, thereby enhancing employment and reducing poverty.

The national strategy document for poverty reduction introduced an overall approach aiming at targeted poverty reduction encompassing measurable indicators over periods.

Environmental issues

In addition to the EPoIP (1992), the NFoPo (1994), the NWPo (1999) and the NSPo (2000) pay relevant attention to environmental issues. In general, there is agreement between different policy documents on the importance of environmental issues, but sector policies do not propose concrete actions in support, for example, of the EnPoIP (1992).

To support biodiversity, the NFoPo (1994) would attempt to increase the amount of protected areas for national parks, wildlife sanctuaries and game reserves by 10 per cent of the reserved forests. The policy goes further ‘keeping in view the ecology, the management of forest lands will be brought under profit-oriented business’. The logic is not explained in the policy document.

The NWPo (1999) recognizes some of the coastal issues such as ‘excessive soil erosion and sedimentation, water logging and salinisation of agricultural land, groundwater depletion, watershed degradation and deforestation, reduction of biodiversity, wetland loss, saltwater intrusion, and coastal zone habitat loss’ as environmental problems. The policy emphasizes, among others, two aspects:

- ◇ ensure adequate upland flow in water channels to preserve the coastal estuary eco-system threatened by intrusion of salinity from the sea; and
- ◇ stop unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted lands.

The NWPo (1999) states that WARPO will set standards of effluent disposal into common watercourses in consultation with DoE.

The NSPo (2000) states that the government will undertake the ‘preparation of an environmental management strategy for the port and coastal water area, keeping conformity with international oceanic pollution convention.

With respect to the *Coastal & Marine Environment* special reference is found in EPoIP (1992), NFiPo (1998) and NSPo (2000). Although this policy environment is elaborate & specific on issues related to marine environment, yet there is a wide gap in translating these policies into activities. It is surprising that ‘turtle export’ is emphasized in the NFiPo (1998).

- The EPoIP(1992) states such policies as:
 - ◇ ensure environment friendly conservation and development of resources available in the coastal and marine eco-systems;
 - ◇ ban all activities resulting in pollution of coastal and marine areas;
 - ◇ strengthen research in conservation and development of coastal and marine resources and environment;
 - ◇ ensure fish harvest from coastal and marine area at maximum tolerable limit; and
 - ◇ Bangladesh Navy will oversee & prevent pollution in territorial water of Bangladesh. Ministry of Shipping will monitor.
- The NFiPo(1998) states:
 - ◇ shrimp harvesting during shrimp breeding season will be banned;
 - ◇ some selected breeding grounds of the sea will be declared as shrimp sanctuaries;
 - ◇ coastal areas will be selected for shrimp farming;

- ◇ projects will be undertaken regarding the presence and abundance of pelagic fish, like tuna, mackerel etc. in the exclusive economic zone;
 - ◇ harvest of fish and shrimp by the trawlers in the shallow coastal areas (within 40 meter depth) will be banned;
 - ◇ expansion of any trawler will be restricted;
 - ◇ small scale fishers in the coastal region will get fish harvesting rights and separate fish harvest areas will be demarcated for the small and large scale fishers;
 - ◇ special measures will be taken to limit the uncontrolled fish harvest from the marine environment;
 - ◇ fish landing centres will be developed to reduce the spoilage of fish, while prior permission will be required for the construction of fish landing centers and establishment of fish retail markets at private level; and
 - ◇ emphasis will be given to export shrimp of different species, fish, turtles and other aquatic species instead of existing 2 or 1 shrimp species.
- The NSPo (2000) includes the following relevant policy statements.
 - ◇ Coastal water areas, entrances of the ports and ‘Kharis’ are important national resources of Bangladesh. These areas should be protected from pollution. At present, responsibility of environmental matters within the port areas is entrusted to the port authorities. The following steps will be taken:
 - * preparation of an environment management strategy for the port and coastal water area; and
 - * innovation of rules and regulations, monitoring and management system to ensure control and removal of environmental pollution effectively in the port and ocean area.
 - ◇ The Department of Shipping will be authorised to prepare rules to prevent environmental pollution by inland marine vessels in the inland river ways, mouths of rivers and coastal areas.

*Empowerment of local communities and
local level participation in planning and implementation*

All policy documents, in general, promote local level participation in planning & implementation and there is full agreement regarding the need for involvement of local level institutions. A number of Ministries have already involved local institutions in their sector programmes. The real challenge will be to integrate activities of different organization in a co-ordinated manner. Capacity of local institutions has to be strengthened.

- The NPoSWSS (1998) states the following in this respect.
 - ◇ Local government bodies at village, union and thana level shall have a direct role in planning, implementation and maintenance of rural water supply and also sanitation.
 - ◇ User Communities shall be responsible for operation and maintenance of water supply facilities and shall bear its total costs. In the near future, concerned communities shall share at least the following portions of the cost: a) 50% for hand tube wells in shallow water table areas; b) 25% for hand tube wells in low water table areas; and c) 20% for deep hand tube wells and other technologies for difficult areas.
- The NFiPo (1998) states that ‘there will be a thana, district, division and national committee. This committee will take care of the development of shrimp production, implement laws related to shrimp culture and mitigate other concerned problems in the coastal zone’.
- The NWPo (1999) mentions the following.

- ◇ The management of public water schemes, barring municipal schemes, with command area up to 5,000 ha will be gradually handed over to local and community organisations and their O&M will be financed through local resources.
- ◇ The government may empower the local government or any local body it deems fit, to exercise its right to allocate water in scarcity zones during periods of severe drought, and it will monitor the water regime and enforcement of the regulations through specifically designed mechanisms.
- ◇ Mandate local governments to create awareness among the people in checking water pollution and wastage.
- ◇ The government will lead the effort towards developing grass-root institutions, in conjunction with the civil society, for managing water resources at community levels.
- ◇ New projects proposed by a community or local institution will be considered for implementation on a priority basis only when the beneficiaries have mobilised a certain percentage of the total cost as their contribution to the project.

Disaster management

A 'Comprehensive Disaster Management Plan' is being prepared. There is need that issues of disaster prone coastal zone are fully incorporated in one integrated plan. Several sector policies make specific reference to disaster management.

- The NFoPo (1994) recognizes the role of massive and planned tree plantation in the coastal areas to reduce the velocity and intensity of cyclone, tornado and tidal bore.
- The NPoSWSS (1998) states that necessary measures shall be taken to prevent contamination and damage of tube wells during natural disaster. DPHE shall store enough materials and spares to take immediate action for repairing or installing tube wells.
- The NWPo (1999) suggests that the government will 'develop early warning and flood-proofing systems to manage natural disasters like flood and drought'. The policy did not refer to such disasters as tidal surge, cyclones, etc., relevant to the coastal zone. For disaster preparedness, the NWPo suggests 'designation of flood risk zones' and elaborates that 'regions of economic importance such as metropolitan areas, sea and air ports, and export processing zones, will be fully protected against floods as a matter of first priority'.

The risks from Global Climatic Change have not received attention in any of the policy documents. However, the World Bank has recently prepared a document: 'Bangladesh: Climatic Change and Sustainable Development' (WB, 2001), recommending possible adaptive measures. This document might be helpful to formulate sector policies in relation to impacts of climatic changes and sea level rise.

Gender

All most all policies have mentioned about gender equity and the increased role of (rural) women in all spheres of national development. Some policies indicate participation of women in specific activities: direct participation of women in afforestation programme (EPoIP 1992, NFoPo 1994), rearing of cattle, goat and poultry (LDPo 1992), management of water resources (NWPo 1999), fish culture (NFiPo 1998). Most policies have set objectives to create higher income and employment opportunities for women, particularly destitute women. The NPoSWSS (1998) states that women will be supported to actively participate in decision making during planning, operation and maintenance of rural water supply and sanitation and in hygiene education. The NWPo (1999) stressed the need for creating enabling environment for participation of women in local community organisations for water management. The NEdPo (1997) emphasizes on elimination of gender bias in education, the IPO

(1999) emphasizes on skill development. Ultimately, the NPoAW (1997) provides an extensive framework for implementing strategies aiming at improving women's fate and stressed the need on cooperation between government and non-governmental organizations at all levels.

International relations

International relations and aspects are manifold. They not only refer to international agreements and conventions to be taken into account in management of the coastal zone but they also refer to regional and cross-border impacts such as polluted waters, affecting the coastal zone of Bangladesh. In addition, international relations may be important to share experience in management and developing policies in the coastal zone. Relevant statements in the reviewed policies are little.

- The EPoIP (1992) calls for regional co-operation 'to handle accidental pollution of coastal waters'.
- The NWPo (1999) emphasizes on co-operation with co-riparian countries, in relation to river basin management. The following two points are particularly relevant for the coastal zone:
 - ◊ make concerted efforts for management of the catchment areas with the help afforestation and erosion control for watershed preservation and reduction of land degradation; and
 - ◊ work jointly for the prevention of chemical and biological pollution of the rivers flowing through these countries, by managing the discharge of industrial, agricultural and domestic pollutants generated by human action.
- The NSPo (2000) calls for effective discussion regarding river basin management with neighbouring countries. Matters of discussion identified are: exchange of data regarding hydrology and weather; afforestation and prevention of erosion to protect watersheds; and reducing degradation of soils.

4.2 Coordination between and among sectors

Though most policies deal with several issues that require some form of coordination (PDO-ICZM, 2003) between and among different GoB agencies, the following issues have been identified that were explicitly mentioned in or subject of different policies:

- ◊ land use zoning;
- ◊ land accretion and reclamation /erosion;
- ◊ agriculture and irrigation;
- ◊ fisheries;
- ◊ forestry;
- ◊ water supply and sanitation;
- ◊ industrialization; and
- ◊ tourism.

In none of the policies concrete actions are proposed how to bring about the required coordination. This appears to be a delicate affair and often has proven to be a major bottleneck in implementing policies. In addition to lack of willingness of agencies to coordinate, coordination might be hampered by practicalities beyond their control that can be of one of the following types:

- ◊ jurisdiction or ownership of resources not well defined;
- ◊ unclear or overlapping legal responsibilities;
- ◊ unclear or unspecified institutional mandates; and
- ◊ insufficient resources available with the implementing agencies.

The following sub-sections present more detail on the above listed issues and the policies in which they are addressed.

Land use zoning

Zoning has different connotations. Sector policies mostly will be implemented taking into account special regional characteristics. More importantly, however, zoning refers to an instrument to manage land use. The responsible agency for guiding and leading the concept of land zoning is naturally the Ministry of Land. The NLUPo (2001) adopted by the MoL, however, has not mentioned anything about land zoning.

With respect to regional differentiation, two policies have made statements relevant for ICZM.

- The EPoIP (1992) encourages land uses depending on eco-system prevailing at different parts of the country
- The NWPo (1999) emphasizes that: ‘activity for planning and management of the nation’s river systems is undertaken within the context of hydrological regions’ and states that the Water Resources Planning Organisation (WARPO) will delineate the hydrological regions of the country, based on appropriate natural features, for planning the development of their water resources. The WARPO has, of late, delineated 7 hydrological regions whereby the coastal zone is spread over 3 different regions.

Land accretion and reclamation / erosion

Four policies refer to the aspects of land reclamation, accretion and erosion.

- The EPoIP (1992) emphasizes that efforts should be strengthened for land reclamation, erosion protection, soil fertility and reduction of soil salinity & alkalinity This policy also mentions about transferring newly accreted land to the Department of Forestry on a priority basis to stabilize and protect from erosion.
- The NFiPo (1994) mentions that ‘effective measures will be taken for afforestation in the newly accreted char in the coastal areas, as it protects soil and reduce the velocity and intensity of cyclone, tornado and tidal bore’. Afforestation also helps in stabilization of newly accreted land.
- The NWPo(1999) suggests to:
 - ◊ undertake surveys and investigations of the problem of riverbank erosion and develop and implement master plans for river training and erosion control; and
 - ◊ plan and implement schemes for reclamation of land from the sea and rivers.
- The NLUPo (2001) recognises that it is almost impossible to increase the land area of the country. The amount of land obtained through natural accretion process is not that significant. Land reclamation by artificial means is expensive and effective only at a longer term perspective. Consequently, planning should be limited to the existing and available land resources.

It appears that several policy documents emphasize on the need for reclamation of land but the NLUPo (2001) did not favour artificial land reclamation at all. Moreover, the NFiPo (1998) cautions against any obstruction to the anadromous migration routes of Hilsha fish (from coastal areas to the inland water bodies).

Agriculture, aquaculture and irrigation

Agriculture is subject of the NApO (1999) but is considered here in conjunction with the NFiPo (1998), dealing with aquaculture, the NWPo (1999), dealing with availability of water for both these

sectors and the EPoIP (1992) dealing with the environmental impacts of agriculture. In general, there is agreement between different policy documents. However, the conflict between different uses of coastal zone land like uses of land for paddy cultivation, for salt production, for shrimp cultivation, for coastal afforestation or mangroves should be resolved. A consensus is important to find formula to determine proper land use.

- The NApO (1999) states that ‘special development programmes will be taken-up with the aim to increase production of potential crops, suitable for the coastal area’ and ‘suitable projects will be taken-up for building water reservoirs to capture tidal water and thereby expanding mechanized irrigation facilities in the coastal areas’.
- The NFiPo (1998) incorporates a ‘Coastal Shrimp and Aquaculture Policy’ which states that ‘measures will be taken to conserve biodiversity in the coastal region and necessary steps will be taken to culture fish/shrimp along with rice crop, either in rotational or concurrent phases.’
- The NWPo (1999) will ‘support the private development of groundwater irrigation for enabling agricultural growth to continue, alongside surface water development where feasible. But there will be a renewed focus towards increasing efficiency of water use in irrigation through various measures including drainage-water recycling, rotational irrigation, adoption of water conserving crop technology where feasible, and conjunctive use of groundwater and surface water’. Specific needs of the coastal agriculture and irrigation have not been mentioned. The NWPo (1999) will ‘encourage and promote continued development of minor irrigation, where feasible, without affecting drinking water supplies’.
- The EPoIP (1992) emphasizes environment friendly efforts & technology to attain self-sufficiency in food and agriculture. This also encourages increased use of natural fibre like jute and jute products. The policy discourages use of wood and farm wastes as fuel.

Fisheries

Main impact bearing policies are the NFiPo (1998) and the NWPo (1999).

- The NFiPo (1998) contains a Coastal Shrimp and Aquaculture Policy which states:
 - ◊ measures will be taken to conserve biodiversity in the coastal region and necessary steps will be taken to culture fish/shrimp along with rice crop, either in rotational or concurrent phases;
 - ◊ demonstration shrimp farms will be established; and
 - ◊ proper training will be given to the fry catchers to reduce mortality of fry or larvae during exploitation and transportation period and adequate infrastructure facilities will be established.
- The NWPo (1999) specifically mentions that ‘water development plans will not interrupt fish movement and will make adequate provisions in control structures for allowing fish migration and breeding’ and ‘brackish aquaculture will be confined to specific zones designated by the government for this purpose’. The NWPo (1999) recognizes that ‘a hydropower facility may be restrictive for fish movement’.

An unrestricted development of brackish aquaculture is damaging local ecosystems and a land use zoning is needed to resolve conflicting land use.

Forestry

An important focus, in different policies, is to guarantee a minimum coverage of forest in the country: NLUPo (25%), EPoIP (25%) and the NFiPo (20%). This may cause a conflict with agriculture and

other growing land uses such as industry and recreation. In this respect, it has to reassessed whether a policy of ‘25% of the area of Bangladesh to be afforested’ is a realistic one. Other cross sector issues in relation to forestry are:

- The EnvPoIP (1992) demands that interventions in fisheries & livestock development should not have negative impacts on mangrove forests and other eco-system
- The NFiPo(1998) states that ‘Expansion of shrimp culture in mangrove forest or destruction of mangrove forest will be completely banned. In order to ensure ecological balance, tree plantation will be encouraged in shrimp culture areas’.
- The NLUPo (2001) states that for balanced eco-environment and human health, 25% of the total land should be under forest coverage. This can be largely achieved by afforestation on char lands and other suitable lands.

Water supply and sanitation

Water supply and sanitation is subject of both the NPoSWSS and the NWPo. In general, there is agreement between different policy documents on water supply and sanitation issues. Measures of arsenic mitigation are of concern.

- The NPoSWSS (1998) mentions that the ratio of persons per tube well is around 70 in the areas with a shallow water table, and 200 and 300 in the coastal and low water table areas, respectively. Without mentioning the coastal zone explicitly, the principle is to ‘assigning priority to under-served and un-served areas’.
- The NPoSWSS (1998) states that in each and every village of Bangladesh, at least one pond will be excavated/re-excavated and preserved for drinking water. Necessary security measures will be undertaken to prevent water of the pond from contamination. To encourage safe sanitation, the policy states ‘use of organic waste material for compost and bio-gas will be promoted’.
- The NWPo (1999) identified that ‘salinity intrusions from seawater deep into the land in the southwest are rendering groundwater unfit for consumption’ but did not make any policy statement to address this. However, the document suggested to ‘facilitate availability of safe and affordable drinking water supplies through various means, including rainwater harvesting and conservation’.

Industrialization

In general, there is agreement between different policy documents on industrialization issues (NTPo, NFoPo, NFiPo, NWPo). Two of the industrial belts, Chittagong & Khulna and both the sea ports Chittagong & Mongla are located in the coastal zone. Protection of coastal environment from industrial pollution is an important concern for ICZM.

- As per IPo (1999), ‘Forest plantation and mechanized extraction within the bounds of reserved forests’ is regarded as Reserved Industries and ‘Agro-based Industries’, ‘Frozen Food’, ‘Oil & Gas’ and ‘Tourism’ as Thrust Industries.
- The NTPo (1992) mentions that ‘tourism should be accepted as a priority industry’.
- The NFoPo (1994) mentions that ‘steps will be taken to bring state owned forest-based industries to competitive and profit-oriented management systems’ and that ‘emphasis will be imparted on modernization of forest-based industries to ensure effective utilization of the forest raw materials’.
- The NFiPo (1998) states that ‘shrimp farming will be considered an export industry and like other such industries, shrimp industry will be given proper facilities’.

- The NWPo (1999) recognizes that ‘excessive water salinity in the southwest region is a major deterrent to industrial growth’. The policy of the government will be that ‘zoning regulations will be established for location of new industries in consideration of fresh and safe water availability and effluent discharge possibilities’. The implication of such a policy would be that new industries would not be encouraged in the saline coastal zone of Bangladesh.

Tourism

Development of tourism is a cross-sectoral issue as well and needs concerted actions between a few main government agencies. Tourism was mentioned in the N FoPo and the NWPo. In general, there is agreement on the importance and the need to promote tourism, specially eco-tourism.

- The NTPo (1992) states these policies:
 - ◊ wild-life conservation with tourism masterplan for the Sunderbans;
 - ◊ development of Cox’s Bazar sea beach;
 - ◊ development of Kuakata and sea beaches in southwestern Bangladesh; and
 - ◊ delineation of special areas or islands for foreign tourists and development through private sector involvement.
- The N FoPo (1994) regards ecotourism, related to forest and wildlife, as forest related activity and ‘to be promoted taking into consideration the carrying capacity of nature’.
- The NWPo (1999) supports use of water for recreational purposes and its relationship for developing tourism facilities.

4.3 Implementation and harmonization

The formulation, but above all the implementation needs adequate institutional and legal arrangements, including mechanisms for harmonization of policies and corresponding actions, enforcement and monitoring to account for progress. These appear to be weak spots, as in many countries, partly due to its relative young experience with these mechanisms of governance. These issues will have explicit attention under the ICZM approach. Here it suffices to record how different policies refer to the institutional and legal issues.

In addition, a summary is given of the findings of a separate study assessing implementation of policy statements (PDO-ICZM, 2003).

Institutional issues

It appears from various policy documents that each sector has proposed its own institutional mechanism. This usually works reasonably well in implementing sector activities and programmes. Co-ordination with other sectors is usually loose and even not existing at all. Below a summary is given of institutional issues as addressed in the various policies.

- The E PoIP (1992) states that the Ministry of Environment & Forests will be responsible for co-ordination of activities under the policy. The Department of Environment is responsible for review and approval of all EIAs.
- The NTPo (1992) will be implemented by an Inter-Ministerial Committee and supervised by a National Tourism Council. The decisions of the Council will be mandatory for all relevant ministries.
- The N FoPo (1994) calls for strengthening the Forest Department to achieve the goal and objectives. It proposes establishment of the ‘Department of Social Forestry’.

- The NEnPo (1996) proposes a new regulatory organisation (National Energy Authority) to be set up to facilitate co-ordination of the activities related to the future development of non-renewable energy. This also proposes establishment of Renewable Energy Development Agency (REDA) for meeting challenges of planned development of renewable technologies.
- The NFiPo (1998) calls for the Central Shrimp Cell is expanded up to the field level in order to provide services to the shrimp farms. The Dept. of Fisheries will be the authority to issue, cancel or renew licenses for fishing vessels and other implements for the proper management of marine fisheries resources. A registration system will be implemented for fish and shrimp hatcheries to control quality. The quality control system of the Dept. of Fisheries will be strengthened through the implementation of quality control laws on processed fisheries products. A Fisheries Bank may be established for easy sanctioning of loans.
- Regarding water supply and sanitation, the NPoSWS (1998) states that the Local Govt. Division of the Ministry of Local Government, Rural Development & Co-operatives will be responsible for overall planning, identification of investment projects and co-ordination of activities of agencies under it (viz. DPHE, LGED, WASAs).
- Regarding water resources management, the NWPo (1999) states that the National Water Resources Council (NWRC), through its Executive Committee, will coordinate all water resources management activities in the country with WARPO being the exclusive government institution for macro-level water resources planning.
- The National Shipping Policy (2000) states that the government will constitute a National Port Council. The council will comprise government representatives, port authorities, other organisations and port users. The function of the Council will be to advise the government on different matters relating to port operation. The NSPo (2000) desires effective inter-ministerial discussions so that negative effects of irrigation and flood control projects on navigability becomes less.

Legal issues

The legal environment is not specifically covered in the policy documents. Only a few policy statements have been given on the status of act and subsequently received legal patronage.

- The NPoSWS (1998) plans, within a specified period, to enact legislation for making use of sanitary latrine compulsory.
- The National Water Code will provide the appropriate legislative framework to facilitate implementation of the NWPo (1999). The NWPo is vague in that 'the Govt. will further frame rules, procedures, and guidelines for combining water-use and land-use planning'. It is not clear which organization will undertake this task of crucial integration of planning.
- A Marine Pollution Ordinance has been passed in parliament, which is mainly effective to prevent pollution of coastal areas and seaports. The NSPo (2000) states that no organisation has been set up for implementation of rules and regulations regarding this. In order to fill this vacuum, the Department of Shipping will be authorised to prepare rules to prevent environmental pollution by inland marine vessels in the inland river ways, outlets of rivers and in coastal areas.

Implementation

The PDO-ICZM recently conducted an assessment of the status of implementation of policy statements. A total of 296 policy statements related to the coastal zone have been identified from 16 different policy documents. Successful implementation of policy statements generally involves many

ministries, departments and agencies. There may or may not be a single/few items which can be wholly implemented by the sponsoring ministry or department. This very nature of policy statements calls for support from many agencies and thereby is a concern for implementation. For implementation of many issues of the policies of the govt., the ministries have to pass through a detailed process of harmonization and coordination of various types of inter-departmental and inter-organizational activities. In respect of implementation, policy statements can be divided:

- *Issues requiring internal mobilization within the sponsoring ministry*
- *Issues requiring support from other relevant ministries*
- *Issues requiring support from financial & planning organizations including development partners*
- *Issues requiring public participation/participatory management*
- *Issues relating to the sponsoring ministry vs. legal institutions*
- *Issues requiring approval of the highest office/Cabinet*

However, most of the policy statements fall into overlapping categories and require concurrence of many related agencies.

There were limitations in assessing implementation status because of the nature of policy statements. It was difficult to make a straightforward assessment of implementation. Only 14 policy statements can be specifically identified as implemented and further 81 statements as generally implemented. These are mostly regulatory functions of the Ministries / agencies. In total, only 32% of the statements have been implemented.

Activities related to a large number of policy statements have been initiated and represent as the ongoing activities of the concerned agencies. These have not yet attained the status of full implementation, because the improvement as envisaged in the items of the policy have not yet been attained. A total of 42 policy statements have been identified as not implemented.

4.4 Concluding comments

- The individual policies contain many statements that make sense in the context of ICZM but they are mainly formulated with the narrow sector production oriented objectives in mind. They are not part of an overall framework, for example the FFYP, and it is thus difficult to set rational priorities for their implementation if scarce national resources have to be allocated.
- Still they should provide the context from which the ICZM embarks. ICZM should then provide the criteria for implementation of these policies, adhering to higher order national objectives (such as poverty and sustainability). The interim PRSP is a good example of such an umbrella function.
- This lack of criteria is only one reason behind the embarrassing lack of follow-up actions and implementation of the sector policies. Lack of institutional, financial and human capacities for implementation and monitoring capacity, lack of coordination mechanisms and lack of political motivation in combination, seem main reasons behind these policies having developed into mere window dressing documents.
- Few policies seem to invite for the step of strategy formulation. In cases where it is done, such as in case of the NWPo, efforts aim at the formulation of master plans (blue print planning), rather than on the creation of flexible planning and implementation procedures (process planning), that can be adapted to changed situations and priorities and is based on performance monitoring and continuous feed back with stakeholders.

- The above practice and experience that developed over the last 10 years, provide a weak basis for ICZM to build on. It implies that a successful ICZM, among many other things, should:
 - ◇ create the required and nationally accepted overall criteria for the development of the coastal zone, mainly related to the cross cutting themes as discussed in Section 4.1;
 - ◇ stimulate and facilitate operational interactions between agencies needed to implement sector policies (Section 4.2); and
 - ◇ create a national platform facilitating implementation and corresponding progress monitoring.

5 ROLE OF DIFFERENT ORGANISATIONS IN POLICY DOCUMENTS

Some policy documents elaborated on specific responsibilities and tasks of different institution(s), while other documents mentioned general roles of certain specific institutions. In this section, an attempt is made to give an overview of the organizations mentioned in these policy documents and their allocated roles related to coastal zone issues.

Organisation/agency	Referred policies	Given roles (only related to coastal zone issues)
Government & national agencies		
Ministry of Planning	NPoSWSS (1998)	Strategy consultation, planning and resource allocation, donor liaison.
	NEnPo (1996)	Preparation of a long-term energy plan.
Ministry of Foreign Affairs	NTPo (1992)	Attracting international investments in the tourism industry; promoting tourism through overseas diplomatic missions.
	EPoIP (1992)	Assisting in regional co-operation for the cause of reduction of desertification & salinity.
Ministry of Defence	EPoIP (1992)	Protection of territorial water from pollution; making a Contingency Plan for accidental spillage & pollution; survey, investigations & monitoring for land reclamation, erosion protection, soil fertility and coastal areas; reduction of desertification & salinity through regional co-operation.
Ministry of Water Resources	EPoIP (1992)	Conservation and management efforts (including survey, investigations & monitoring) for land reclamation, erosion protection, soil fertility and coastal areas; maintaining conveyance & storage capacity of rivers and water bodies; reduction of desertification & salinity through regional co-operation; management & conservation of groundwater.
Ministry of Agriculture	EPoIP (1992)	Enhancement of soil fertility & related technology; control of harmful chemical insecticide & pesticide; contribution to National Land use Plan; conservation and management efforts (including survey, investigations & monitoring) for land reclamation, erosion protection, soil fertility and coastal areas.
Ministry of Fisheries & Livestock	EPoIP (1992)	Zoning of coastal area for shrimp farming; natural conservation of frog, fish, lizards, snake, turtle and wildlife.
	NFiPo (1998)	Control of all development, conservation, distribution, other management aspects of fisheries resources.
Ministry of Environment & Forests	EPoIP (1992)	Creation of a new Cell to co-ordinate & monitor activities related to coastal zone environmental management & development activities; survey, investigations & monitoring for land reclamation, erosion protection, soil fertility and coastal areas; natural conservation of frog, fish, lizards, snake, turtle and wildlife; developing appropriate measures so that exploration activities do not have negative impacts on eco-system; reduction of desertification & salinity through regional co-operation; zoning of coastal area for shrimp farming.
	NFiPo (1998)	Consultation to ensure increased shrimp production and maintain ecological balance.
Ministry of Civil Aviation & Tourism	NTPo (1992)	Liasing with the Ministry of Foreign Affairs for promotion of tourism.
Ministry of Commerce	EPoIP(1992)	Control of harmful chemical insecticide & pesticide; responsible import of seed, seedlings & plant;

Organisation/agency	Referred policies	Given roles (only related to coastal zone issues)
Government & national agencies		
		natural conservation of frog, fish, lizards, snake, turtle and wildlife.
Ministry of Shipping	EPoIP (1992)	Maintaining conveyance & storage capacity of rivers and water bodies; protection of territorial water from pollution; making a contingency Plan for accidental spillage & pollution; installation of facilities for waste management & oil spoils from ships at sea ports; setting up of 'Coastal Guards' for security of coastal resources.
	NSPo (2000)	Preparation of a policy for ship breaking industry jointly with Ministries of Shipping, Industry and labour.
Ministry of Industries	EPoIP (1992)	Control of harmful chemical insecticide & pesticide; Contribution to National Land use Plan.
	NSPo (2000)	Preparation policy for ship breaking industry jointly with Ministries of Shipping, Industry and labour.
	NLUPo (2001)	To discourage establishment of industries within 10km radius of the BSCIC estates
Ministry of Power, Energy & Mineral Resources	EPoIP (1992)	Establishment of units of biogas, solar power, wind power and mini-hydroelectric power; appropriate measures so that exploration activities do not have negative impacts on eco-system.
	NEnPo (1996)	Preparation long-term energy plan; co-ordinate the entire range of energy related activities of all the sub-sectors (e.g., non-renewable, renewable, power, rural etc).
Ministry of Land	EPoIP (1992)	Formulation National land use Plan; conservation and management efforts (including survey, investigations & monitoring) for land reclamation, erosion protection, soil fertility and coastal areas; transfer of newly accreted coastal land to DoF for afforestation on a priority basis.
	NLUPo (2001)	Revise regularly estimates of 'khas land' by removing illegal or unutilised occupations
Ministry of Works	EPoIP (1992)	Contribution National Land use Plan.
Ministry of Textiles	EPoIP (1992)	Contribution National Land use Plan.
Ministry of Labour	NSPo (2000)	Preparation of a policy for ship breaking industry jointly with Ministries of Shipping, Industry and labour.
Ministry of Health	NPoSWSS (1998)	Social mobilization and hygiene education.
Ministry of Education	NPoSWSS (1998)	Social mobilization and hygiene education.
Ministry of Social Welfare	NPoSWSS (1998)	Social mobilization and hygiene education.
Ministry of Information	NPoSWSS (1998)	Social mobilization and hygiene education.
Ministry of Women & Children Affairs	NPoSWSS (1998)	Social mobilization and hygiene education.
Ministry of Science & Technology	EPoIP (1992)	Establishment of units of biogas, solar power, wind power and mini-hydroelectric power.
Local Government Division	EPoIP (1992)	Contribution National land use Plan; management & conservation of groundwater.
Rural Development & Co-operatives Division	NRDPo (2001)	Co-ordinate implementation of rural development programmes; establishment of policy and strategy unit
Department of Agrultural Extension (DAE)	EPoIP(1992)	Enhancement of soil fertility & related technology; control of harmful chemical insecticide & pesticide; promotion increased use of bio-fertilizer; responsible for import of seed, seedlings & plant.
Department of Environment	EPoIP (1992)	Create a new Cell to co-ordinate & monitor activities related to coastal zone environmental management & development activities; establishment of units of biogas, solar power, wind power and mini-hydroelectric power.
	NPoSWSS (1998)	Drinking water quality surveillance; setting safe levels of contamination in drinking water.

Organisation/agency	Referred policies	Given roles (only related to coastal zone issues)
Government & national agencies		
	NWPo (1999)	Consultation to set standards of effluent disposal in common watercourses.
Bangladesh Weather Department	EPoIP (1992)	Reduction of desertification & salinity through regional co-operation.
Bangladesh Navy	EPoIP (1992)	Protection of territorial water from pollution; contributing Contingency Plan for accidental spillage & pollution.
	NSPo (2000)	Assistance to BIWTA, if needed, to perform regular hydrographic surveys.
BIWTA	NSPo (2000)	Management and operation of works for inland and coastal shipping; plan and perform regular hydrographic surveys; preparation of 5-year dredging plan for inland waterways.
BIWTC	NSPo (2000)	Operating passenger-carrying service in the coastal area.
Department of Shipping	NSPo (2000)	Regulation of inland and coastal shipping; monitor and supervise work of organisation entrusted with registration activities of river vessel including fishing trawlers; preparation of rules to prevent environmental pollution by inland marine vessels in the inland river way, outlets of rivers and in coastal area.
Port Authorities (Chittagong & Mongla)	NSPo (2000)	Responsible for environmental matters within the port area; preparation of an environmental management strategy for the port and coastal water area.
Bangladesh Parjatan Corporation	NTPo (1992)	Promotion of tourism in national and international for a.
Survey of Bangladesh	EPoIP (1992)	Survey, investigations & monitoring for land reclamation, erosion protection, soil fertility and coastal areas.
	NEnPo (1996)	Geological survey of the whole country.
SPARSSO	EPoIP (1992)	Survey, investigations & monitoring for land reclamation, erosion protection, soil fertility and coastal areas.
Petrobangla	NEnPo (1996)	To complete geophysical survey of the whole country
Department of Fisheries	EPoIP (1992)	Zoning of coastal area for shrimp farming.
	NFiPo (1998)	Authority to issue, cancel or renew licenses for fishing vessels and other implements for the proper management of marine fisheries resources liable for care & management of the declared fish sanctuaries; training of fish farmers; issuing permission for private fish landing centers; issuing licenses for fish processing plants; implementation of quality control laws.
Department of Forests	EPoIP (1992)	Creation of a new Cell to co-ordinate & monitor activities related to coastal zone environmental management & development activities; Contribution to National land use Plan; zoning of coastal area for shrimp farming; conservation and management efforts for land reclamation, erosion protection, soil fertility and coastal areas; transfer of newly accreted coastal land to DoF for afforestation on a priority basis ; responsible for import of seed, seedlings & plants; responsible for natural conservation of frog, fish, lizards, snake, turtle and wildlife.
	NFoPo (1994)	Establishment of new Department called 'Department of Social Forestry'.
Local Government Engineering Department (LGED)	NWPo (1999)	Implementation of FCDI projects having a command area of 1,000 ha or less.
Department of Public Health Engineering (DPHE)	NPoSWSS (1998)	Acting as lead agency to provide co-ordinated input for water supply & sanitation development in rural areas and Paurashavas; organizing emergency repair & installation of tube wells during natural disasters;

Organisation/agency	Referred policies	Given roles (only related to coastal zone issues)
Government & national agencies		
		social mobilization and hygiene education; drinking water quality surveillance; research & development of appropriate technologies; development of training programmes.
Water Resources Planning Organisation (WARPO)	EPoIP (1992)	Management & conservation of groundwater.
	NPoSWSS (1998)	Strategy formulation & implementation.
	NWPo (1999)	Acting as exclusive organization for macro-level water resources planning; preparing and periodically updating of a National Water Management Plan; delineation of hydrological regions of the country; setting standards for effluent disposals in common watercourses.
Bangladesh Water Development Board	NWPo (1999)	Implementing all major surface water development projects and other FCDI projects with command area above 1,000 ha..
Bangladesh Power Development Board	NEnPo (1996)	Hydropower development.
Bangladesh Rural Development Board (BRDB)	NRDPo (2001)	Experiences will be analysed and replication of successful micro-credit programmes will be expanded
Rural Electrification Board	NEnPo (1996)	Research & demonstration on new renewable energy technologies.
Water Supply, Sewerage Authority (WASA)	NPoSWSS (1998)	Acting as lead agency to provide co-ordinated inputs in metropolitan areas water supply & sanitation development; steps to reduce unaccounted-for water; measures for safe drinking water during natural disasters; research & development of appropriate technology; development of training programmes.
Office of the Chief Controller of Exports & Imports	EPoIP(1992)	Responsible for import of seed, seedlings & plants; natural conservation of frog, fish, lizards, snake, turtle and wildlife.
Bangladesh Bureau of Mines	NEnPo (1996)	Leasing of extraction of minerals.
Bangladesh Silk Board	EPoIP (1992)	Contributing to National Land use Plan.
Bangladesh Small & Cottage Industries Corporation	NLUPo (2001)	To reallocate unutilised plots to other interested entrepreneurs to establish industries within specific time
Atomic Energy Commission	NEnPo (1996)	Research & demonstration of new renewable energy technologies.
	NPoSWSS (1998)	Drinking water quality surveillance; research & development of appropriate technologies.
Bangladesh Council for Scientific & Industrial Research (BCSIR)	EPoIP (1992)	Establishment of units of biogas, solar power, wind power and mini-hydroelectric power.
	NEnPo (1996)	Research & demonstration of new renewable energy technologies.
National Institute for Preventive & Social Medicine (NIPSOM)	NPoSWSS (1998)	Drinking water quality surveillance.
Bangladesh Sugar & Food Industries Corporation	EPoIP(1992)	Enhancement of soil fertility & related technology; responsible for import of seed, seedlings & plants.
Bangladesh Forest Research Institute	EPoIP (1992)	Create a new Cell to co-ordinate & monitor activities related to coastal zone environmental management & development activities.
Bangladesh Fisheries Research Institute	NFiPo (1998)	Carrying out fisheries research.
Bangladesh Agri. Research Council	EPoIP(1992)	Enhancement of soil fertility & related technology.
Bangladesh Rice Research Institute	EPoIP(1992)	Enhancement of soil fertility & related technology.
Bangladesh Jute Research Institute	EPoIP(1992)	Enhancement of soil fertility & related technology.
Bangladesh Agricultural	EPoIP(1992)	Enhancement of soil fertility & related technology.

Organisation/agency	Referred policies	Given roles (only related to coastal zone issues)
Government & national agencies		
Research Institute		
Soil Resources Development Institute	EPoIP(1992)	Enhancement of soil fertility & related technology.
Bangladesh Standard Testing Institute	NPoSWSS (1998)	Setting safe levels of contamination in drinking water.
Bangladesh University of Engineering & Technology (BUET)	NEnPo (1996)	Research & demonstration of new renewable energy technologies.
	NPoSWSS (1998)	Research & development of appropriate technology; development of training programmes.
Bangladesh Academy of Rural Development (BARD)	NRDPo (2001)	Relevant training courses to promote co-operative leadership; develop as national repositories of all data on rural development
Rural Development Academy (RDA)	NRDPo (2001)	Relevant training courses to promote co-operative leadership; develop as national repositories of all data on rural development
Co-operatives Academy	NRDPo (2001)	Relevant training courses to promote co-operative leadership; develop as national repositories of all data on rural development
Local government bodies		
Local Governments (UP, Upazila Parishad, City Corporation)	EPoIP (1992)	Natural conservation of frog, fish, lizards, snake, turtle and wildlife.
	NFiPo (1998)	Execution of fish conservation acts; Organization of extension programmes.
	NWPo (1999)	Ensuring participation of project affected persons.
	NRDPo (2001)	Union plans have to be formulated by integrating village plans. In the same manner, Upazila plans will be formulated by integrating union plans while the upazila plans will be integrated into the district plan, that will be reflected in the national plan; ensure prompt and fair distribution of agricultural loans; will preserve crime data and a list of criminals in a chronological order
	NLUPo (2001)	Control housing as per defined guidelines
NGOs & CBOs		
NGOs/CBOs	NFoPo (1994)	Participation in agro-forestry programmes.
	NPoSWSS (1998)	Integrated development of the water supply & sanitation sector; social mobilization and hygiene education; motivational activities; investment in tube wells and sanitary latrines; capacity building; emergency works during natural disasters.
	NFiPo (1998)	Execution of fish conservation acts; training of fish farmers; priority implementers in fisheries extension programmes.
	NWPo (1999)	Assisting in participatory processes.
	NRDPo (2001)	Experiences will be analysed and replication of successful micro-credit programmes will be expanded
Private sector		
Private Sector	NEnPo (1996)	Complimentary roles;
	NPoSWSS (1998)	Increased service coverage; billing & revenue collection; investments in tube wells and sanitary latrines, integrated development of the Water Supply & Sanitation sector; capacity building.
	NFiPo (1998)	Commercial fry production; establishment of hatcheries; establishment of demonstration farms.
	NWPo (1999)	Assisting in participatory processes.

6 TOWARDS A COASTAL ZONE POLICY

Based on a policy note, issued in 1999, the Government of Bangladesh embarked on drafting a Coastal Zone Policy (CZPo). This section summarizes the policy note, gives an overview of ICZM and presents actual but tentative ideas on the CZPo to be drafted.

6.1 Policy note on ICZM

In September 1999, the Ministry of Water Resources released a document on ICZM: “Integrated Coastal Zone Management: Concept and Issues” (MoWR, 1999). This note was prepared by a team of senior officials consisting of the Principal Secretary to the Prime Minister, Secretaries of the Ministry of Water Resources, Ministry of Planning, Ministry of Fisheries and Livestock, Ministry of Land, Chairman, Bangladesh Water Development Board and Chief Conservator of Forests.

This document is approved and regarded as the policy note on ICZM of the Government of Bangladesh.

The policy note provided a characterization of ICZM that has been the basis for the subsequent approach to coastal development:

“ICZM offers a means of balancing the competing demands of different users of the same resource and of managing the resources to optimize the benefits that is consistent with the country’s goals....it has to prove to be an effective general framework for dealing with conflicts arising from interactions of the various uses of coastal areas. It aims at co-ordinated development and management.”

The policy note also identified the issue of poor departmental co-ordination one of the key challenges for coastal development and defined four stages for coastal development programs:

- ◇ policy formulation;
- ◇ strategic planning;
- ◇ program development; and
- ◇ implementation.

The establishment of a Program Development Office was recommended to prepare for implementing ICZM. The four stages provide the basis for identifying the key products that should be delivered through the PDO-ICZM project: the *Coastal Policy*, the *Coastal Development Strategy* and the *Priority Investment Programme* that will then be taken up for implementation by the relevant agencies.

A few excerpts of the policy note merit mention.

- ***Administrative malady.*** Administration in Bangladesh is highly departmentalized. Agencies under different Ministries of the Government have their own narrowly-focused mandate and single-minded devotion to the fulfillment of a mandate is considered to be a virtue. However, development problems do not occur departmentally; *they appear in* a complex web of interrelationships needing concerted efforts by more than one agency. Lack of co-ordination and its pernicious ramifications in our economy and society are no less evident than in coastal zone management. The concepts ‘of Integrated Coastal Zone Management (ICZM)’ has emerged as a response to this sort of administrative malady.
- ***Definition of a Coastal Zone.*** We need not, therefore, 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.

- **Current status of coastal resources management.** Since the liberation of the country, an estimated amount of US\$ 72 million of grant assistance and US\$ 700 million of loan was invested in various development activities in the coastal area. The consequences of various initiatives taken so far for coastal resources management have been mixed.

The negative effects of the project are no less pronounced these days, though these were very little understood when it had all begun.

Cross-dam techniques have been applied in Bangladesh and successful results have been achieved. However, the experience of the development of the vast tract of accreted land is not encouraging. The use of the land was not optimized and these were grabbed by the powerful.

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. Too often, these conflicts are stirred up by unilateral action of central agencies, and local communities in the thanas end up as helpless victims.

6.2 Integrated coastal zone management: an overview²

6.2.1 What is ICZM?

The GoB policy note and a concept note drafted in March 1999 by a Joint Donor Identification Mission (WB/NEDA/WFP, 1999), established the overall goal of coastal development: *to create conditions in which the development of sustainable livelihoods and the integration of the coastal zone into national processes can take place*. Throughout the discussions, *poverty reduction* was and still is seen as the overarching objective of actions in coastal areas. The coastal development goal would be achieved through four inter-related objectives:

- i. the reduction of and development of capacities to cope with the *vulnerabilities* of coastal areas;
- ii. the improvement of *resource management* in the coastal zone;
- iii. the *empowerment* of coastal communities, and especially the poor and women; and
- iv. the preservation and enhancement of *critical ecosystems* and ecological processes.

The principal means to achieve these objectives were defined as follows.

- A process of *harmonization* between the policies and programs of different sectors.
- *Capacity building* to strengthen organizations at the community and local government level and improve links between local, national and intermediate levels. Within this issue, a process of *consultation*, to ensure a more demand-led approach to development, was seen as essential.
- Specific, *targeted interventions* that combined hardware and software investments to reduce vulnerabilities and take advantage of opportunities in different parts of the coast.

² This section is copied from Annex A: position paper and reformulated outputs of the ICZM Dialogue proceedings (WP008) (PDO-ICZM, 2002)

- The improvement of the *knowledge base* needed to create a better understanding of the dynamics of the coastal area and to inform different types of decision making.

Administrative areas (districts) have been used as the basis for *defining the coastal zone*, in large part because one of the key objectives is to build capacities and improve co-ordination in the administrative system. Based on this, the coastal zone is defined as an area of 19 districts. The definition also includes the sea area that falls within the jurisdiction of Bangladesh. It is recognized that many key issues in coastal development will have different geographical distributions that need to be taken into account in the development process. These distributions will be structured into the knowledge base and used in the planning of specific activities. It is also recognized that within the coastal zone some parts are more vulnerable than others to many coastal problems, and as such a sub-category of “*exposed upazilas*”, that border the sea, has been identified.

6.2.2 Why ICZM?

The rationale for having a special approach to the development of the coast is clear: both the problems faced and the development opportunities found in the coast are different to those

. in the rest of Bangladesh, reflecting the delta character and the fact that many parts of the coast are remote, have been settled in comparatively recent times and are delayed in development. The special character of the coastal zone means that specific initiatives are needed to meet the zone’s particular problems *and* that distinctive approaches are needed to realize national policy objectives in fields such as decentralization and the establishment of community-based organizations for different aspects of natural resource management.

One distinctive feature of the coastal area is that the *set of vulnerabilities* that many people face are more varied and more intensive than those faced by even poorer and more vulnerable inland communities. These vulnerabilities are one of the most important features of the poverty found in coastal areas. People in the coastal areas are especially vulnerable because they live in an extremely dynamic estuarine environment facing such threats as: *cyclones and storm surges, floods and drainage congestion, droughts and salinity intrusion, land erosion, tectonic processes, and deteriorating coastal ecosystems*; threats which are affected by climate change and upstream land and water uses. These threats affect every aspect of life and limit the livelihood choices that people can make. This can be direct: through destroying property and reducing production. It can be indirect, with people becoming risk adverse and limiting their investments and devoting scarce resources to investments needed to reduce their vulnerability. The poor are typically ‘risk minimizers’ rather than ‘profit maximizers’. This is not because they do not understand the difference: it is an inevitable response to living under minimum conditions for survival, lacking any resilience to disruptions in its livelihoods base from these shocks, variations and trends.

The 1999 Concept Paper [PDO-ICZM, 1999] identified the following conditions that characterize the limitations of livelihoods in the coastal area of Bangladesh have in coping with the estuarine dynamic conditions:

- ◇ widespread *poverty*, limited livelihoods opportunities (especially outside agriculture) and poorly developed *economic linkages*, including poor access to markets, that are even more severe than in other parts of rural Bangladesh;
- ◇ poor levels of *service provision* and very poorly-developed *institutional structure* (with both government and non-government institutions poorly represented in many coastal communities) that make the *isolation* of many coastal areas worse;
- ◇ highly *unequal social structures*, with a small powerful elite dominating the mass of people, allied to high levels of *conflict* and poor *law and order*;

- ◇ changing patterns of *land use*, both in the coastal zone (including the growth of shrimp and salt production) and over the catchment as a whole that are affecting the coast's morphology and water resources characteristics; and
- ◇ poor *resource management*, including the unsustainable exploitation of fish resources and poor ground and surface water management (including drainage problems), the clearance of mangroves and other forests and soil fertility management.

These vulnerabilities vary greatly from locality to locality, meaning that some form of zonation of the coast is essential if the impact of these vulnerabilities is truly to be understood. Also important is the ways in which vulnerabilities interact with each other, with most coastal households, and especially the poor in coastal areas, facing *multiple vulnerabilities* that compound each other in terms of both the impact of specific events and the capability of coastal households to recover from these events when they do strike. *Understanding the nature and implications of the ways that different sets of vulnerabilities interact and how that these sets of vulnerabilities vary by geographical location are key issues for sustainable livelihoods improvements and the whole process of coastal development and should be central to the development of coastal policies and programs.*

Coastal development is not just about reducing vulnerabilities. The coastal zone also contains distinctive development *opportunities* that can be instrumental in reducing the poverty of coastal communities and can contribute significantly to the development of Bangladesh as a whole. Some of these opportunities can be realized through actions at the community level and will contribute directly to the goal of reducing poverty in coastal areas, whilst others will contribute to wider development goals and play an instrumental role in advancing the integration of the coastal zone into the nation as a whole. These wider development goals include those set out in the Interim Poverty Reduction Strategy Paper --- as well as assisting Bangladesh to meet existing international obligations under such agreements as the Kyoto Protocol, the Ramsar Convention and the Millennium Development Goals. The distinctive opportunities found in coastal areas include:

- ◇ the *coastal and marine* environment, including mangroves, coastal and sea fisheries, shrimps and other resources that are particular to the coast;
- ◇ *land accretion*, reflecting the delta character of the coast, that provides new settlement opportunities for the growing coastal population;
- ◇ the *oil and gas* fields found in the Bay of Bengal and other potential energy sources like wind, wave and solar energy;
- ◇ *transport and industrial development* opportunities based on the development of the existing port in Chittagong and Khulna; and
- ◇ *recreation and tourism*, including the development of beach resorts and eco-tourism in the Sundarbans and other special environmental areas.

6.2.3 Steps towards ICZM.

An ICZM programme cannot be developed overnight. Based on experience of other countries where ICZM programmes have been established, the following broad preparatory steps are envisaged.

- *Policy formulation.* ICZM discourages piecemeal approaches to coastal development in favor of a balance between a variety of compatible uses whereby economic and social benefits are maximized and conservation and development become compatible goals.
- *Strategic planning.* Strategic planning considers problems and opportunities regarding resources, economic development activities, and social needs in the coastal area and devises a strategy to accomplish ICZM objectives. Two considerations are important in this context.

- ◇ National development decisions have typically targeted single sectors and reflected too little concern about the impact these narrow decisions may cause on other sectors. One purpose of strategic planning is to create the conditions for a consensus on ICZM.
- ◇ ICZM should relate to the broader national economic planning process through components on resources planning, land use planning, and economic planning.
- *Implementation.* Involvement by all levels of government will be required for coastal management programs under ICZM. At one end, local governments are involved because they govern where developments take place, where resources are found, and where the benefits or sufferings are to be felt. At the other end, central government is involved in such issues as: setting boundary conditions on, e.g., the use of resources from a national perspective; dealing with above-regional and international aspects; and concerns; and provide technical assistance.

The policy note recommended that the Ministry of Water Resources would be designated as the lead Ministry and the BWDB or WARPO as the lead agencies for preparing ICZM. Necessary interdepartmental co-ordination was designed through a high-powered inter-ministerial Steering Committee (SC) under the chairmanship of the Honorable Minister for Water Resources with participation from all stake-holder Ministries and agencies under them. A Technical Committee (TC) consisting of all relevant Heads of Departments and representatives from the Universities, NGOs and the civil society, would assist the SC.

For implementing the preparatory phase a small but highly professional project office (PDO) would be set up.

Finally, it was emphasized that initiating ICZM does not mean a moratorium on the execution of on-going or pipeline projects. All activities in the coastal area should go on as programmed.

6.3 Drafting a coastal zone policy (CZPo)

This is one of the six planned outputs of the PDO-ICZM project. The aim is to draft a CZPo before the end of the year 2003 as a consensus-document between the important partners in the ICZM process, reflecting a shared vision and principles. The need for drafting a Coastal Zone Policy, has also been formulated in the ‘Vision for the Integrated Coastal Zone Management (January 2002)’, as follows:

‘A National Policy on Coastal Zone Development, supported and agreed at the proper administrative level, will be needed in order to strengthen integrated management of all coastal affairs. This new policy document will be complementary to existing sectoral policy documents and will be developed in full participation of sectoral ministries, agencies and coastal communities.’

The elaboration of the CZPo will start with a first draft outline produced and circulated for substantive discussion before the end of 2002 and, once the outline is agreed, a draft text of the policy itself produced and again circulated for discussion by mid-2003. Having the policy agreed as soon as possible, at least in a draft form, is important in setting the context for the completion of other project components.

As mentioned, the CZPo has the 1999 GoB Policy Note as a basis, with elaboration especially on the social and spatial importance of the coastal vulnerabilities and opportunities. The policy should also characterize the implementation means. The policy is thus based on two key supporting documents.

- A ‘rich picture’ of vulnerabilities and opportunities in the coast: whom they affect, how important they are, where they are, trends over time.

- Criteria for prioritization: for example, poverty reduction, physical safety, decentralization, economic growth, ecosystems and biodiversity protection, response to climate change and other long term trends, social objectives, in particular equity and gender.

The ICZM Dialogue, organized by the PDO-ICZM project between September 29 and October 6, 2002, discussed and agreed a basic structure for the CZPo outline. This structure would have four main sections.

- *Coastal policy for Bangladesh: an overview.* This section will contain the main justification for a CZPo and a vision of coastal development, based upon an ICZM process that reflects Bangladesh's distinctive needs and character. It will define specific objectives for coastal development and the jurisdiction and extent of the coastal zone. The main stakeholders in coastal development will be identified, along with their role in the development process.
- *Coastal development issues.* This includes the identification of a range of cross-cutting issues central to coastal development, such as ensuring sustainability, protecting biodiversity, generating alternative livelihood opportunities and recognizing the nature of trade-offs amongst multiple and competitive uses of coastal resources. This section also specifies the main elements of a coastal development program around three issues: meeting the basic needs of coastal people, exploiting opportunities for economic development and conserving the coastal ecosystem.
- *Creating an enabling environment.* This reflects the critical importance of ensuring that the right policy and legal framework, the effective institutional context for coastal development and the required information and knowledge for management, exist. The emphasis is on the harmonization of different sector-policies, the generation of a better understanding of coastal development issues, the creation of a regulatory framework (including legal measures where appropriate), supporting de-centralization and de-concentration measures, building institutional capacities and ensuring effective stakeholder involvement in all aspects of coastal development.
- *The management of coastal development.* This section of the CZPo specifies the ICZM framework and addresses procedures and responsibilities for the organization, implementation and monitoring of the coastal development process. It defines the need for time-bound action planning, with periodic updating and review, and specifies the nature of financial commitments needed to realize the objectives of the CZPo. It will include the specification of the main characteristics of the institutional arrangements for policy implementation.

REFERENCES

- BEA, 2002.** National Seminar on Poverty in Bangladesh and PRSP, organized by Bangladesh Economic Association, 5 November, 2002, Dhaka. Special reference to: (i) Keynote paper by Muinul Islam: poverty creation or poverty reduction under PRSP: a case for reviewing and rethinking the role of the state in Bangladesh; and (ii) Chairman's address by Qazi Kholiquzzaman Ahmad: poverty reduction strategy paper – yet another bank-fund edict.
- ERD, 2002.** Bangladesh: A National Strategy for Economic Growth, Poverty Reduction and Social Development (Interim Poverty Reduction Strategy Paper). Dhaka; Economic Relations Division, Ministry of Finance, Govt. of Bangladesh. December 2002.
- MoA, 1999.** National Agriculture Policy. Dhaka; Ministry of Agriculture, Govt. of Bangladesh. April 1999.
- MoCA&T, 1992.** Jatiyo Parjoton Nitimala (*National Tourism Policy*). Dhaka; Ministry of Civil Aviation & Tourism, Govt. of Bangladesh. February 1992.
- MoEF, 1992.** Poribesh Niti 1992 o Bastobayon Karjokrom (*Environment Policy & Implementation Plan*). Dhaka; Ministry of Environment & Forests, Govt. of Bangladesh. 1992.
- MoEF, 1994.** National Forest Policy Dhaka; Ministry of Environment & Forests, Govt. of Bangladesh. 1994.
- MoEP&MR, 1996.** National Energy Policy. Dhaka; Ministry of Energy, Power & Mineral Resources, Govt. of Bangladesh. January 1996.
- MoFL, 1992.** Pashu Sampad Unnoyan Niti (*Livestock Development Policy*). Dhaka; Ministry of Fisheries & Livestock, Govt. of Bangladesh. 1992.
- MoFL, 1998.** Jatiyo Maytsho Niti 1998 (*National Fish Policy*). Dhaka; Ministry of Fisheries & Livestock, Govt. of Bangladesh. 1998.
- MoI, 1999.** Industrial Policy. Dhaka; Ministry of Industries, Govt. of Bangladesh. 1999.
- MoL, 2001.** Jatiyo Bhumi Babohar Niti (*National Land Use Policy*). Dhaka; Ministry of Land, Govt. of Bangladesh. 2001.
- MoLGRD&C, 1998.** National Policy for Safe Water Supply & Sanitation. Dhaka; Local Government Division, Ministry of Local Government, Rural Development & Cooperatives, Govt. of Bangladesh. July 2001.
- MoLGRD&C, 2001.** Jatiyo Palli Unnoyan Niti 2001 (*National Rural Development Policy 2001*). Dhaka; Rural Development & Cooperatives Division, Ministry of Local Government, Rural Development & Cooperatives, Govt. of Bangladesh. July 2001.
- MoP, 1998.** *The Fifth Five-Year Plan 1997-2002*. Dhaka; Planning Commission, Ministry of Planning, Govt. of Bangladesh. March 1998.
- MoS, 2000.** *National Shipping Policy-2000*. Dhaka; Ministry of Shipping, Govt. of Bangladesh. 2000.
- MoWR, 1999a.** *National Water Policy*. Dhaka; Ministry of Water Resources, Govt. of Bangladesh. January 1999.
- MoWR, 1999b.** Integrated Coastal Zone Management: Concepts and Issues; a GoB Policy Note. Dhaka: Ministry of Water Resources. September 1999.

PDO-ICZM, 2001. Coastal Zone Management: An Analysis of Different Policy Documents. Dhaka; Program Development Office- Integrated Coastal Zone Management, Ministry of Water Resources, Govt. of Bangladesh. February 2001.

PDO-ICZM, 2002. ICZM Dialogue on Conceptualization & Design, Proceedings & Position Paper (WP008). Dhaka; Program Development Office- Integrated Coastal Zone Management, Ministry of Water Resources, Govt. of Bangladesh. November 2002.

PDO-ICZM, 2003. Status of Implementation of Selected National Policies (WP010). Dhaka; Program Development Office- Integrated Coastal Zone Management, Ministry of Water Resources, Govt. of Bangladesh. (in preparation).

WB/NEDA/WFP, 1999. A Concept Note & Development Process: Integrated Coastal Zone Management in Bangladesh; Recommendations of a Joint Donor Identification Mission. Dhaka: World Bank/ Netherlands Development Assistance/ World Food Programme. March 1999.