



Bangladesh's ICZM efforts in practice

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Contents

1. Introduction
2. Coastal Management – success stories
3. ICZM as a process – historical milestones
4. Building coastal cooperation
5. Institutional mechanisms
6. Four years after adoption of coastal policy
7. Concluding remarks
8. References, PDF reports and Websites

Summary

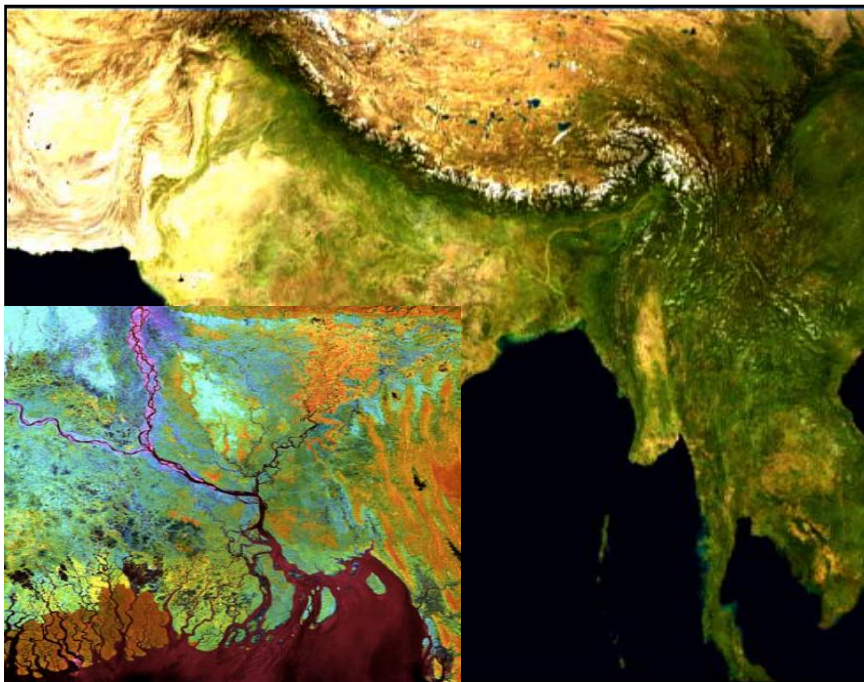
Bangladesh, over the last two decades, has successfully embarked on adopting Integrated Coastal Zone Management (ICZM) approaches and projects, supported by e.g. the World Bank and the Netherlands. A number of 'success stories' formed the basis for this integrated and comprehensive approach to coastal management.

Between 2002-2006 a new stage in the ICZM cycle was reached with greater importance and emphasis placed on building co-operation between and among many institutions, stakeholders, and communities. The Coastal Zone Policy and Strategies were adopted and many ICZM planning tasks were accomplished, see WARPO - website.

However, after 2006, the transition to full implementation did not take place due to reduced funding, complicated proposals for project organisation and changes of governmental priorities.

Pro-active institutional leadership is important for pursuing cooperation when implementing ICZM.

Recently, international support efforts by the World Bank and the Netherlands are being undertaken to provide assistance building on the positive results obtained during the 2002 – 2006 period.



The three rivers and the coastal zone of Bangladesh. (photos: NASA, PDO-ICZM-P)



1. Introduction

The coast of Bangladesh is characterised by a long indented coastline and many emerging shoals. The deltaic coast is formed by the interactions of the highly sediment loaded rivers: Ganges, Brahmaputra and Meghna, and the Bay of Bengal. The delta is one of the most densely populated areas of the world.

The coastal zone covers 19 of 64 districts facing or having proximity to the Bay of Bengal (MoWR 2005): 62% of the land of the coastal zone has an elevation of up to 3 meters and 86% up to 5 meters (Islam, 2006).

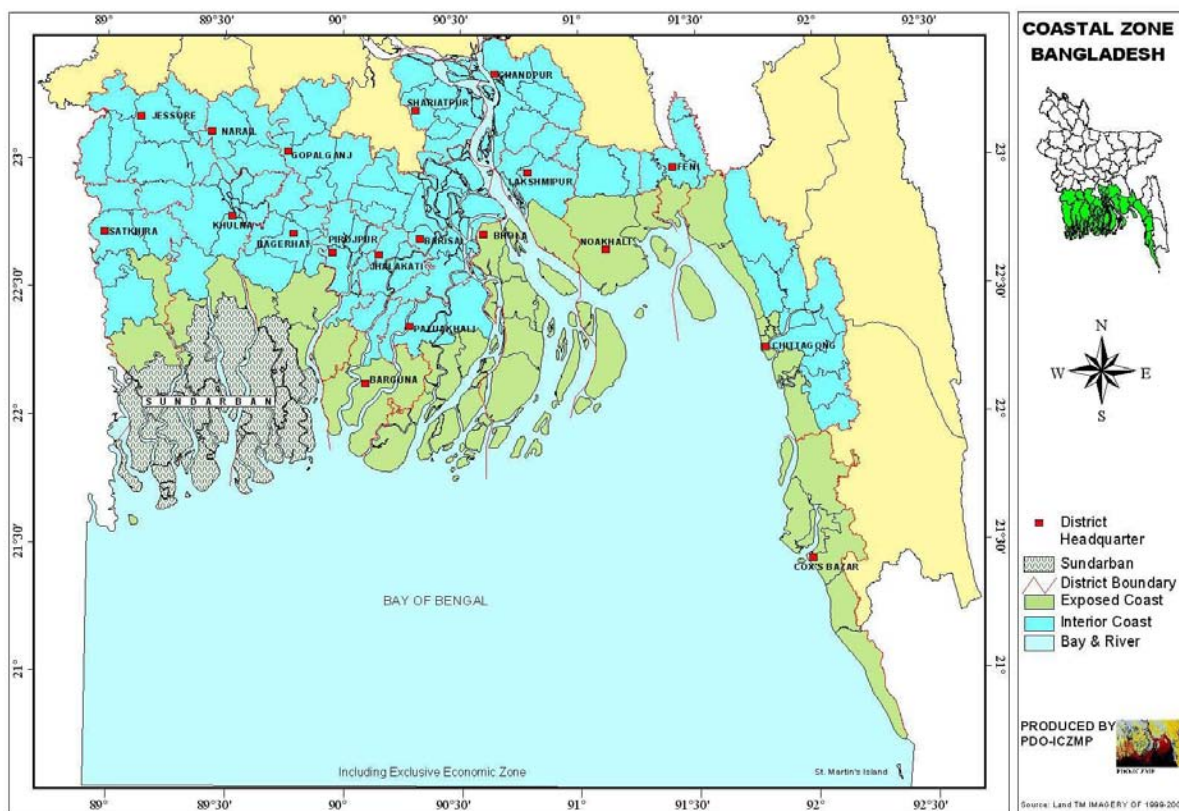


Figure 1: *The coastal zone of Bangladesh with the Sundarbans in the west. (source: PDO-ICZM-P)*

The population of the coastal zone of Bangladesh was 36.8 million (= a quarter of the total Bangladesh population) in 2001 and is projected to grow to about 43.9 million in 2015 and 60.8 million in 2050 (Ahmad, 2005). Official poverty indicators show a slightly higher percentage of the population living below the absolute poverty line in the coastal zone compared to the country as a whole (52% v/s 49%).

The fertile coastal zone has distinctive economic opportunities and development potential (Islam, 2008). It contributes 29% to the Gross Domestic Product (GDP).

On the other hand, the coastal zone of Bangladesh is also highly vulnerable, topping the list of most vulnerable developing countries in the world (Singh *et al.* 2005, see also CCC II-1-1). The Government has identified the zone as an 'agro-ecologically disadvantaged region'. It is prone to natural disasters, such as cyclones, storm surges, and floods. In combination with other hazards, such as scarcity of drinking water, land erosion, the high arsenic content in ground water, water logging, water and soil salinity and various forms of pollution, these disasters have slowed down social and economic developments (Islam & Ahmad 2004). On top of this, the zone is vulnerable to risks from earthquake, tsunami and above all climate change.



2. Coastal management – success stories



Efforts to exploit economic opportunities, to make coastal lands more productive and safer began many decades ago. This has resulted in the following success stories:

Polderisation of Bangladesh coasts

In 1960s, construction of coastal embankments to form a large number of polders was initiated. Polders are now an embedded feature in the coastal landscape. There are 123 polders formed by 5,107 km of embankments, of which 957 km are sea-dykes. These polders provide flood protection to a total of 1.5 million ha of land. Sea-dykes also provide protection against, hazardous events and the effects of present rate of sea-level rise. New settlements have been established within the polders. The objective to increase agricultural productivity, was achieved with great success for the first ten to fifteen years until clogging of drainage water became serious in some parts. Polders also opened new opportunities for shrimp farming.



Figure 2: *Map of the coastal polderisation – in dark green the completed polders.* (source: CERP)

Mangrove forests – a natural barrier

Over 10,000 km² of the forest area of Bangladesh are in coastal regions. This includes the Sunderbans, the largest productive natural mangrove forest in the world. From 1964, the Forest Department started massive plantation of mangroves in the coastal areas forming a coastal green belt. About 120,000 ha mangrove was planted in the period 1965 – 1990 (Saenger & Siddiqi, 1993).

The mangrove belt save lives and properties from cyclones, tidal surges, and wave actions. and delivers many other services like: fishes, medicines, fuel wood. Threats are the loss of valuable habitats and species, and the impacts of climate change. It became a UNESCO world heritage site in 1997

and is an important habitat for e.g. the endangered Bengal tiger and Chital deer in the south.



(photo: R. Islam)

Cyclone shelters – multi- purpose infrastructure for coastal communities

Purpose- built cyclone shelters are visible all along remote coastal areas and coastal islands. The number of cyclone shelters was 449 in 1990; increased to 1,921 in 1997, 2,133 in 2004 and are still being constructed. These shelters, can accommodate about 30% of coastal population, never the less they have successfully reduced loss of life in recent cyclones. Bangladesh is set to construct another 2,000 cyclone shelters in the years, after cyclone SIDR (2007). Most of the cyclone shelters are also used as vital social infrastructures such as schools, clinics, community centres, and storehouse during normal periods of the year.



(photo: R. Islam)

Low-cost cyclone warning system – a model for developing countries

The Cyclone Preparedness Programme (CPP) operates an extensive network of 143 HF and VHF radio communications facilities covering 11 districts in the coastal area. A total of 34,000 trained volunteers help train communities to respond to early warning signals in order to save lives. This programme reaches at least 11 million people residing in the low-lying coastal area and offshore islands in the Bay of Bengal. Almost all these radio stations are equipped with solar panels with storage batteries. Mobile phone networks are currently being installed. This total system is considered a model for other regional countries.

These success stories, developed over decades, and originated from different sectors of the Government to form the basis for integrated and comprehensive coastal management in Bangladesh.

Co-operation and support from development partners, notably World Bank, Asian Development Bank and bilateral donors like the Governments of the Netherlands and Denmark had been crucial in building these success stories. Government of the Netherlands has shared its experiences and skills in coastal management and supported Bangladesh in coastal land reclamation, delta development, polder management and estuary studies.

3. ICZM as a process – historical milestones

Supplementing these success stories, steps were also taken to develop area specific management in the coastal zone of Bangladesh through a number of initiatives (Islam 2004):

- Creation of the Off-Shore Islands Development Board (1977-82);
- Formulation of the Bangladesh National Conservation Strategy (1987);
- The UN/ESCAP-GoB Coastal Environment Management Plan for Bangladesh (1987);
- The Coastal Area Resources Development Plan (1988);
- The formation and activities of the Special Parliamentary Committee on Coastal Area Development (1988-90);

- The Assessment of Vulnerability of Bangladesh to Sea Level Rise (1992-1994), supported by the Netherlands Government;
- The start of the Bangladesh ICZM process, supported by CZM-Centre (Netherlands Ministry of Transport, Public Works & Water Management) 1995;
- The national capacity building on ICZM initiative (1997).

These initiatives gradually prepared the ground for the government's initiative in 1999 to embark on a process of Integrated Coastal Zone Management (ICZM). In that year, the government expressed its commitment through a policy note entitled 'Integrated Coastal Zone Management: concept and issues' (MoWR 1999). The conceptual approach was further elaborated through a Joint Mission of the Bangladesh Government, the Netherlands Government and the World Bank. Eventually, the preparatory phase for formally introducing ICZM in Bangladesh continued from February 2002 to June 2006, with support from the Governments of the Netherlands and U.K.

4. Building coastal cooperation

Building coastal co-operation is not easy and cannot be developed overnight. It should be seen as a process built upon past successes. During the preparatory phase (2002-2006), great importance and emphasis was placed on building co-operation between and among many institutions, stakeholders, and communities by undertaking the following initiatives and practices:

Establish a coordinating office, is important & vital

A Programme Development Office (PDO) for ICZM was established as a multi-ministerial and multi-sectoral arrangement. Hence, the PDO housed experts from four different Ministries (Water Resources, Agriculture, Fisheries & Livestock and Environment & Forestry), experts from the Water Resources Planning Organisation (WARPO) and a team of national and international consultants. This office gradually assumed roles and responsibilities of a national focal centre. This multi-ministerial office is important for meaningful engagement by all Government and non-Governmental agencies.

Bring relevant institutions together

Integrated Coastal Zone Management (ICZM) helps to bring relevant Government and non-governmental institutions together. The Bangladesh ICZM programme consisted of 34 different government agencies involving 13 different Ministries. These agencies were structured into an *Inter-Ministerial Steering Committee*, chaired by the Minister of Water Resources, providing policy guidelines and an *Inter-Ministerial Technical Committee* contributing technical knowledge and helping resolve inter-organisational conflicts. The Technical Committee also had representatives from universities, NGOs, private sector and the civil society. These arrangements and representations gave feelings of wider 'ownership' and 'participation'.

Box:

Multi-Level Consultations during the formulation of the Coastal Development Strategy

- An annotated and extended outline was presented at a national and four regional consultation workshops in October 2004.
- Based on workshop recommendations, the first draft was prepared in February 2005 and sent to relevant agencies and members of the task forces.
- 'Coastal Development Strategy highlights' was disseminated through Coast News and posted on the website.
- Comments and suggestions were solicited from general people through a *public announcement* in four national dailies (February 2005).
- The draft was presented during March -April 2005 at 28 local level consultation meetings. These consultations contributed in further revision of the draft CDS, including strategic priorities and prioritization of concept notes.
- A *Peer review* of the draft by selected experts was organized in June 2005.
- The draft was presented to Members of Parliament in July 2005
- The draft was presented and discussed at two consecutive inter-Ministerial Technical Committee meetings.
- The draft was approved at the 2nd inter-Ministerial Steering Committee meeting held on February 13, 2006.

Extensive Consultation created ownership of coastal planning

Extensive consultations at different levels offered an opportunity for participation. Structured consultations were organised in all key decisions, such as delineation of the coastal zone or land zoning exercise and in formulation of key documents such as the Coastal Zone Policy and the Coastal Development Strategy (see Box).

Build knowledge base

A book titled 'Where Land Meets the Sea: A Profile of the Coastal Zone of Bangladesh' was published as a base reference book on coastal zone. An abridged version in Bangla, 'Upokulio Anchali – Ekti Tathya Alekhyo' was also prepared and 3,000 copies were printed & distributed. In addition, 19,000 copies of district information booklets, 1000 each of the 19 coastal districts, were printed and distributed through district administration. This exercise helped build a comprehensive knowledge base and create an informed community.

More than 40 technical working papers on different topics were published. These reports were made available on the ICZMP Project WARPO (see WARPO website) and also as print documents. Full sets of all documents were handed over to universities and selected libraries & institutions.

Build networks – formal and informal

In order to establish a network, the PDO published a directory of 'Who is doing what' in the coastal zone. This resulted in dialogue and cooperation between managers and professionals of active projects. 'Focal Points' were established at operational level in each of 34 agencies. They acted as operational contact points in day-to-day activities. Field visits in groups were organised routinely. Opportunities for social interactions strengthened team building.

Know your coastal communities

Extensive surveys, analysis of data and case studies were conducted to obtain a better understanding of the strengths, weaknesses and vulnerabilities of coastal communities. This resulted in several reports on coastal livelihood conditions, resource use by indigenous communities, inventory of social safety nets and micro-credit, urban poor and employment status & potentials. A status paper on 'Women of the Coast' was also prepared. This pro-active engagement with coastal communities led communities to place trust and confidence in this ICZM process. Many coastal NGOs supported the initiative and helped in building bridges with coastal communities (see also CCC II-1-2). This building of trust and confidence is important and helps strengthen co-operation.

Undertake information dissemination & social communication

Sixteen issues of a communication bulletin, Tata Rekha (Bangla version) and Coast News (English electronic version) were published and distributed. 7,000 copies of each issue of Tata Rekha were mailed to a range of stakeholders including the Local Government administrative tier. Brochures and leaflets were printed and distributed. CDs containing project reports were widely disseminated. The project website was created. The site contained relevant information on the coastal zone of Bangladesh and provided a comprehensive overview of the extensive PDO-ICZM activities and in-depth information on projects, coastal districts, project publications in the form of downloadable PDF reports and a Knowledge Portal on Meghna Estuary Developments.

All these activities evolved through cooperation involving many thousands of stakeholders and the active dissemination of the principles of sustainable development in the coastal zone. These achievements were made possible by major efforts by the coordinating PDO-ICZM office, related NGOs, applied scientists, and policymakers of the various Bangladeshi Ministries and the support of international organisations.

5. Institutional mechanisms to promote further cooperation

INSTITUTIONAL MILESTONES

The Government of Bangladesh has approved and adopted

- the Coastal Zone Policy in 2005 and
- the Coastal Development Strategy in 2006

The institutional structure is based on the assumption that governmental (line) agencies are the best performers regarding implementation within an agreed national planning framework, while coordination is to be undertaken at local level (Huda 2004).

Such institutional arrangements for integrated management at a local project level work more effectively if parties realise that working together in this manner is beneficial both for those involved and for achieving common goals.

This approach is more effective when actively pursued at local level, close to the coastal problems and solutions. The national level should provide general coastal knowledge, financial and physical planning instruments. The goals and institutional framework promoting coastal co-operation are outlined in the Coastal Zone Policy and detailed in the Coastal Development Strategy (see PDF report).

The key national institution is the Program Co-ordination Unit (PCU) for ICZM, its main function is the institutionalisation of ICZM in Bangladesh. It is a multi-disciplinary and multi-agency organisation. The objectives of the PCU is to co-ordinate, monitor and harmonise the ICZM planning and the implementation and to serve as a service centre supporting the relevant government and non-government agencies, local government institutions, private sectors active in the coastal zone. The PCU support structures are:

- Inter-Ministerial Steering Committee,
- Inter-Ministerial Technical Committees,
- Focal Points and
- Several Task Forces

These PCU support structures were operational during 2002-2006 and contributed in preparatory implementation of ICZM in Bangladesh (Islam 2008), but became too complex to function at a national level after 2006.

A similar institutional structure at local level has operated for over a decade at Noakhali, a coastal district within the Char Development & Settlement Project, supported by the Netherlands Government. The structure involves local communities, local NGOs and four government agencies (Wilde & Islam 2002).

6. Four years after adoption of coastal zone policy (2006 - 2009)

Although adoption of the Coastal Zone Policy (2005) and Coastal Development Strategy (CDS, 2006) by the Government of Bangladesh were hailed as milestone achievements, policy and strategy directives have remained largely unimplemented. The major setback occurred when no funds could be made available to continue and nurture already operational institutional structures. The status of activities, during the last four years, is not encouraging and now stands at:

- a) Program Co-ordination Unit (PCU) exists on paper at the Water Resources Planning Organisation (WARPO). However, there is no effort to embark on a system with effective co-ordination and guidance.
- b) The Government, basically the lead Ministry (Ministry of Water Resources) has unfortunately not been able to utilise the opportunity for formalising an integrated management of the coastal zone, based on its own approved and adopted policy and strategy documents. During this period, however, Bangladesh has seen change in Government, political instability and faced major natural calamities;
- c) Coastal Zone Policy and Coastal Development Strategy have not been included in key national programmes and policies;
- d) Only one of the identified ICZM investment programmes has entered the Government's Annual Development Programmes: The Ministry of Land is implementing the important programme of coastal land zoning.

In the absence of pro-active institutional leadership and lack of national focus and funding, development partners have also changed their priorities. Cyclones SIDR (2007) and Aila (2008), which devastated coastal Bangladesh in recent years, have again brought the coastal zone into focus. Global attention of the impacts of climate change puts further international emphasis on coastal zone.

Recently, international support efforts are being undertaken to provide assistance building on the positive results obtained during the 2002 – 2006 period:

The World Bank, after the catastrophic cyclone SIDR, has indicated interest in supporting some of the projects from the coastal zone priority investment programme in consultation with Asian Development Bank and United Nations Development Program (UNDP) and other donors. The World Bank is now implementing the 'Cyclone Recovery and Restoration Project' in coastal districts. The project will support: (i) Recovery of the agriculture sector and improvement programme; (ii) Reconstruction and improvement of multipurpose shelters; (iii) Rehabilitation of coastal embankments; and iv) Developing long-term disaster risk management programme. These and other development partners prefer the Government of the Netherlands to take a lead role.

The Government of the Netherlands has officially indicated its continued support for ICZM and led a multi-donor initiative. In 2009, this included a mission to support Government of Bangladesh in pursuing meaningful investments in the coastal zone. The mission suggested three phases over the next ten years. Initial works have begun. Meanwhile, the Government of the Netherlands is continuing the implementation of coastal projects such as, the Char Development & Settlement Project and the Estuary Development Programme (CDSP) both good examples of participatory approach.

7. Concluding remarks

Cyclones SIDR and Aila have again exposed the vulnerabilities of the Bangladesh coastal zone. Sectoral planned measures in the past have protected the coast but not anymore. With increasing population, declining natural resources and on-going and increasing impacts of climate change, coastal zone cannot be managed from a sectoral perspective. Sectoral management has resulted in unintended negative impacts in many cases (impeded drainage as a result of polderisation, salinisation through shrimp farming). Co-operation among many and diverse agencies and stakeholders is becoming increasingly crucial and beneficial (Huda 2004, Thomalla *et. al.* 2005).

Bangladesh, for the last two decades, has very successfully embarked on adopting the approach of ICZM but had to discontinue its implementation for many reasons. The 2002-2006 attempts brought Bangladesh to the position where it was ready to start the implementation of the next stage in the ICZM cycle. The ICZM approach not only helps mitigate the effects of disasters, but also provides opportunities to exploit resources in an economically beneficial and sustainable way. ICZM in Bangladesh is not for environmental or ecological gain but a survival strategy for millions living at the mercy of nature. Bangladesh has no other alternatives.

The responsibility, hence, still stands on the Ministry of Water Resources (MoWR) and the Water Resources Planning Organisation (WARPO) to lead and to nurture gains made during the formulation and preparatory years of ICZM. Pro-active institutional leadership is important to pursue cooperation within an ICZM framework.

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