

INTEGRATED COASTAL ZONE MANAGEMENT PROJECT, WEST BENGAL



State Project Management Unit (SPMU), West Bengal
Integrated Coastal Zone Management (ICZM) Project

Funded by: The World Bank

Institute of Environmental Studies & Wetland Management

DD24, Sector I, Salt Lake City, Kolkata 700 064

Phones . : (033) 2334 1020/0531/0239, 2337 9240

Fax . : 91-33-2358 0967, E-mail : iczmpwb@ieswm.org

Website: www.ieswm.org

SUMMARY

1. Integrated Coastal Zone Management (ICZM) has now been recognized and used as an essential tool/process for formulating plan to protect and develop coastal ecosystem and resources. Keeping this in mind government has decided to take proactive steps to prepare state wise project report on integrated coastal zone management of littoral states of India. The state project reports will be designed to include also details of the key components of the project reflecting some key ecological, developmental, livelihood and governance issues along some chosen stretches of the coast of the states. In essence the report will develop implementation plan of state level approaches to ICZM. It has been decided that, to start with, this initiative will be taken with the support of World Bank for three states of India, e.g. Gujarat, Orissa and West Bengal. Accordingly, the state project report of West Bengal has been drafted as per contents decided in consultation with the Bank.

2. The West Bengal coastal region is divided into two parts by the north-south flowing Hugli River. In the western part the coastal zone stretches from LTL to 500 m from HTL towards landward side (as CRZ) inland and up to the landward extension of the successive series of older sand dune stretching up to Orissa Coast Canal known as the Kanthi coastal plain. [Pic-1] In the eastern part the coastal zone is occupied principally by the Sundarban, a major mangrove forest and associated creeks, estuaries and wetlands forming the western part of the composite Ganga-Brahmaputra delta plain. Essentially the coastal zone stretches in this part from LTL inland to the so-called Dampier-Hodges line that serves also as the boundary of the Sundarbans Biosphere Reserve. The coastal zone thus defined is stretched over three districts namely Purba Medinipur, South 24 Parganas and North 24 Parganas.

3. The above division also corresponds to the sub-division of the West Bengal coast, based on tidal amplitude, into two different coastal environments namely (Figure 1):

- i. The macro tidal (tidal range often > 4 m) Hugli estuarine plain characterized by a network of creeks encompassing the islands with spectacular mangrove vegetation



Figure 1 : West Bengal Coast

and off-shore linear tidal shoals from Sagar Island to the border of Bangladesh to the east.

- ii. Meso tidal (tidal range 2 – 4 m) Medinipur (Digha-Sankarpur-Junput) coastal plain to the west of the Hugli estuary with rows of sandy dunes separated by clayey tidal flats from Sagar Island to Orissa border to the west.

This contrasting physical nature of the West Bengal is also reflected in the coastal resources east and west of Hugli estuary.

4. West Bengal coastal zone is beset with several key problems related to sector specific coastal erosion and loss of land, episodic flooding due to tidal/storm surge, possible climate change induced sea level rise and coastal submergence, habitat destruction, loss of livelihood due to several reasons including non-sustainable practices, [Pic 2] loss of bio-diversity due to over exploitation of the bio-resources, coastal pollution by anthropogenic activities, and above all conflicting (existing and/or intended) use of the coastal space and associated social tension. To mitigate these problems and to protect coastal environment and to conserve coastal resources, the approach so far had been (i) to impose restrictions for one use or the other in different defined segments of coastal zone in relation to sensitivity of those segments through the current regulatory approach (CRZ notification 1991 as amended from time to time) and (ii) to intervene through isolated engineering and conservation measures. It has been rightly



Pic. 2

argued that the existing approach related to environmental protection and conservation of coastal areas should be replaced by a more inclusive science-driven management plan based on ensuring sustainable development and conservation of natural resources of the coastal zone. Such an integrated coastal zone management plan will not only be able to tackle the problems being faced by segments of West Bengal coast but will also provide avenues of sustainable use of these segments between conflicting (current or intended) users. [Pic 3] As the problem at hand is immense, it has been decided that initially two stretches of West Bengal coast, east and west of the Hugli estuary, Sagar Island and Digha-Sankarpur area will be critically examined for launching some eco-friendly interventions as part of the ICZMP of West Bengal. Along with these area-specific interventions in the two selected stretches, an exploratory monitoring and research program on coastal processes and bio-chemistry of soil, vegetation, etc of Sunadarban region will be taken up.



Pic. 3

5. The different components of the proposed intervention plans in the priority areas of Sagar Island and Digha-Sankarpur area and other allied are grouped under four heads:

- Creation of Coastal Infrastructure
- pollution prevention/ environmental quality management
- eco-tourism and related service sector livelihood option development

- capacity building in ICZM activities

Annexed Table 1 gives the titles of each program with the budget and the time schedule.

6. The implementing agencies of the ICZM-West Bengal project are:

- Digha-Sankarpur Development Authority,
- Public Health Engineering Directorate, Government of West Bengal
- West Bengal State Electricity Distribution Company Limited
- West Bengal Fisheries Corporation Limited
- Sundarban Infrastructure Development Corporation Limited
- Zoological Survey of India
- Department of Disaster Management, Government of West Bengal
- Forest Directorate, Government of West Bengal
- Institute of Environmental Studies and Wetland Management
- University of Calcutta

The overall phasing of all the components has been worked out. The first year implementation plans of all the components have also been formulated. Memoranda of Understanding (MOU) with most of the participating agencies have already been signed.

7. In order to deliver the expected benefits from implementation of these pilot programmes an overall institutional model and the staffing plan have been designed. The notified Project Steering Committee (PSC) for ICZM-West Bengal is the apex body. The Chairman of the PSC is the Chief Secretary, Government of West Bengal while the Additional Chief Secretary, Department of Environment, Govt. of West Bengal is the Vice-Chairman. The other members are: Addl. Chief Secretary, Forest Department, Principal Secretaries of Fisheries, Sundarban Affairs, PHE, Urban Development and Power & NES Departments of Govt. of West Bengal. Project Director of ICZM Project will act as Member-Convener of the PSC.

8. The Environment Department of Govt. of West Bengal is the Nodal Department in implementing the Project in the state of West Bengal. The implementation of the ICZM pilots through different Project Executing Agencies (PEAs) will be carried out by the State Project Management Unit (SPMU) to be hosted by IESWM (a registered society under administrative and financial control of the West Bengal Government). The SPMU is the principal arm of the ICZM-West Bengal that will ensure the successful implementation of the pilot programs by providing the required administrative, scientific and financial support to the implementing agencies. [pic 4] The Unit will constantly monitor and evaluate the performances of each intervention and will introduce mid-term corrections, if required, to rectify any deficiency in implementation of the pilot programs.

9. The Project Director of ICZMP is the Project Director of SPMU. Presently other members of the Unit are Deputy Project Director (Administration), Deputy Project Director (Technical) and a Project Advisor. Future SPMU divisions will possibly include Finance Division and Communication & Documentation Division. The two Divisions will be headed by two

Table 1 : Approved programs with year wise and total Project Cost of ICZMP, West Bengal

1 US\$ = Rs. 46/-

S.No.	Project Title	Implementing Agency	Project Cost (in INR Lakhs)						Dept Cost Not To Be Financed	Project Cost To Be Financed	Amount in US\$ (Millions)
			2010-11	2011-12	2012-13	2013-14	2014-15	Total Project Cost			
1	State Project Monitoring Unit		442.80	391.80	417.12	392.12	392.44	2,036.28	-	2,036.28	4.427
2	ICZM Plan Preparation	SPMU	215.23	470.09	467.08	417.08	-	1,569.48	-	1,569.48	3.412
3	Environment Department - Capacity Building	SPMU	189.62	239.62	289.62	239.62	189.62	,148.10	-	1,148.10	2.496
4	Development of Eco-Tourism	Sundarban Infrastructure Development Corporation Limited	441.98	1,075.14	1,190.54	749.03	227.62	3,684.30	-	3,684.30	8.009
5	100% Household Electrification, Sagar	West Bengal State Electricity Distribution Company Ltd	115.17	1,242.15	1,341.55	771.39	-	3,470.26	45.76	3,424.50	7.445
6	Afforestation Programme towards Coastal Protection in Purba-Medinipur District	Directorate of Forest, Govt. of West Bengal	136.91	120.42	95.82	95.07	90.87	539.11	100.00	439.11	0.955
7	Marine Aquarium Cum Research Centre, Digha	Zoological Survey of India	206.60	96.60	96.60	96.60	96.60	593.00	325.00	268.00	0.583

INTEGRATED COASTAL ZONE MANAGEMENT PROJECT , WEST BENGAL

S.No.	Project Title	Implementing Agency	Project Cost (in INR Lakhs)							Dept Cost Not To Be Financed	Project Cost To Be Financed	Amount in US\$ (Millions)
			2010-11	2011-12	2012-13	2013-14	2014-15	Total Project Cost				
14	CBO Coordinated Livelihoods Improvement & Market Access in Sagar Island	Sundarban Infrastructure Development Corporation Limited	138.95	694.75	972.65	555.80	416.85	2,779.00	-	2,779.00	6.041	
15	Capacity Building for coastal monitoring, RS & GIS, etc IESWM	IESWM	164.81	164.81	164.81	164.81	164.81	824.03	-	824.03	1.791	
16	Capacity Building for Climate Change Studies	Calcutta University	395.00	82.50	82.50	-	-	560.00	-	560.00	1.217	
17	Construction of Cyclone Shelter Facilities in Coastal West Bengal	Department of Disaster Management	96.00	960.00	960.00	640.00	544.00	3,200.00	-	3,200.00	6.957	
	Total Cost:		4,113.75	9,312.73	9,645.80	5,588.21	2,429.69	31,090.17	1,063.92	30,026.26	65.274	

experienced managers to be designated as Programme Manager Finance & Programme Manager Communication & Documentation respectively. The Operation Division is likely to be constituted of five Scientists/Specialists from the field of Geology / Remote Sensing, Planning/ Engineering, Oceanography/ Marine Science, Fishery and Rural development. Discipline-specific and time-bound expert input from selected Consultant(s) will be a part of the staffing plan of PMU. Finance & Administration Divisions likely comprise of 3 officers Administration Officer, Accounts Officer and Procurement Officer. Communication & Documentation Division will have similarly 3 officers Documentation Officer, MIS expert and Communication Officer. In addition, 4 Technical Assistants, 1 Cashier-cum-Accounts Assistant, 1 Administrative and Procurement Assistant, 4 General Duty Attendants will be recruited and will assist the Project Director and different Programme Management Divisions of the project for their smooth functioning.

10. Staffing plan of the implementing agencies will be as per the approved DPR. Only operational staff members will be recruited by the implementing agencies with permanent departmental staff member(s) providing the lead, expert input and guidance to the pilot projects as part of their duties either on full time or part time basis as decided by the respective heads of the agencies. However, each implementing agency will name a nodal officer to head the pilot project allotted to the agency who will be responsible to the PMU for successful implementation of the pilot project.



Pic. 4

11. Funds for implementation will be received by Institute of Environmental Studies and Wetland Management (IESWM) from the National Project Management Unit (NPMU) annually. The IESWM will in turn allocate funds periodically to various agencies implementing the identified components of the State Project Proposals. The implementing agencies will follow the prescribed World Bank financial controls for expenditure sanction and payment, prepare the duly audited account statements and submit those to IESWM who in turn will prepare a consolidated utilization account. This account will reach the NPMU for settlement of advances drawn and also for further release of fund.

12. The website of ICZMP of West Bengal will be maintained and updated by the SPMU to disseminate information about the pilot projects to the public bringing in the desired transparency in the implementation of the ICZM project. All information regarding progress of the pilot projects, recruitment notices, tender notices and relevant scientific and technical data will be periodically uploaded. An interactive feed back mechanism will be built in the system for obtaining public opinion.

13. The environmental and social safeguard will be ensured through implementation of an environmental management plan by the SPMU. Potential environmental social impacts have already been identified for each proposed interventions. As part of the EMP, broad measures to be taken during and after the implementation of the work programs to mitigate the identified causes of perceived deterioration of environmental and social impacts conditions have been formulated. When implemented, the appropriate mitigation measures will guard against potential adverse environmental and social impacts due to intended “developmental” activities of specified nature and/or magnitude. Statutory authorisation procedures, if required, will be adopted.

14. Monitoring of key indicators and evaluation of the monitoring results will point towards the success or otherwise of the interventions which have been proposed in the State Project Report in the identified coastal areas of West Bengal and will form the central theme of the envisaged monitoring and evaluation efforts. The key indicators that are of relevance and are required to be monitored will include the following:

- Seasonal field monitoring of retreat/advance of the coast line and beach profile along the Sagar island sectors over a sufficient number of years so as to evaluate that equilibrium beach plans and profiles have been attained.
- Yearly monitoring through remote sensing about erosion/growth through deposition/emergence/disappearance of coastal island systems of the Sundarban areas inclusive of Sagar Island
- Yearly monitoring through remote sensing and limited check field observations on shrinkage/increase of mangrove covered areas in Sundarban
- Yearly monitoring through field survey of status of bio-diversity in Digha-Sankarpur and Sagar island areas to evaluate the health of bio-diversity of the areas
- Periodic and regular water quality monitoring (especially BOD and bacterial count) of coastal waters in and around Digha-Sankarpur area to evaluate that the water quality is meeting the required standard

- Periodic data collection on fish catch (catch per effort) along coasts to evaluate that the health of coastal fish population is maintaining the required standard
- Yearly monitoring of crop and other agricultural and horticultural yield to evaluate their productivity due to the proposed interventions
- Yearly monitoring and evaluation of GDP of the coastal districts of West Bengal
- Monthly monitoring of movement and visit of tourist to Digha-Sankarpur and Sagar island areas

15. Positive response in any or all of the above indicators will point towards success and sustainability of the ICMZP. Most of these monitoring and evaluation will be carried by the SPMU and has been detailed in the main report. A few of the monitoring related to water quality, fish catch, agricultural and horticultural production, etc and economic data like GDP, etc are routinely collected by the concerned departments of the government. These data will be accessed avoiding duplication of monitoring works.



Pic. 5