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1. INTRODUCTION

1.1 The Beira Coastal Zone Management Programme

The city of Beira, Mozambique has sought support in order to address the problems related to coastal erosion. In August 1997, the Netherlands Minister for Development Cooperation has decided to provide support in the form of a project that was to be implemented between April 1998 and October 1998.

The project addresses the preparation of an Integrated Coastal Zone Management plan (ICZM-plan) for the city of Beira and the implementation of some 'emergency' civil engineering works to control coastal erosion at those locations where it is most urgent and potentially most devastating (see appendix 2 for the ToR for the project). Prior to the execution of the 'emergency' civil engineering works and the formulation of the ICZM-plan, a work plan specifying the adopted approach was to be formulated. The project is executed by Arcadis Euroconsult¹ in close collaboration with the city of Beira.

On request of the Royal Netherlands Embassy in Maputo, Mozambique, (the Embassy) the Netherlands Commission for Environmental Impact Assessment (the Commission) formulated an advice on the work plan, including the 'emergency works' and an outline for the contents of the ICZM-plan. This advice was submitted on 25 June 1998.

By letter dated 14 September 1998 (appendix 1) the Embassy asked the Commission to advise on review of the ICZM-plan and on the quality of the civil engineering works as executed. By telephone the Embassy requested the Commission to formulate the advisory review keeping in mind that further support to coastal defence is considered. In chapters 2 and 3 the Commission advises on review of the ICZM-plan and the emergency works. In chapter 4 the Commission advises on how to use the present plan and on further action with regard to ICZM. The review is done by the same working group that also formulated the advice submitted on 25 June 1998 (see appendix 3). For the review of the final draft, Mr. Negenman acted as resource person and not as member of the working group.

1.2 Brief history of this advice

The Commission received a first draft of the sections 1 (activities report), 2 (investigations and information base) and 4 (Coastal Zone Management Strategy Plan) of the ICZM-plan on 10 September 1998. These sections arrived with a request from the Embassy to provide preliminary comments. These comments were submitted on 25 September 1998 (appendix 4). The Commission received a second draft of the same sections of the ICZM-plan on 29 October 1998 also with the request to provide comments. These comments were communicated on 6 November 1998 (appendix 5). In preparation of the review of the final version of the ICZM-plan, a delegation of the working group of the Commission, composed of a Mozambican expert (institutional and environmental matters), a Dutch expert (institutional, engineering and resource management) and the technical secretary visited Mozambique from 18 to 26 November 1998 (for itinerary see appendix 7). During this mission the 'emergency works', as far as completed, were inspected and discussions were held with the project team. Moreover, a meeting of a proposed 'Coastal Zone Management Forum' was attended. On request of the Embassy and benefitting from the presence of the project manager (during two weeks), the mission formulated its (draft) observations (appendix 6). The objective was that these observations could be used in finalizing the ICZM-plan.

¹ In association with Alkyon Hydraulic Consultancy & Research, the Netherlands, Profabril Group, Portugal, Arcadis Bouw Infra, the Netherlands and the International Union for Conservation of Nature (IUCN), Mozambique

On 22 December 1998 the Commission received the final version of the sections 1, 2 and 4 of the ICZM-plan. On 12 April 1999 the final report was received.

1.3 Criteria for review of the ICZM-plan

The ToR for the ICZM-plan as formulated by the Embassy defines the required output of the ICZM-plan (appendix 2). The advice of the Commission of 25 June 1998 provides a further specification of these ToR on the issues related to the environment. Both documents served as basis for the review.

1.4 Justification of the approach

1.4.1 Management plan versus strategy plan

The CZM Strategy plan^{2]} in its second draft states: “Organizing an Integrated Coastal Zone Management programme is a lengthy procedure and must be done step by step. The recommended ingredients for CZM planning are as follows:

- 1) creation of a strategy plan for CZM;
- 2) formulation of the policy background including a clear set of goals and directions for CZM;
- 3) passage of enabling orders or legislation authorizing the coastal Authority and the integrated CZM programme;
- 4) staffing and organizing the CZM unit and establishing both technical and policy advisory bodies;
- 5) creation of a Master Plan^{3]} for the coast;
- 6) implementation of the Master Plan “step by step”.

The Commission agrees with this description and phasing of an ICZM plan and concludes, with the authors (see page 80 of the report^{4]}), that with the present report only step 1, creation of a strategy plan for ICZM, has been implemented. The Commission has the opinion that in the time period and the financial scope that the project has had available it was impossible to develop a complete ICZM plan. During its mission in May 1998 the Commission has expressed some doubts about the feasibility of the project within the available financial and time frame (e.g to rehabilitate the Chiveve area).

The Commission reviews the ‘Strategy Plan’ assuming that this plan describes at least the strategy how to realize in practice effective integrated coastal zone management in the case of Beira.

1.4.2 Focus of the review

The June 1998 advice of the Commission provides recommendations for the work plan, that was to be formulated in the first month of the project, and an outline of the ICZM-plan. The draft advice was discussed with the consultant in May 1998, the first month of the project. The work plan would indicate the areas on which the project will concentrate and specify the process and activities which would lead to the formulation of the ICZM-plan. Moreover, this work plan would specify the emergency works to be carried out during the project. The Commission received the ‘Work plan’ in November 1998, several months after reception of the first draft of the final report.

2 The final report terms the plan an Integrated Coastal Zone Management Strategy Plan. Previous drafts term it Coastal Zone Management Strategy Plan.

3 In the final version of the report the Master Plan is replaced by an ICZM action plan, but the Commission prefers to stick to the initially used terminology.

4 The authors of the report are not fully consistent, stating in paragraph 1.4.1. that formulating the strategy plan is the one but last step in the process of preparation of a detailed ICZM-action plan.

Therefore, the Commission thinks that a review of the work plan is no longer relevant. The Commission now considers its recommendations of June 1998, (recommendations made for formulation of the work plan) to be relevant for the ICZM strategy plan.

2. OBSERVATIONS ON THE ICZM STRATEGY PLAN

It is the opinion of the Commission that the strategy plan could have appreciated value if attention had been paid to the viability and feasibility of the plan. Questions pertaining to commitment and awareness of political and governmental institutions in terms of financial and personal support as well as stakeholder ownership are scarcely dealt with. The success of the plan depends on sufficient support of the local and regional authorities. The Commission considers this issue as the major constraint to ICZM.

2.1 Main observations

2.1.1 Content of the ICZM Strategy plan

- a) General remark
From the report, the Commission has the impression that local government has insufficiently been involved in the process of development of this ICZM-plan.
- b) Problem analysis, opportunity analysis, strategy development
At the executive level an inventory has been made of the derived problems using participatory methods. An adequate analysis of these problems, however, is presented for coastal morphology only. For other issues no appropriate problem analysis is presented⁵. Although elements of a strategy to come to ICZM-planning and elements of the ICZM-plan can be found in the document, the Commission is unable to recognize the sequential steps that have been made to come to the presented ICZM-planning. The process followed so far addressed elements of ICZM-planning but skipped the different steps of strategic planning.
- c) Institutional survey, SWOT⁶-analysis
The institutional survey focused on institutions that are supposed to address the technical problems. These institutions are to be found at the executive level. The survey presents relevant information but, in general, is incomplete and superficial.
- d) Action planning, priorities and budgeting
The Commission considers the ICZM actions given in chapter 4 and the action plan outline given in annex 8 of the ICZM Strategy Plan as part of a useful checklist for the definition of an ICZM-plan. The Commission observes, however, that priorities have not been set and that budgets lack substantiation. The overall amount of the budget is questionable.
With exception of the plan to increase the height of the existing groynes (see remarks under § 4.1. of this report) the Commission appreciates the elements of the immediate action plan.
- e) Ownership
The ICZM-Strategy Plan has been prepared applying a participatory approach involving mainly the executive levels of authority. The Commission does not find indications that support the statement of the consultant (page 63) that “full participation of stakeholders” was achieved. The proposal for institutional arrangements presented at the last meeting of the informal forum did not yield agreement at the higher level of authority.

5 The plan proposes solutions (actions) for problems but omits to develop the links between the problems, the actors involved, the strategies for problem solving, the aims of the ICZM plan and the activities to reach these aims (§ 4.3)

6 SWOT = Strengths, Weaknesses, Opportunities, Threats

The Commission has no insight in the extent of support of the Conselho Municipal de Beira (CMB) for the other issues addressed in the ICZM Strategy Plan.

f) Environmental quality

Environmental conservation, ecological quality and sustainable development of coastal resources is not strongly embedded in the “goals and objectives of the plan” (§ 4.2.1., volume 3) and in the way it is worked out. Dune restoration, though, is given fair attention.

2.1.2 **Inaccuracies**

The report contains a number of inaccuracies. These are specified in appendix 8.

2.1.3 **Other ToR-requirements**

! Training strategy and education programmes

As the final report of the Beira ICZM-project does not formulate proposals with regard to attribution of tasks and functions to institutes, hardly any training needs assessment could be carried out. As a consequence, the development of focused training programmes was possibly less relevant. Nevertheless, programmes could have been developed for functions that have been identified (e.g. sluice squad, dune guards) and for which the required expertise is known.

! Cooperation with NIZA⁷ and the City of Amsterdam

The Strategy Plan does not address proposals for cooperation of ICZM-issues between Beira and NIZA and the municipality of Amsterdam.

3. **THE <EMERGENCY> WORKS**

Having reviewed the emergency works chapter of the report and having observed the completed structures in the field, the Commission comes to the following observations:

! Taking into account the prevailing budget constraints the selection of the emergency works was satisfactory⁸].

! As emergency measure the introduction of gabions on the down drift side of the groynes is acceptable⁹].

! The sluices and sluicegates have been well repaired.

! Sluice operation necessitates up and down drift beach maintenance.

! In order to achieve continued effectiveness of the groynes, sea wall and sluices, the Commission stresses the importance of regular maintenance of these works.

! Also, regular maintenance has to be done on the dunes up and down drift the groynes. Failure to do so will lead to ineffectiveness of the groynes and, eventually, in their degradation.

The Commission recommends to:

! develop a sluice operation protocol.

! make operational regular maintenance of emergency works (sluice, groynes, sea-wall), the dunes up- and down drift the groynes and the beach up and down drift the sluice.

! carry out the other emergency works, mentioned in the report of Alkyon, Hydraulic Consultancy and Research, if further funds are available.

7 Netherlands Institute for Southern Africa

8 The Commission has not found indications that point 1 and point 5 of the package of selected emergency work (as mentioned in paragraph 1.3.1. of the Final Report under review) was indeed implemented

9 It might be a suggestion to avoid theft of wire netting by making it unusable by eg. an asphalt cover

4. HOW TO PROCEED

Notwithstanding the reservations the Commission has expressed in the preceding pages with regard to the present plan, the Commission suggests not to go through a new planning phase now. Instead, it would like to underline the necessity to start implementing the most urgent activities, the first of which is the execution of the proposed institutional survey that has to define:

- ! who will do what;
- ! with what mandate;
- ! with which means.

This chapter will evaluate the information actually available and its relevance for follow-up activities. It will advise on a path that could be followed in order to come to an ICZM plan.

In order to provide guidance to the institutional survey proposed by the Netherlands Embassy (see appendix 8, chapter 3) and to follow-up activities, the delegation of the Commission in its draft observations (appendix 6) suggested the ICZM-plan to provide ideas and guidelines. This chapter will built further on these suggestions. A new planning phase can be scheduled once the most urgent work has been carried out.

4.1 Information in the ICZM strategy plan to disregard or address in further studies

Some of the information and recommendations given in the ICZM-strategy plan must be questioned. The Commission recommends to disregard the following information:

- ! **Actual type of groynes.**
The plan suggests to heighten those groynes that are considered to be too low. This method to increase their effectiveness should be studied further. It is questionable to spend money to upgrade - at a larger scale than the emergency works - a basically ill-conceived construction (rigid structure placed on the sand without foundation). Although a good construction would require a much more solid investment, the economic viability (on a longer time scale) of both options should be investigated.
- ! **Budget**
The estimated budget required for preparing a good ICZM-plan (as given in 4.4.3 under point b) is probably too low.
- ! **Mouth of the Chiveve river**
The recommendation of (§ 4.4.2. point c in relation to annex 9) over-capping the mouth of the (rehabilitated) Chiveve river is questionable from an architectural and town planning point of view. If it is done, care should be taken that dredging equipment is available to work under the roofing. As far as additional benefits are concerned, the scouring of silt from the fishing harbour is uncertain.
- ! **Dune restoration**
In the plan it is said that restoration of dunes is a larger budget activity. This is not necessarily the case: the sooner small-scale pilot projects (cheap) are started, the better. It creates awareness and participation.

4.2 Suggestions for further action

4.2.1 **General**

It is essential for the success of ICZM in Beira that the process is “demand driven”. The needs and interests of Beira must be given highest priority. Participation creates awareness and support for the plan. The Commission suggests to start solving the most urgent problems. This should be done in such a way that, step by step, an integrated way of taking action develops. Gradually, public and private commitment can be gained (bottom-up approach). At the same time, efforts should be made to obtain political support from the highest level down (top-down approach).

4.2.2 **Immediate action**

A second round of ICZM planning, resulting in an overall Master plan and separate investment packages, should only be started when the monitoring of coastal erosion and regular maintenance activities are carried out by the Beira Municipality on its own and when they have reached a level of intensity and impact that sustainably yields a stable coastline there where groynes have been rehabilitated, improved hinterland flood control and reduced sand loss at the Palmeiras sluice and an effective sea wall at Miramar. This gives a first proof of the Municipality’s commitment to coastal zone management and protection (sufficient performance and good governance).

The Commission recognizes the following problems that should be addressed most urgently:

- ! protection of the coast against erosion (e.g. dune restoration and maintenance);
- ! operation of Palmeiras sluices;
- ! sanitation;
- ! upgrading of Chiveve area.

4.2.3 **Developing Integrated Coastal Zone Management**

- 1) From now on all stakeholders in ICZM should address the major constraints in resolving the coastal zone management problems of the city of Beira: lack of budget and political preference.
- 2) The decision-makers have no time to go through reams of paper and thus preparatory work has to be done to bring back the consequences of the absence of ICZM (the scope of ICZM) to 10 pages of accessible text and a problem tree. This work includes:
 - ! select from all available documents those issues that concern ICZM. Identify their mutual relationship, if any;
 - ! select from all available documents those issues that need further problem analysis and carry out that analysis with responsible institutes (don’t forget the survey on relevant legislation);
 - ! identify parties involved (per issue and in total) and SWOT (as far as not yet done by the institutional survey carried out earlier); Identify why these parties involved should go and sit around a table to work towards a solution in an integrated way; what benefit do they get from an integrated approach as compared to a sectoral one (everybody just does its own);
 - ! identify politically responsible persons;
 - ! prepare the 10 pages problem description and problem tree and the possible (alternative) solutions.
- 3) Present the resulting 10 pages or so to the decision-makers and discuss the problems in a workshop. Ask them in a second workshop to present their suggestions for solutions to ICZM. Suggest them to focus on the technical solutions. Subsequently ask them to work out financial and institutional consequences of their solutions, suggest financial and institutional arrangements and a time schedule (conditional benchmark schedule) to realize the technical solutions. This work may be spread over more than one workshop.

See to it that the decision-makers can get any available background information they require any time. Get insight in the parties that can be approached for funding of the respective activities (national as well as international).

- 4) If little results from this participatory ICZM-planning approach: consider to back out. If a reasonable plan is produced, coordinate with decision-makers and other donors as to who will do what.
- 5) Execute in a participatory manner a training needs assessment and develop training programmes.
- 6) Develop ICZM master plan (including additional technical studies), with clear identification of actions, actors and budgets. Give time schedules with steps/phases and respective targets/products of these steps.
- 7) Mandate an authority to monitor the (implementation) of the (stepwise) ICZM process.
- 8) Attract attention of the media in order to raise awareness of the general public.
- 9) Make the Beira-ICZM plan part of a national/regional ICZM plan and establish cooperation with the ICZM unit of MICOA in Maputo.