

National Environment Management Authority of Kenya

Terms of Reference

Consultancy Services to Develop a Shoreline Management Strategy for Kenya

1. Background

The coastal areas of Kenya are densely populated and development has resulted in increased economic, recreation, development, and resource utilisation pressures throughout the coastal zone. Anarchistic development along the coast and near the shoreline in particular have led to conflict issues, while coastal erosion is an increasing problem along the Kenyan coast. In order to prevent the negative impacts of uncoordinated and piecemeal development of the country's shorelines, there is a need to develop a strategy for shoreline management in support of overall coastal zone planning and decision-making. This need is considered even more important when the potential deleterious impacts of sea level rise and alterations in weather patterns are added to the present scenario.

The overall aim of shoreline management is to support sustainable development along the shoreline. The specific objectives of shoreline management are twofold:

- i. To control and manage coastal defence against impact from the sea (erosion and flooding).
- ii. To protect the shoreline through appropriate zoning and development guidelines.

A Shoreline Management Strategy is to be prepared to (i) identify key shoreline management issues in Kenya, (ii) recommend shoreline management policies and objectives in response to these observed issues in line with the overall development policies of Kenya, and (iii) to recommend strategies to achieve these policies and objectives. Such a Shoreline Management Strategy is to relate to the entire Kenyan shoreline, rather than to specific and local shoreline management options, which can only be formulated through a more detailed shoreline management planning process.

In order to demonstrate such a shoreline management planning process, the shoreline management strategy investigation will include preparation of a Shoreline Management Plan for a section of the coast that is to be subdivided into several management units¹. For each unit, management objectives and strategies will be developed. It is suggested that Malindi District shoreline be chosen as the site for the demonstration plan.

Kenya has established an Integrated Coastal Zone Management (ICZM) Steering Committee, which has initiated a Shoreline Management Task Force charged with developing a Shoreline Management Strategy based on a systematic shoreline management investigation process. The National Environment Management Authority (NEMA) is now seeking a consultant with experience in shoreline management to assist the Task Force. Assistance is to be delivered in a manner such that training and development of the capacity of Task Force members is also provided, while at the same time assuring that required reports and databases are produced.

¹ Management unit is an area along the length of shoreline which has been bounded or defined based on coherent physical, biological and landuse characteristics of the shoreline.

For practical purposes the 'shoreline' is defined as the area from 60 m landward of mean higher-high water (MHHW²) to a water depth 2 or 3 times the maximum wave height. This is location-specific, and the actual shoreline zone can only be determined after some investigation into the meteo-marine processes along the Kenyan coastline.

The shoreline management investigation is to also consider land uses further inland to the extent this may influence recommendations both at the Shoreline Management Strategy and demonstration Shoreline Management Plan level.

The Kenya Marine and Fisheries Research Institute (KMFRI) on 30th August 2006 launched the Environmental Sensitivity Atlas for the Coastal Area of Kenya (KENSEA)³ based on spatial digital data organised in a Geographical Information System (GIS). The GIS datasets include information on environmental parameters and socio-economic data along the coast of Kenya and, together with a comprehensive database of geo-referenced oblique aerial photographs, provides a good description of the shoreline. The information has been used to generate hard copy and electronic maps showing the degree of sensitivity to oil spill. The KENSEA GIS will provide the core information base for the shoreline investigation and it is not expected that substantial additional primary data acquisition will be required⁴.

Note that while NEMA intends to seek consultancy services via this tender notice, in no way is NEMA obliged to enter into a contract with one or more bidders.

2. Objective

The objective of this consultancy is to engage a Shoreline Management Specialist (individual, company, or consortium) to assist the Shoreline Management Task Force in the preparation of a Shoreline Management Strategy for Kenya.

3. Tasks

The Shoreline Management Specialist will work closely with the Shoreline Management Task Force, on one hand for the consultant to transfer capacity on shoreline management to its members and on the other for members to make local knowledge and experience available to the consultant. A shoreline investigation, which is to lead to preparation of the Shoreline Management Strategy, will be initiated during a meeting with the Shoreline Management Task Force, where the consultant will detail the approach to the investigation, and the contribution from the Task Force and its members will be discussed and agreed. Task Force members and the consultant are to then prepare for the shoreline investigation proper, which is to be undertaken by the consultant who will also be responsible for preparation of the Shoreline Management Strategy and for assisting in its presentation to NEMA and the ICZM Steering Committee.

² Mean Higher High Water. The average height of the higher high waters over a 19-year period.
www.poa.usace.army.mil/en/cw/fld_haz/glossary.htm

³ The KENSEA project was funded by Danida (Danish International Development Assistance) via the United Nations Development Programme (UNDP). For further details the KENSEA Report is available at <http://www.geus.dk/program-areas/nature-environment/international/reports/kensea/index-uk.htm>. KENSEA maps are also available from <http://www.ke.undp.org/kensea.htm>.

⁴ The Shoreline Management Task Force brings together institutions and individuals with experience and knowledge about the coastal areas of Kenya and may therefore be able to update/consolidate information in the KENSEA GIS. NEMA has acquired geo-referenced socio-economic information arising from the last national population census in Kenya undertaken in 1999.

The Consultant is to provide necessary technical input and guidance to the Task Force on:

- i. Detailed approach to the shoreline management investigation, to be presented in the first meeting with the Task Force and to be reported in the inception report no more than two weeks after the meeting, incorporating tasks and activities agreed upon at the meeting.
- ii. Data management and reporting. The KENSEA GIS will be used as the basis for the shoreline investigation, to be consolidated as required with other secondary spatially organised data readily available from the Task Force members and NEMA. The investigation will expand the GIS with shoreline classification and sediment compartment or cell delineation. Data shall be examined and organised in a spatial manner along the shoreline according to socio-cultural, economic, physical-chemical and biological components of the environment, and the sensitivities relating to each component for coherent stretches of shoreline shall be classified (e.g. classification of erosion severity, ecological importance, refine shoreline morphology classification from KENSEA based on detailed review of existing aerial photos and in accordance with the nomenclature of coastal types set out in the Guidelines for the Study of Shoreline Change in the Western Indian Ocean Region⁵).
- iii. Identification of shoreline management issues.
- iv. Methods for prioritisation of shoreline management issues.
- v. Development of shoreline management objectives.
- vi. Development of shoreline management strategies in order to achieve shoreline management objectives.
- vii. Developing/reviewing strategies for implementation of shoreline management within the legal and institutional framework in Kenya, while also taking into account methods of implementation in other countries⁶
- viii. Identification of further data requirements for shoreline management (e.g. shoreline monitoring, sediment properties, etc.)
- ix. Development of a Shoreline Management Plan for a selected coastal district (Malindi District)
- x. Preparation of a draft Shoreline Management Strategy for Kenya.
- xi. Draft and final draft Strategy and other reports will be submitted in soft copy in both pdf format and parent format (i.e. MS Words, ArcGIS, Excel, etc as appropriate). Presentations to NEMA and the Steering Committee will be delivered in MS PowerPoint format together with handouts.

4. Indicative Budget

NEMA has set-aside a budget of KES 3,000,000 for this consultancy. The amount is to include:

- Shoreline Management Specialist consultancy labour

⁵ Kairu, K. & Nyandwi, N. 2000. Guidelines for the Study of Shoreline Change in the Western Indian Ocean Region. Intergovernmental Oceanographic Commission, Manuals and Guides. SC-2000/WS/55. UNESCO 2000.

⁶ Relative success of different methods, for example in terms of enforcement of allowable use provisions and development standards for shoreline segments, whether better control is achieved through shoreline management jurisdiction under the local authority, or a committee comprising government agencies or a single government agency.

- Shoreline Management Specialist consultancy expenses, including travel and accommodation.

This budget does not include costs associated with Task Force Meetings nor does it cover costs associated with contributions from Kenyan counterparts.

It is foreseen that a rapid survey⁷ needs to be conducted along the coast of Kenya for which a vehicle and driver based in Mombasa will be made available.

5. Timing & Duration (Period of Performance)

The anticipated schedule is as follows:

- Week 0 NEMA awards contract (anticipated by end of July 2009)
- Week 3: Task Force Meeting with consultant (anticipated 3rd week of August 2009)
- Week 5: Inception Report
- Weeks 6-13: Work on tasks – Shoreline Management Strategy development in close liaison with Task Force
- Week 14: Presentation of final draft to NEMA and ICZM Steering Committee (anticipated late Oct 2009)
- Week 16: Strategy Finalisation (anticipated mid November 2009)

6. Consultant Selection and Award Procedure

NEMA will select the Consultant on the basis of the following:

Technical Proposal – equivalent to 75% of overall evaluation:

- Understanding of issues and consultancy – the consultant is to provide a brief understanding of the context of and technical issues surrounding the consultancy
- Technical approach – the consultant is to provide a description of how they propose to undertake the study
- Academic background – the Consultant is expected to hold at least a degree in a relevant subject
- Technical experience – the Consultant is expected to have at least 10 years experience in coastal and/or related issues
- Shoreline Investigation Experience – the Consultant is expected to have practical experience in conducting shoreline management investigations and in drafting shoreline management guidelines and strategies.
- GIS Competence - the Consultant is required to be experienced in the use of ESRI GIS software (ArcView, ArcGIS).
- Availability and commitment to maintain schedule to the extent possible – the Consultant is expected to commit to achieving the schedule as outlined in Section 5 above.

Financial Proposal – equivalent to 25% of overall evaluation:

The Consultant is to provide a breakdown of estimated costs, keeping in mind the indicative budget indicated in Section 4 above.

⁷ Ground verification and documentation of analyses along the coast line as a whole and more detailed descriptions of the special area (Malindi). The rapid survey is not expected to exceed 2 weeks.

7. Deliverables

At a minimum, the following deliveries are to be provided:

Inception Report

Document the approach (10 pages maximum) and tasks to be carried out as agreed following the consultants first meeting with the Shoreline Management Task Force. The Inception report should be submitted no later than 2 weeks after the initial meeting

Consolidation of available spatial data

As an outcome of the shoreline classification and development of management objectives, the KENSEA/GIS database shall be expanded with the following key spatial layers to be developed:

- 1) Shoreline classification (refinement of KENSEA classification in terms of scale and classes), classes with layers related to primary coastal type and component facies as per IOC guideline. These units will be expanded where necessary, for example to include developed and protected shoreline types.
- 2) Erosion areas and classification (severity)
- 3) Coastal structures
- 4) Sediment cells
- 5) Management units and strategies for a selected area (Malindi).

The Shoreline Management Strategy

The main output from the proposed investigation shall be a detailed strategy for shoreline management tailored to the conditions in Kenya based on the findings during the investigation. There will further be reporting of the various findings during the study, including data, sediment cell delineation and basic management objectives as well as a more detailed sample plan for a limited study area if feasible (Malindi).

It is envisaged that the reporting will have the following main contents:

Environmental Baseline

This section will describe the existing shoreline environment. At a minimum, the report will include:

- Outline of the existing physical-chemical, and biological systems in the shoreline area.
- Identification of sediment cells and sub-cells and description of the coastal processes within each cell.
- Coastal land use.
- Classification of coastal erosion and coastal structures.
- Classification of beach quality, tourism facilities and tourism potential.
- Main issues affecting the shoreline, shoreline use analysis and priorities.

Shoreline Management Strategy

This section will include:

- Sectoral issues affecting each sediment cell.
- Draft sectoral management objectives
- Draft management strategies
- Legal and institutional framework relevant to the shoreline management and suggested implementation
- Outline of the baseline inventories and monitoring activities necessary for shoreline management
- Recommended components of a shoreline management programme

Shoreline Management Plan for a selected district

The shoreline management plan for the district will include:

- Delineation of management units.
- Specification of the management strategy for each management unit.
- Sectoral policy recommendations.

For each management unit, the report will include:

- Description of the management units.
- Description of management objectives.
- Description of management strategies.

Revised draft reports based on comments from ICZM Steering Committee.

8. Confidentiality

During the course of document preparation, the Consultant is to keep the work product confidential, and restrict circulation to representatives of NEMA, NEMA's development partners, the ICZM Policy Steering Committee, Shoreline Management Task Force or other parties as agreed by NEMA.

9. Proposal

Bidders are to prepare a written technical proposal (10 pages maximum, excluding appendices and CVs⁸) on how the consultancy will be undertaken and a separate written financial (cost) proposal. Each proposal is to be in a separate sealed envelope, and placed inside a single large outer envelope. Each inner envelope is to be clearly marked as appropriate: "Technical Proposal", and "Financial Proposal".

The outer envelope should be marked "**CALL FOR PROPOSALS FOR DEVELOPMENT OF SHORELINE MANAGEMENT STRATEGY FOR KENYA**" and addressed to:

The Director General,
National Environment Management Authority
Popo Road, off Mombasa Road,
P. O. Box 67839-00200, Nairobi, Kenya

⁸ CVs are to be no more than 3 pages each.