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I, Bomo Edith Edna Molewa, the Minister of Water and Environmental Affairs, hereby in terms of section 33(2) of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008) publish the National Estuarine Management Protocol.

(Signed)

**BOMO EDITH EDNA MOLEWA**  
**Minister of Water and Environmental Affairs**

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**GLOSSARY OF TERMS**

CPZ	Coastal Protection Zone
DAFF	Department of Agriculture, Fisheries and Forestry
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DST	Department of Science and Technology
DWA	Department of Water Affairs
EMP	Estuarine Management Plan
EFZ	Estuarine Functional Zone
ESD	Ecological Sustainable Development
the ICM Act	National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008)
IDP	Integrated Development Plan
MCC	Municipal Coastal Committee
MLRA	Marine Living Resources Act, 1998 (Act 18 of 1998)
NBA	National Biodiversity Assessment
NEMBA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act (Act 57 of 2003)
the Protocol	National Estuarine Management Protocol
NPA	National Port Authority
PCC	Provincial Coastal Committee
SAHRA	South African Heritage Resources Agency
SAR	Situation Assessment Report

SDF	Spatial Development Framework
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## 1 Introduction

South Africa (SA) has about 300 functional estuaries<sup>1</sup> that are distributed throughout a ± 3200 km coastline. Estuaries are characterised by high biodiversity and productivity and provide a range of environmental and socio-economic benefits. Examples include flood control, providing raw material for subsistence (building material) and nursery areas for juvenile fish. In South Africa, estuaries also provide shelter along an otherwise exposed coastline that has few natural embayments, therefore they often serve as nodes for habitation and development. Most South African estuaries have been altered from their pristine state due to human disturbances.

The 2011 National Biodiversity Assessment which uses two headline indicators for assessing the state of South Africa's biodiversity: 'ecosystem threat status' and 'ecosystem protection level' indicates that 43% of estuary ecosystem types are threatened, representing 79% of SA estuarine area. Only 33% of estuary ecosystem types are well protected and 59% have no protection at all. In general, the condition of estuaries has continued to deteriorate due to habitat alteration, over-exploitation of living resources and changes in water quantity and quality, amongst other reasons. Human impact activities need to be regulated and managed for estuaries to be adequately conserved and sustainably utilised.

Estuarine management is complex because estuaries are subjected to influences from marine, riverine and terrestrial ecosystems. Therefore, estuaries require integrated cross-sectorial planning and management as they include stakeholders that are involved in land use planning, management of freshwater and marine resources. Estuarine management is thus a dynamic process that requires careful planning and implementation of management decisions, through development and implementation of a National Estuarine Management Protocol ('the Protocol'), as set out below.

<sup>1</sup> Text of footnote missing from *Gazette*.

## 2 Purpose of the Protocol

The National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008) ('the ICM Act') which was promulgated in December 2009, requires estuaries of the Republic to be managed in a co-ordinated and efficient manner, in accordance with a National Estuarine Management Protocol ('the Protocol'). Section 33(2) of the ICM Act empowers the Minister responsible for Environmental Affairs with the concurrence of the Minister responsible for Water Affairs to publish a Protocol that will provide guidance for the management of estuaries through the development and implementation of individual estuarine management plans (EMPs). The EMPs seek to achieve greater harmony between ecological processes and human activities while accommodating orderly and balanced estuarine resource utilisation.

More specifically, in terms of section 33 of the ICM Act the purpose of the national estuarine management protocol is to:

- (a) Determine a strategic vision and objectives for achieving effective integrated management of estuaries;
- (b) Set standards for the management of estuaries;
- (c) Establish procedures or provide guidance regarding how estuaries must be managed and how the management responsibilities are to be exercised by different organs of state and other parties;
- (d) Establish minimum requirements for estuarine management plans;
- (e) Identify who must prepare estuarine management plans and the process to be followed in doing so; and
- (f) Specify the process for reviewing estuarine management plans to ensure that they comply with the requirements of the ICM Act.

## 3 Strategic vision and objectives

### 3.1 Vision

The national vision for estuarine management is as follows:

*The estuaries of South Africa are managed in a sustainable way that benefits the current and future generations.*

### 3.2 Objectives

In order to recognise and effectively manage the unique environmental, economic and social aspects of each estuary, it is important to establish strategic objectives. The strategic objectives for effective integrated management of estuaries include:

- 3.2.1 To conserve, manage and enhance sustainable economic and social use without compromising the ecological integrity and functioning of estuarine ecosystems;
- 3.2.2 To maintain and/or restore the ecological integrity of South African estuaries by ensuring that the ecological interactions between adjacent estuaries; between estuaries and their catchments; and between estuaries and other ecosystems, are maintained;
- 3.2.3 To manage estuaries co-operatively through all spheres of government; and to engage the private sector/entities and civil society in estuarine management;
- 3.2.4 To protect a representative sample of estuaries (such protection could range from partial protection to full protection) in order to achieve overall estuarine biodiversity targets as determined by the 2011 National Biodiversity Assessment and the subsequent updates;
- 3.2.5 To promote awareness, education and training that relate to the importance, value and management of South African estuaries; and
- 3.2.6 To minimise the potential detrimental impacts of predicted climate change through a precautionary approach to development in and around estuaries and with regard to the utilisation of estuarine habitat and resources.

## 4 Standards for estuarine management

To ensure the effective implementation of a strategic vision and objectives, it is important that these translate into meaningful management standards. The following management standards are applicable:

- 4.1 Estuarine management must aim at best practice in terms of use, management and protection of estuaries based on principles of ecological sustainability and co-operative governance;
- 4.2 Estuary management planning must consider the predicted impacts of climate change and management of potential disasters including pollution events;
- 4.3 Integration of land use planning and natural resource management outcomes with estuarine management outcomes must be promoted;
- 4.4 Management actions should be based on sound scientific evidence and where lacking, the precautionary approach should prevail;
- 4.5 An estuary must be managed to avoid, minimise or mitigate significant negative impacts that include but are not limited to reduced water flows and loss of habitat or species;
- 4.6 An estuary must be maintained in its ecological category as determined in the 2011 NBA and subsequent updates in order to meet biodiversity targets, and to take into account the recommended extent of protection and recommended ecological health category; and
- 4.7 The classification and setting of the Ecological Reserve and Resource Quality Objectives (RQO) of an estuary must take into account the current ecological health status, recommended extent of protection and recommended ecological category in order to meet the

## 5 Responsible management authority for developing estuarine management plans

Generally, most estuarine systems occur within the boundaries of a single municipality<sup>2</sup>, and some occur totally or partly within areas that are currently protected or are likely to be protected in future. Local government generally has closer involvement with activities happening within and around estuaries than the other spheres of government, and it is the local people that usually benefit most from the goods and services that estuaries provide. The Municipal Systems Act (Act 32 of 2000) requires all municipalities to develop and implement IDPs that promote participation of communities and liaison with other spheres of government.

Considering the above and taking into account sections 33, 34, 45, 47 and 49 of the ICM Act (dealing with the Estuarine Management Protocol, Estuarine Management Plans and Coastal Management Programmes), the following authorities are responsible for the development of EMPs and coordination of the implementation process:

- 5.1 Where an estuary falls within the boundary of a single local municipality, the municipality must develop an EMP in consultation with the relevant government departments, except if the estuary is within the boundaries of a protected area or is identified as part of the protected area expansion strategy;
- 5.2 Where an estuary falls within the boundary of more than one local municipality, the district municipality must develop an EMP in consultation with the affected local municipalities, provincial and national government departments. The district municipality may in writing agree with the relevant local municipality/ies that the latter shall be responsible for developing an EMP. Copies of such agreements must be submitted to the relevant provincial environmental department for integrated coastal management within 30 days of them being concluded;
- 5.3 Where an estuary falls within the boundary of more than one district municipality, the provincial environmental department shall develop an EMP, in consultation with the affected district municipalities and the relevant national government departments;
- 5.4 Where an estuary crosses the boundaries between provinces, the Department must develop an EMP in consultation with the Provincial Lead Agencies for the ICM Act and other relevant national government departments;
- 5.5 Where an estuary is within a protected area or is identified as part of a protected area expansion strategy, the management authority responsible for the protected area must develop an EMP in consultation with relevant government departments;
- 5.6 Where an estuary is in a harbour<sup>3</sup>, the Department must develop an EMP in consultation with the NPA or other managing organs of state for a harbour and relevant municipalities; and
- 5.7 Where an estuary crosses a state boundary, the Department in collaboration with the responsible authority of the affected state/s must develop the EMP in consultation with relevant government departments of the affected states.

To promote the successful development and implementation of estuarine management plans:

- (a) The Provincial Lead Agencies for the ICM Act must as part of the provincial coastal management programme identify a priority list of estuaries (for which EMPs should be developed) within the Province that need conservation and effective management from the national priority list identified in the 2011 National Biodiversity Assessment and subsequent updates as the starting point. This should include a schedule of municipalities that should develop these EMPs and their capacity to do so.
- (b) The Provincial Lead Agencies for ICM must inform the Department about the capacity needs of the municipality to develop such EMPs.
- (c) The Department may within available resources provide technical and management support to capacitate the municipality if and when such need arises. This will depend on the importance of that particular estuary in meeting biodiversity targets and the strategic objectives of the Department.
- (d) In order to develop sound EMPs scientific information generated through robust research is critical. The Department of Science and Technology (DST), and Departments of Water Affairs and Environmental Affairs will play a crucial role in supporting research to address issues of uncertainties in estuaries, like climate change, and providing guidance in the development of appropriate policies for better management of estuaries.
- (e) The identified responsible management authority to develop the EMP needs to budget accordingly for the development of these plans.
- (f) Private entities and non-government organisations can play a supporting role in the development of an EMP by supporting the responsible management authority.

<sup>2</sup> As defined in the ICM Act.

<sup>3</sup> As defined in the ICM Act.

## 6 Minimum requirements for estuarine management plans

Although each EMP will have specific and differing targets and indicators, the following components shall be included in all EMPs:

- 6.1 An executive summary of the Situation Assessment Report (SAR) that highlights the key information that would inform and/or influence the management decisions within the estuary;
- 6.2 A geographical description and a map of the estuary based on the Estuarine Functional Zone (EFZ) clearly identifying the boundaries of the system. Any deviation from the EFZ should be motivated for;
- 6.3 The local vision and objectives that give effect to the strategic vision and objectives of the Protocol;
- 6.4 A list of management objectives and activities, that at minimum addresses the following: conservation and utilisation of living and non-living resources (taking into account the priority biodiversity list in the 2011 National Biodiversity Assessment and subsequent updates), social issues, land-use and infrastructure planning and development, water quality and quantity, climate change, education and awareness; compliance and enforcement, and any other activities that will be required to maintain and/or improve the condition of the estuary;
- 6.5 Details of intended spatial zonation of the estuary specifying activities that may or may not take place in different sections of the estuary, and indicating:
  - (a) which organs of state will need to be consulted given the type of zonation that is proposed; and
  - (b) which organs of state will need to enact the relevant laws to implement the proposed zonation (for example if a no-fishing zone is proposed then either DAFF or the Department will be required to consider declaring a closed area or a protected area, respectively);
- 6.6 A detailed integrated monitoring plan with a list of performance indicators for gauging the progress with respect to achieving the objectives of the EMP; and
- 6.7 Details of the institutional capacity and arrangements required for managing different elements of the EMP, taking into account different departmental mandates.

An EMP must be in line with the National Coastal Management Programme, Provincial Coastal Management Programme and/or Municipal Coastal Management Programme.

## 7 Procedure for developing an estuarine management plan

The development of an estuarine management plan should follow a three-step process that involves a scoping phase, an objective setting phase and the development of the implementation plan.

### 7.1 Scoping phase

This phase involves collating and evaluating available information about the estuary that can assist with establishing the status of the estuary and inform management planning. Generally, such information is available in the form of maps and reports from various government agencies and research institutions. It is imperative that local knowledge is considered during this phase. The information should be collated in the form of a Situation Assessment Report (SAR). The SAR should also highlight any major information gaps and the recommendation to address these. At minimum, the SAR must:

- 7.1.1 Describe legislative instruments that are currently applicable to the effective management of the estuary, including existing and planned management strategies/plans (i.e. catchment management strategies, IDP, SDF, Coastal Management Programmes, etc.) and their relevance to the proposed management of the estuary;
- 7.1.2 Provide a detailed understanding of the structure (abiotic and biotic components), functioning and state of the estuary, including the underlying processes and drivers. This should also include the reserve for the estuary if it has been determined (or identify the need for determining a reserve) and estimate the present ecological state of the estuary where possible. This should be done by using the Estuarine Health Index as applied in Ecological Water Requirement Methods - Department of Water Affairs and Forestry, 2008 or subsequent versions of Estuarine Health Index that are approved by DWA. This is a standardised approach for estimating the degree of modification of an estuary from its reference state to present;
- 7.1.3 Describe in a socio-economic context (demographic, economic profile, etc.) and the level/s of dependence of local communities on the estuary. This will include assessment of the opportunities and constraints within the ecological system (including potential carrying capacity for activities), taking into account its current and recommended ecological state and limits of acceptable change where available; and
- 7.1.4 Identify the goods and services or human use activities and their impacts or potential impacts on the present ecological state of the estuary.

### 7.2 Objective setting phase

The SAR provides a good basis for setting a realistic and achievable vision and list of objectives for a particular estuarine system; based on limits of acceptable change and carrying capacity, current/potential goods and services provided by the estuary, current/potential threats, opportunities and constraints that the socio-ecological system provides. Effective governance arrangements must be proposed, within the ambit of existing legislation and mandates that are in line with the strategic vision and objectives stipulated in the Protocol. The objectives should generally be qualitative statements of the values defined in the local vision. The objectives should consider among others:

- (i) the conservation and utilisation of living resources (taking into account the priority conservation list of estuaries identified in the 2011 National Biodiversity Assessment and subsequent updates) and non-living resources;
- (ii) social issues;
- (iii) management of water quality and quantity;
- (iv) land use and infrastructure planning and development;
- (v) climate change;
- (vi) education and awareness; and
- (vii) compliance and enforcement.

The local vision and objectives must be aligned with the strategic vision and objectives of the Protocol. This must be demonstrated by stating the relevant strategic objectives of the Protocol that are relevant to the estuary, together with the related local objective/s that will give effect to them.

### 7.3 Development of implementation plan

For implementation, a range of options for management actions should be identified in order to achieve the vision and objectives. These management actions, which shall be translated into project plans by the responsible government department that is responsible for certain aspects of estuary management (as per legislative mandates), should at minimum address the following key sectors:

- (1) the conservation and utilisation of living resources (taking into account the priority conservation list of estuaries identified in the 2011 the [sic] National Biodiversity Assessment, 2011 [sic] and subsequent updates);
- (2) social issues;
- (3) management of water quality and quantity;
- (4) land use and infrastructure planning and development;
- (5) climate change;
- (6) education and awareness; and
- (7) compliance and enforcement.

Project Plans need to be prioritised and must include:

- (i) a work plan (schedule) specifying when each action will be carried out and by whom;
- (ii) a resource plan (staff and finances) required to carry out the above; and
- (iii) a monitoring plan (including key indicators) to measure effectiveness of management actions. It will be necessary to monitor outcomes to ensure that the EMP is achieving its objectives and targets. Generally, monitoring involves ongoing 'resource monitoring' to measure the general health of the estuary and 'compliance monitoring' to record impacts of human activities and whether they comply with legislation or monitoring of the impacts of natural events.

## 8 Public participation process

(1) The responsible management authority developing an EMP must actively engage all the relevant stakeholders including government department[s], non-government organisations and civil society in the development and implementation of the EMP.

(2) An estuarine management plan must be subjected to a public participation process as required by section 53 of the ICM Act.

## 9 Approval and adoption of an EMP

### 9.1 Approval of an EMP

(1) Once the responsible management authority has given due consideration to any comments received during the public participation process, it must obtain formal approval for the EMP as follows:

- (a) Where an EMP has been developed by local and/or district municipality, the MEC of the relevant provincial environmental department shall approve the EMP; and
- (b) Where an EMP has been developed by the Provincial Lead Agencies for the ICM Act, or a provincial conservation agency or provincial environmental department or the National Conservation Agency, the Minister of the national department responsible for Environmental Affairs shall approve the EMP.

(2) The relevant approval authority must acknowledge receipt of the draft EMP within 21 days of receiving such request for approval.

(3) Within 90 days of the acknowledgement of receipt, the relevant approval authority shall conduct a review of the EMP to determine whether it meets the requirements of the Protocol and other relevant sections of the ICM Act including section 53.

## **9.2 Adoption of an EMP**

Once approved by the relevant approval authority, the EMP shall be formally adopted by the responsible management authority and signed by the head of the responsible management authority. For effective implementation of an adopted EMP on the local scale, the following must be applied:

- (1) Where an EMP has been developed by a municipality, it must be incorporated into the broader Municipal Coastal Management programme as required in section 49 of the ICM Act or as part of IDPs as required by the Municipal Systems Act 32 of 2000.
- (2) Where an EMP has been developed by the provincial environmental department or provincial conservation agency, the EMP must be incorporated into the Provincial Coastal Management Programme.
- (3) Where an EMP has been developed by the Department, the EMP must be incorporated into the National Coastal Management Programme.

## **10 Review of estuarine management plans**

It is also necessary to review monitoring data to assess effectiveness of the EMP in meeting its management targets. EMPs must be reviewed by the responsible management authority that developed the plan at least every 5 years from the date it was adopted (if possible in line with IDP, Coastal Management Programme and SDF cycle), but may also be reviewed at any other time. Such review shall include assessment of:

- (a) The effectiveness of the EMP and success with meeting its objectives, taking into consideration information from monitoring during the preceding years;
- (b) Environmental changes (if any) at a local or a wider scale that could affect the estuarine resources or the implementation of the EMP; or
- (c) Changes (if any) to legislation, land-use planning, goals or policies that may require the EMP to be amended.

Based on these findings, it may be necessary to amend an EMP, even to the extent of revising its objectives. Following such review, the responsible management authority shall either modify or re-endorse the EMP and shall engage in public participation in terms of section 8 of the Protocol, before the amended EMP can be approved in terms of the approval and adoption process outlined above in section 9 of the Protocol.

## **11 Institutional structures and arrangements**

Effective institutional structures and arrangements are crucial support elements for the successful implementation and co-ordination of actions in terms of the Protocol and the subsequent estuary management plans. Chapter 5 of the ICM Act details the institutional arrangements that would, once implemented, contribute to co-operative coastal governance in South Africa. These arrangements are made at national, provincial and municipal levels and the embodiment of co-operative coastal governance is vested in coastal committees. No new institutional arrangements are proposed by the Protocol. The Provincial and Municipal coastal committees shall serve as the forums for monitoring the implementation of EMPs and reporting of progress and achievements related to estuarine management. Any existing and/or planned individual estuary forums can be regarded as informal additional advisory bodies for facilitating the implementation of the project plans identified in the EMPs and to foster continuous stakeholder engagement.

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