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Eastern African Action Plan / Regional Coordinating Unit  
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*Final Report*

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# CONSULTATIVE MEETING ON MUNICIPAL WASTEWATER

REGION:

**EASTERN AFRICA**

Dar es Salaam, Tanzania

11 – 15 June 2001



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This report is identical to the Final Report of the Regional Consultative Meeting on Municipal Wastewater in the Eastern Africa Region, without the Annexes I-VI and Part II.

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**REGIONAL CONSULTATIVE MEETING ON  
MUNICIPAL WASTEWATER IN  
EASTERN AFRICA REGION**

**Dar es Salaam, Tanzania, 11-15 June 2001**

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**REPORT OF THE MEETING**

Edited by:  
Julius Francis  
Salim Mohammed



**NEMC**

**October 2001**

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## **EXECUTIVE SUMMARY**

The Regional Consultative Meeting on Municipal Wastewater in the Eastern African Region was held at the Peacock Hotel, Dar es Salaam, Tanzania, from 11 to 15 June 2001. The Conference was organized by the UNEP/GPA Coordination Office in close collaboration with the Western Indian Marine Science Association (WIOMSA), the National Environment Management Council (NEMC) of Tanzania, and the UNEP's Division of Environmental Convention. The Meeting was attended by delegates of six Governments (Kenya, Madagascar, Mauritius, Mozambique, United Republic of Tanzania, and Seychelles) and municipal councils as well as representatives of UNEP, WWF, ICLEI, private sector, and experts from within and outside the region.

Delegates observed that there is increasing environmental and socio-economic impacts of municipal wastewater in the region and that sectoral approaches adopted by most of the countries in combating the wastewater problem have proven to be less effective. However, the meeting recognised that management of municipal wastewater is challenging and complicated for countries with limited financial and human resources and weak institutional framework.

The meeting recommended that countries in the region should standardize waste management approach and regional standards with specific planning guidelines that are applicable across the region. Such an approach should include the involvement of local communities in the management process and countries were urged to support the development of community stakeholder groups with the mandate to participate in environmental improvement and management. However, the need to create awareness among local communities and other stakeholders to ensure that key concepts are understood and that people have a strong sense of connection with their own use of water was underscored.

The meeting emphasized the importance of instituting sound financial management systems with the view to effectively manage the resources invested and generated in the service delivery of both fresh and wastewater. This includes an effective cost recovery system, which is essential for the sustainable delivery of the water supply and sewerage services. Countries in the region were encouraged to gradually move towards privatization of sanitary services as well as adopting Public – Private Partnership (PPP) in wastewater management by establishing proper policy and legal framework, through capacity building and by creating the required awareness.

With regard to technology the meeting recommended the promotion of research on best available technologies including simple, cost-effective treatment and/or pre-treatment of wastewater.

Furthermore, the Meeting recommended that the Secretariat of the Nairobi Convention initiate the process of enacting a protocol on land-based sources and activities to help combat marine and coastal pollution in the Eastern African region. The countries in the region were urged to review their respective national laws and institutions pertaining to wastewater management with the view to separating between the regulatory and operational functions for better enforcement.

## PREFACE

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA-LBA) was adopted by the Intergovernmental Conference held in Washington, DC, USA, between 23 October and 3 November 1995. The Conference recognized the threat of wastewater as a special problem requiring international cooperation; as emphasized in paragraphs 84-86 of the GPA.

The priority for action, especially on municipal wastewater, was reconfirmed during seven regional technical workshops of Government designated experts on the implementation of the GPA-LBA convened during the 1996-1998 period within the framework of the Regional Seas Programme. More specifically, the Eastern African region organized a Workshop on Implementation of the GPA-LBA in the Eastern Africa region in October 1997 in Zanzibar, Tanzania. The findings from the Eastern African region were similar to the findings from all other regional seas programmes. Sewage was identified as the major land-based source of pollution affecting human and ecosystem health.

In response to these findings, the UNEP/GPA Coordination Office jointly developed a Strategic Action Plan on Sewage with the World Health Organization (WHO), the United Nations Centre for Human Settlements (UNCHS) and the Water Supply and Sanitation Collaborative Council (WSSCC) to address the global nature of the problems related to the inadequate management of wastewater. The Strategic Action Plan on Sewage comprises, amongst others, the development of a *Recommended Framework for Decision-Making* and associated *Knowledge Base*; and the holding of regional meetings - including partnership meetings and global conferences. The Recommended Framework for Decision-Making is a guide for local and national decision-makers and professionals on appropriate and environmentally sound wastewater management systems. This Framework will be reviewed at regional meetings where regional annexes, as required, can be added.

The Regional Consultative Meeting on Municipal Wastewater in the Eastern African Region is the second of a series of similarly-planned regional workshops that GPA is convening between 2001 and 2002; again within the framework of the Regional Seas Programme. These were organized to review the Strategic Action Plan on Sewage and to identify demonstration projects which illustrate the application of the Framework for Decision-Making. More specifically, the Meeting objectives were to:

- i) Review the Recommended Framework for Decision-Making and develop regional annexes as required, to reflect common views of stakeholders on priorities, capacities and needs;
- ii) Share technical, administrative and financial experience and expertise as related to the Recommended Framework for Decision-Making;
- iii) Identify demonstration projects, which illustrate the application of the Framework for Decision-Making. The aim is to have per region two demonstration projects, either existing or new, illustrating innovative approaches, whether in technology, partnership-creation or resource mobilization from either domestic or international resources;
- iv) Provide a forum for partnerships creation based on identified regional capacities, opportunities and partners; and resulting in pre-investment studies;
- v) Identify regional resource centers and list existing relevant projects;
- vi) Identify priority measures to address transboundary/international problems.

The meeting attracted participants from Kenya, Mozambique, Mauritius, Seychelles, Madagascar and the host country, the United Republic of Tanzania. Other participants came from international and regional organizations as well as representatives from non-governmental organizations. This report contains a summary of the proceedings of the meeting, including the conclusions and recommendations that were developed and adopted. The report also contains a summary of papers presented during the four-day event and presents views of the participants on the way forward with regard to wastewater management.

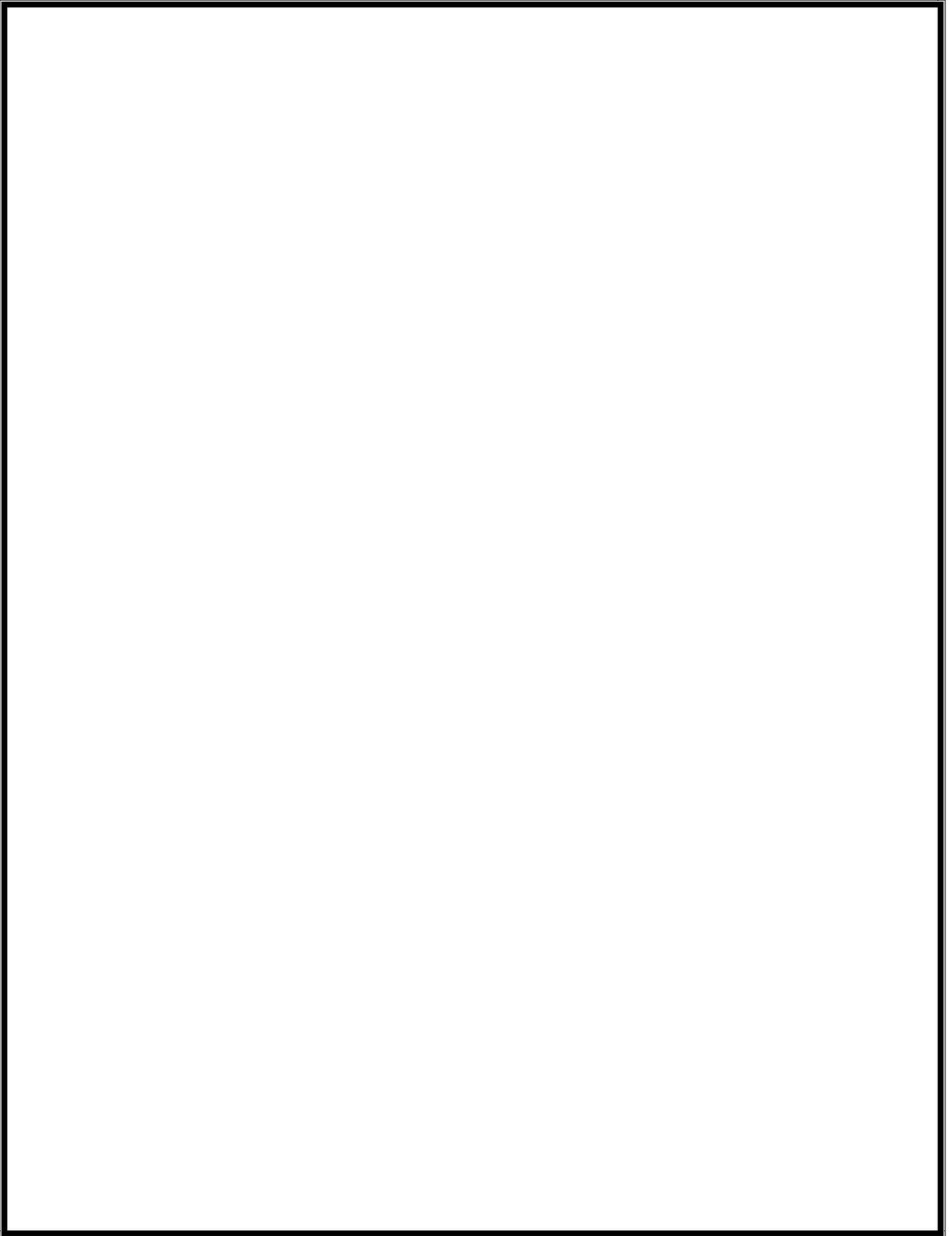
## **ACKNOWLEDGEMENTS**

The Regional Consultative Meeting on Municipal Wastewater in the Eastern African Region was organized in close collaboration with the Western Indian Marine Science Association (WIOMSA) and the National Environment Management Council (NEMC) of Tanzania, which provided both technical, secretarial and logistic support during the Meeting preparation and execution. Their able assistance, support and warm hospitality created a congenial Meeting atmosphere. We are indeed very grateful to the Secretariat for their tireless efforts throughout the implementation stages of the Meeting.

We thank all the participants who worked so hard and whose active participation and co-operation ensured a successful meeting. We deeply appreciate and acknowledge their contribution.

We are grateful to all those who prepared and delivered background documents during the Meeting. They were of high standard and contributed immensely to the formulation of the Meeting recommendations.

Cees van de Guchte  
Senior Programme Officer  
UNEP/GPA



# **PART I:**

## **SUMMARY REPORT OF THE MEETING**

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# **Regional Consultative Meeting on Municipal Wastewater in the Eastern Africa Region**

*Dar es Salaam, Tanzania, 11-15 June 2001*

## **SUMMARY REPORT OF THE MEETING**

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### **A: Introduction**

The Regional Consultative Meeting on Municipal Wastewater in Eastern African Region was held at the Peacock Hotel, Dar Es Salaam, Tanzania, from 11 to 15 June 2001. The Conference was organized by the UNEP/GPA Coordination Office in close collaboration with the Western Indian Marine Science Association (WIOMSA), the National Environment Management Council (NEMC) of Tanzania, and the UNEP's Division of Environmental Convention.

The Meeting was attended by delegates of six Governments (Kenya, Madagascar, Mauritius, Mozambique, United Republic of Tanzania, and Seychelles) as well as representatives of GPA Coordination Office, UNEP, WWF, ICLEI and a number of experts from within and outside the region. A full list of participants is attached as Annex I.

### **B: Opening Ceremony**

The Meeting started at 0930, with Dr Julius Francis of the Western Indian Ocean Marine Sciences Association (WIOMSA) calling the Meeting to order and then welcoming first Dr Cees van de Guchte, the Senior Programme Officer, GPA Coordination Office and followed by Mr Dixon Waruinge, Programme Officer, UNEP, to make introductory remarks on their organizations, as well as their relevance to the objectives of the Meeting. Dr M.A.K. Ngoile, Director-General, National Environment Management Council (NEMC), then invited Mr Abubakar Rajab, the Permanent Secretary, Vice President Office, to officially open the Meeting. The speech of the guest of honour is attached as Annex II.

### **C: Organization of the Meeting**

#### ***Election of Officers***

The Meeting unanimously elected Dr M.A.K. Ngoile of Tanzania as the Chairperson and Mr S. Mwangi and Mr D. Munga of Kenya as rapporteurs.

## **D: Adoption of the Agenda**

The Meeting adopted the Agenda (Annex III) on the basis of the provisional agenda submitted by the Secretariat.

## **E: Review of the Recommendations for Decision-Making on Municipal Wastewater**

The meeting received and discussed the Recommendations for Decision-Making on Municipal Wastewater as presented in the Working Document (Ref. UNEP/GPA Working Document on Recommendations for Decision-Making on Municipal Wastewater) - being general guidelines to the management of wastewater worldwide. The document highlighted, among other issues, the aim of the GPA Strategic Action Plan, lessons learned so far, the way forward for the implementation of the GPA programme, and the recommended framework for decision-making. The meeting also discussed the Regional Annex to the Recommended Framework for Decision – Making that reflected common views of stakeholders in the region on priorities, capacities and needs.

Following the presentation of the recommendations, several issues were put forward for further discussion in working groups. The key issues were as follows:

- *Polluter pays principle.* This was proposed as one of the main mechanisms for cost recovery in wastewater management. For the principle to work efficiently and effectively, it was noted that it needs to be supported by a legal framework. In the region, the application of the principle should take into account the capacity and willingness to pay, bearing in mind the poverty levels currently existing in many member countries. It was also noted that only small fractions of the urban population in the region are served by central sewerage systems - most use on-site facilities. Clearly these also generate wastewater and are thus potential polluters, a situation that needs to be addressed.
- Alternative approaches in wastewater management should be examined and these should take into consideration the economic status of the people in the region. This calls for innovative ideas on coming up with low-cost options such as mobilizing people to collect and dispose their waste.
- Traditionally, wastewater management in most of the countries in the region has been the responsibility of local government authorities. However, these authorities are facing a number of problems including inadequate technical, human and financial capacities to manage municipal wastewater. This has, in some cases, overtaxed these authorities and has contributed to poor waste management practices in the region.
- It is important that environmental aspects/process are taken into consideration in engineering design for wastewater management.

- Population increase in urban centres in most of the countries in the region has led to increase in demand for freshwater and therefore, increased generation of municipal wastewater. These two issues are closely related in many aspects and therefore it is important that they are being addressed together.
- Products and services offered by the GPA “Clearing-house” mechanism are good tools for raising awareness on issues of importance to wastewater management as well as providing information that could assist in decision-making processes.
- The mass media offers opportunities for reaching a wider public in efforts to educate and sensitize the public on wastewater management issues.
- Most recommendations given in the *Recommendations for Decision-making on Municipal Wastewater* document are general. They should be more specific to make them more useful and useable to the countries involved.
- Non-governmental and community-based organizations have a role to play in wastewater management. However, there are very few NGOs in the region that deal with wastewater management issues. The evolution of appropriate NGO’s or the encouragement of existing NGO’s to get involved in this area should be considered. Also, people should be encouraged to come together through NGOs and CBOs to effectively tackle municipal wastewater problems in the region.
- A number of research and monitoring projects have been conducted in different countries in the region. Information and data generated from these projects should be submitted to a regional database, which will make this information easily available on request.

The meeting then broke into four working groups with the view to deliberate on the key issues outlined in the document. These are integrated approaches, stakeholder involvement, innovative technology, institutional arrangements, and financial arrangements. The working groups reviewed and amended the key issues and recommendations presented in the document. The revised draft document incorporating the recommendations by the meeting is given as Annex IV.

## **F: Exchange of Experience**

Four case studies giving experiences in wastewater management in the Eastern African region and Australia were presented to the meeting. These were (i) Kenyan experience of the tourism sector in wastewater management by Mr Mohamed Abdulla Skanda and Mr Saeed Mwanguni (ii) Wasterwater Management in Mauritius: A case study by Mrs Nashreen Soogun (iii) Wastewater Management in Dar es Salaam: A case study by Mr W. Uronu, and (iv) Cost Recovery in Urban water Supply and Sewerage Services: Tanzanian Experiences by Dr Sylvia Temu

In addition, Dr Ron W. Johnstone presented an Australian example on Integrated Wastewater Management.

Dr Johnstone also presented the Cost-benefit case studies related to wastewater management for Mombasa, Kenya; Dar es Salaam, Tanzania and Beau Vallon, Seychelles.

The following reflections and major conclusions from the presentations and ensuing discussions were given by the meeting:

- Construction and maintenance costs of sewage treatment plants are often too expensive for individual hotels and small communities to afford them. For hotels in clusters, a common wastewater treatment facility located in their neighborhood offered a more cost-effective alternative for treatment of wastewater from their hotels.
- Cost recovery in the delivery of urban water and sewerage services is essential for the sustainable provision of these services. Several options for enhancement of cost recovery in urban water and sewerage services are available and should be explored. These include the introduction of reliable charging system, and fair and enforceable pricing system.
- Financing of waste management projects to be solicited both locally and externally. Local financing arrangements could include issuance of treasury bills and other tools.
- The use of innovative models such as the decision tree to assist in making decisions concerning wastewater management should be encouraged.
- Cost-benefit Analysis (CBA) is one of the important tools that if properly used could assist decision-makers in determining potential benefits of different wastewater management options. However, it was noted that the quality of any CBA is dependent on the quality of the available data and, thus, it is critical that a standard approach and quality assurance be made on the data being collected regionally.

### **G: Nairobi Convention and the Proposed Protocol for the Protection of the Marine and Coastal Environment of the Eastern Africa Region Against Pollution From Land-Based Sources and Activities**

In addition to the specific case studies as presented above, Mr Dixon Waruinge of UNEP gave an “Overview on Land-based sources and Activities Affecting the Marine, Coastal and Associated Freshwater Environment in the Eastern African Region”.

Another presentation was given by Mr Akunga Momanyi who presented “A Review of the Framework for Addressing the Land-based Sources of Marine Pollution within the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern Africa Region (the Nairobi Convention)”.

The following reflections and recommendations were drawn from these two presentations and the discussion that followed:

- There is a need of taking into account the carrying capacity of the environment where wastewater is being discharged.
- There is generally lack of long-term and systematically collected information on aspects related to wastewater and its impacts on coastal and marine environment. Inadequate human and technical capacity or failure to utilize the existing capacity to generate baseline pollution data for wastewater management, are some of the reasons behind this situation.
- Lack of long-term planning to take into account urban growth and the siting of industries has attributed to problems in wastewater management currently facing most of the countries in the region.
- The importance of land-use plans and environmental management plans should be emphasized. Land-use changes that are incompatible with town plans and environmental considerations have been permitted due to poor governance. The planning to take into consideration sensitive ecosystems, such as wetlands, which are vulnerable to pollution. Sensitivity maps would be useful tool for this purpose.
- The Nairobi Convention and its two Protocols do not adequately deal with land-based source of pollution. Based on the experiences and achievements of other Regional Seas programmes, it is important that a protocol on land-based sources of pollution with an annex on municipal wastewater be developed.

## **H: Review of the Regional Annex of the Recommended Framework for Decision-Making**

Following a presentation of the “Eastern Africa Regional Annex of the Recommended Framework for Decision-making” by Dr Salim Mohammed, the meeting then broke into four other working groups to discuss regional presentations and the document on the Regional Annex with the view to extract information on lessons learnt in managing domestic waste water in the Eastern African region including island states. The working groups also discussed specific recommendations to be included in the Regional Annex. The groups were also asked to define criteria to identify demonstration projects illustrating UNEP/GPA concepts.

The working groups identified lessons learnt in wastewater management in the region and gave recommendations to be incorporated into the Regional Annex. These are summarized below. The groups also identified demonstration projects in wastewater management both from the region and abroad.

## **LESSONS LEARNT**

### *Policy*

- Management of water-wastewater is often split between several sectors and this requires much stronger networking and collaboration to succeed.

- Assessment of socio-economic impact has not been sufficiently sensitive to socio-economic class differences and there is a need to elucidate differences for use in user pay strategies.
- Distribution of gains and burden from wastewater management is currently distributed inequitably. This strengthens the question as to whether the knowledge and data exist that are necessary to design and implement a scheme to address this.
- Insufficient planning guidelines exist in wastewater management that are useful across stakeholder groups and across the more localized situation of stakeholders in the different countries.
- The approach to setting environmental standards is highly variable across the region and generally does not reflect the character of the receiving environment.
- Poor levels of community collaboration, in addressing municipal wastewater issues currently exist and there is little incentive to do so, underpinned by a lack of understanding of the gains and potential. Similarly, community based approaches are rare in the region for wastewater management initiatives.
- Insufficient systems or networks exist for the effective communication/sharing of relevant wastewater issues to the respective stakeholder groups.
- There is a general lack of sensitivity in management toward the receiving environment. Engineering outcomes are often a stronger driver for management than environmental outcomes, especially with regard to long-term environmental consequence and sustainability.
- Few people at a management and community level understand the “*catchment*” concept as applied to management (including the subtleties of processes that operate at that level). Policies often fail to address the time and spatial aspects of what they are aimed to manage (e.g. there are often many catchments in a given river basin, so basin management policy needs to reflect this; similarly with permit or pollution currency systems)
- Few people in the region have an understanding of their personal link to pollution (particularly with respect to wastewater) and water use. This directly impinges on how they may gain from improvements at a financial and environmental level.
- There has been little effort in establishing the appropriate levels or modes of management, and the cost benefits (pro/cons) for different management strategies.
- There have been too few pilot or case studies from which insights/lessons can be drawn and strategies developed (e.g. alternative systems in poor communities; green taxation or levy schemes). We know too little about what may work within the region for things such as “*ability to pay*” strategies, for example.
- There is generally insufficient social and ecological data to determine, for example, what loads should be permitted for load based licensing strategies.
- Monitoring of environmental and socio-economic parameters is widely inadequate across the region and is often:
  - ◆ Inconsistent and irregular
  - ◆ Operating under poor infrastructure, human capacity, and low levels of analytical skill/technology
- Lack of participation by all stakeholders (financing, operation, maintenance).

- Administrative management is often poor or under capacity with respect to the problems and the solutions that are required (efficiency is commonly poor).
- Consultative approach to coastal and marine environmental policy stands a better chance of success. Madagascar, South Africa, and Tanzania have consulted widely during the development of national coastal management framework.
- Each country has a coastal and marine policy framework. However, the various policies do not converge at a regional level.

### *Technology*

- As a region, little investment has been made in technologies that optimize water saving, with the exception of Mauritius and Seychelles.
- Similarly, little investment has been made in alternative wastewater management technologies such as sewage system technologies, recycling technologies, and stormwater management.

### *Finance*

- At regional level, three financing mechanisms exist:
  - ◆ Public – Zanzibar (Cost met by the Government)
  - ◆ Private sector – Seychelles
  - ◆ In-between – Privatization and Public sector - Mauritius
- As much as there is a move to privatisation, there is low capitalization in the water supplies/sewerage.
- There is a clear need for the active examination of potential financing models for the sustainable financing of wastewater systems and their management (these may include examples external to the region but need to have a regional sensitivity and suitability)

### *Legal and Institutional*

- Weak and/or inadequate legal and institutional systems at national and local government levels.
- Although the Nairobi Convention has two protocols, neither of them addresses issues related to land – based sources and activities.

### *Identification of pilot demonstration projects*

The meeting identified a number of potential demonstration projects. The selection of these projects was based on the following criteria, among others:

- i) Location in marine/coastal environment.

- ii) Level of incomes (low, middle, high)
- iii) Most threatened and densely populated areas
- iv) Practical – address a problem
- v) “Generic”, applicable/relevant in the region
- vi) Role of local authority? Must be the implementer?

The list of potential pilot projects is shown in Table 1. These criteria were further refined resulting in the production of a draft set of criteria for wide applications as shown in Annex V.

Table I: Potential pilot projects

Country	Coastal City	Inhabitants	Demonstration of			Status of project <sup>4</sup>	Further information <sup>5</sup>
			Technology <sup>6</sup>	Partnership <sup>7</sup>	Financing <sup>8</sup>		
Zanzibar	Zanzibar	300,000	Off-site	Communities	Willingness to pay	Planning, Designing	<a href="mailto:jbalawi@yahoo.com">jbalawi@yahoo.com</a> P.O. Box 811 Zanzibar salim@zims.udsm.ac.tz
Kenya	Shimo La Tewa Prisons, Mombasa	10,000	Sewage lagoons	Government of Kenya	US\$ 100,000	Non functioning for rehabilitation	Mtwapa G.K. Prisons currently causing serious pollution levels to Mtwapa Creek
Kenya	Mombasa	10,000	On-site treatment	Stakeholders	Willingness to pay surveys	Operation	P.O. Box 732 Mombasa
Tanzania	At the coast of Lake Victoria	600,000	Sewerage system for Mwanza			New	Mwanza Urban Water and Sewerage Authority P.O. Box 312 Mwanza
Tanzania	Dar es Salaam	3.5 million	Condominial sewers			New technology to serve unplanned areas	Director General, Dar es Salaam Water and Sewerage Authority
			Treatment of sewage from pit latrines, septic tanks			Provision of oxidation ponds for a neighbourhood	“
Tanzania	Dar es Salaam	240,000	Prevention of	Hoteliers,	Willingness to	Planning and	National Environment

<sup>4</sup> Planning, Design, Implementation, Operation, Revision

<sup>5</sup> e-mail address, mail address, web-address

<sup>6</sup> Prevention of pollution, On-site treatment and use, Off-site transportation, Natural treatment systems, Re-use options

<sup>7</sup> Private sector, Stakeholders, Communities

<sup>8</sup> Cost recovery systems, Willingness to pay surveys, Investment loans and grants, Public-private partnerships

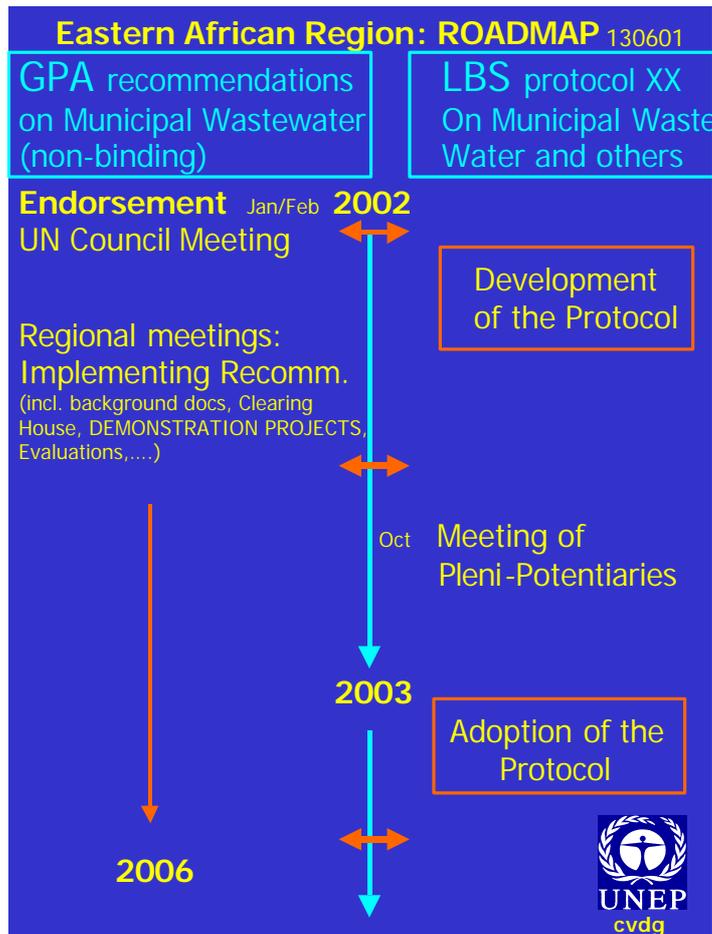
	Salaam/Baga moyo (beach hotels & resorts) – coastline – 50km		pollution	communities	pay surveys	designing (waste management for beach hotels & resorts)	Management Council P.O. Box 63154 Dar es Salaam ruthzt@yahoo.com
Kenya	Mombasa	700,000	Re-use options	Private	Investment loan & grant	Planning	keenkleeners@africaonline.co.ke
Mauritius	Port Louis	200,000	On-site treatment	C	World Bank	I & O	
	Grand Bay	50,000	Treatment offsite disposal	C	World Bank	P & D	
Tanzania	Dar es Salaam	70,000	On-site	Private sector & communities	Willingness to pay surveys	Planning	shayo@fcm.udsm.ac.tz
Seychelles	Praslin	6091	PPP	Policy step to manage municipal wastewater, eg 1993 constitution of Seychelles calls for the provision of proper sanitation system to the population by 2010	World Bank & Government of Seychelles US Environmental Protection Agency (EPA)		Rolph Payet rolphap@seychelles.net
Tanzania	Tanga	400,000	Tree network reticulation Screening Sea outfall	Billing system Customer connection own funds	Grants for capital investment Own revenue collection for O & M	Rehabilitation to 33% coverage Currently in operation	Managing Director, Tanga Urban Water and Sewerage Authority OR Director, Urban Water and Environment Sanitation (WES), Ministry of Water and Livestock Development

							P.O. Box 9153 Dar es Salaam
RSA, Kenya, Tanzania Mozambique	Mombasa, Beira, Tanga, Port Elizabeth		Appropriate Technology	Incl.	Incl.	Learning leads network	To be submitted by ICLEI (3yr, ca. USD 600,000,-)
Mozambique Kenya Tanzania	Mombasa, Beira, Tanga			Development Partnership NGO, CBO, TC		Reporting System to all stakeholders	To be submitted by ICLEI (3yr, ca. USD 600,000,-)
Kenya Mozambique	Beira Mombasa		Decision making tools	Incl.		Decision making tools for city managers & stakeholders	To be submitted (3yr, ca. USD 300,000,-)
Kenya	Mombasa: Kizingo Treatment works rehabilitation and limited extension to Mvita lane	300,000	Old treatment plant	Mombasa municipality	US\$ 350,000	Non functioning aerobic treatment plant	Director of Environment Mombasa Municipality P.O. Box 90440 Mombasa

## I: A Way Forward

The meeting also discussed the way forward for the regional initiative in wastewater management. The various activities charted out for the region are summarized in the road map below.





## J: Recommendations of the Meeting

Participants to the Regional Consultative Meeting on Municipal Wastewater in Eastern Africa Region, 11-15 June 2001, recognizing the following:

- Increasing environmental and socioeconomic impacts of municipal wastewater in the region
- Management of municipal wastewater is challenging and complicated for countries with limited financial and human resources and weak institutional framework
- Sectoral approaches adopted by most of the countries have proven to be less effective in addressing municipal wastewater problems

In this respect, the participants are recommending the following:

## **Policy**

- Social assessments have to address the significance of socio-economic differences when considering management strategies.
- Provide priority setting guidelines & tools in support of better management strategies.
- Develop planning guidelines that are applicable across the region BUT that can be tailored to local conditions (these must be very user friendly).
- Define and apply appropriate incentives at a regional, national, local government level for long-term horizon planning
- Standardize an approach to setting local and regional standards with specific guidelines for ensuring that the local environmental character is reflected in the outcome
- Actively develop and implement community based activities and approaches that better incorporate local community in the management process
- Management should work to ensure that agreed environmental outcomes play a larger role in determining the solution to wastewater problem solving
- Sufficient understanding and base data should be applied to policy development to ensure relevance to the local environment and life cycles
- Create awareness among stakeholders to ensure that key concepts are understood and that people have a strong sense of connection with their own use of water
- Examine management practices and methods to evolve new innovative strategies more appropriate to wastewater issues across stakeholder groups and geographic areas
- Undertake pilot or case studies targeted at testing or examining key aspects of wastewater management in the WIO region
- Undertake appropriate and targeted studies to collect baseline data for national & regional databases
- Work to define monitoring needs and to develop a national monitoring program within each country that ensures consistency within the region. This should be underpinned by regular intercalibration exercises and support for capacity building as required
- Support the development of community stakeholder groups with the mandate to participate in environmental improvement and management
- Improve communication networks among stakeholders (e.g. meetings, workshops, taskforce groups etc.)
- Effort should be made to provide models for consideration in defining management approach including policies and laws that are relevant to the regional situation. Necessary, case by case, to consider the amalgamation or separation of water and wastewater management
- Collect, collate and synthesize appropriate information with the specific intention of devising ways to more equitably distribute the burden and gains derived from effective wastewater management
- The need to encourage Public – Private Partnership (PPP) in wastewater management by establishing proper policy and legal framework; through capacity building and by creating the required awareness

### ***Technology***

- Promotion of research on and apply simple, cost – effective treatment and/or pre-treatment of wastewater
- Promotion of research on best available technologies for water management and promote them at household, commercial and industrial levels e.g. toilet flushing, taps, kitchens etc.

### ***Finance***

- Countries with water supply and sewerage services under the public institutions should move gradually towards privatization. Access more information on successful privatized system to support on going processes
- The central government supported by donors ought to make more capital investments for water/sewerage infrastructure
- The cost recovery system is essential for the sustainable delivery of the water supply and sewerage services. This can be achieved through identify the customer base and by obtaining optimum coverage through infrastructure rehabilitation, and expansion.
- The use of a realistic billing system is essential for customer compliance. To achieve this, it is important to establish a realistic tariff, use of good quality meters and to improve quality of service
- There is a need of instituting sound financial management and information systems in order to effectively manage the resources invested and generated in the service delivery of both fresh and wastewater. Donor support needs be mobilized in this respect

### ***Regional processes***

- To request the Secretariat of the Nairobi Convention to immediately set in motion the process of enacting a protocol on land-based sources and activities to help combat, prevent and reduce marine and coastal pollution in the Eastern African region. The protocol should have a detailed scientific and technical annexes, including an “Annex on municipal wastewater”
- To request the States, parties to the Nairobi Convention, to review and enact their respective national laws and institutions which specifically deal with pollution from municipal wastewater, with the intention of separating between the regulatory and operational functions for better enforcement



