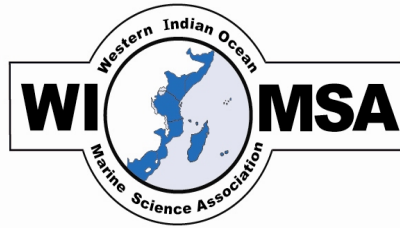




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## **UNEP-GEF WIO-LaB PROJECT**

**ADDRESSING LAND BASED ACTIVITIES IN THE  
WESTERN INDIAN OCEAN**

**MEETING OF THE FORUM FOR ACADEMIC AND RESEARCH INSTITUTIONS  
IN THE WESTERN INDIAN OCEAN REGION (FARI)**

**27 October 2007, Durban, South Africa**

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UNEP/GEF WIO-LaB Project Management Unit  
United Nations Environment Programme  
United Nations Avenue, Gigiri,  
P.O Box 47074, Nairobi, Kenya  
Tel: +254 020 7621248/7621270  
Fax: +254 20 7623203  
Email: [wiolab@unep.org](mailto:wiolab@unep.org)  
Website: <http://www.wiolab.org>

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The report was prepared by Dr. Johnson U. Kitheka and Dr. Peter Scheren of the UNEP-GEF WIO-LaB Project Management Unit.

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## **1. OPENING STATEMENTS**

### **1.1 Representative of the host institution**

1.1.1 The meeting was called to order by Prof. Rudy van der Elst, the Director of the Oceanographic Research Institute (ORI) of South Africa. Prof. Rudy also welcomed the members of the Forum of Academic and Research Institutions to the meeting.

### **1.2 UNEP/Nairobi Convention Secretariat**

1.2.1 The Programme Officer responsible for the Nairobi Convention, Mr. Dixon Waruinge briefed the meeting on the establishment of the Forum for the Heads of Academic and Research Institutions (FARI) and in particular the linkages to the assessment component of the Work Programme of the Convention. He informed the meeting that formation of FARI was based on the need to ensure greater participation of the research and academic institutions in the WIO Region, including the need to assist in implementing the assessment component of the Convention's Work Programme.

1.2.2 Mr. Waruinge also gave a briefing on the previous meeting of FARI that was held in Dar es Salaam, Tanzania in 2004 where the Terms of Reference of the FARI were discussed and a number of activities to be undertaken agreed upon. The activities included, among others, the creation of an inventory of the academic and research institutions in the WIO Region. He further noted that during the first meeting, the need for an institutional framework for FARI was discussed and it was agreed that WIOMSA would assume the function of secretariat of FARI.

1.2.3 Mr. Waruinge further noted that one of the main functions of FARI is to provide quality assurance to products prepared by experts from WIO based institutions. He reiterated that FARI "belongs" to institutions of the WIO Region. He noted the importance of institutionalizing FARI in all projects and programmes implemented in the Nairobi Convention area (WIO Region) in order to ensure projects deliver quality products.

## **2. ORGANIZATION OF THE MEETING**

2.1 Prof. Rudy van der Elst introduced the above mentioned agenda item and requested delegates to propose names for the position of chair of the meeting. However, in view of the precedent that had been set in the previous meeting, it was agreed that South Africa takes the onus of chairing the meeting. Prof. Rudy van der Elst accepted this offer on behalf of South Africa.

2.2 For the post of Rapporteur of the meeting, the delegates unanimously proposed Seychelles. The representative of Seychelles accepted the responsibility. The Project Secretariat prepared the report of the meeting.

### 3. CONSIDERATION AND ADOPTION OF THE PROVISIONAL AGENDA

3.1 The Chair, Prof. Rudy van der Elst introduced the provisional agenda prepared by the WIO-LaB Project Management Unit and requested delegates to suggest any amendments. However, there were no suggested changes and the provisional agenda was adopted without amendments (See Annex 2).

3.2 In his introductory remarks, Prof van der Elst urged the members to make FARI manageable in order to make it easy to operationalize. He urged the delegates to come up with practical activities and recommendations that will make FARI succeed.

3.3 Following the above introductory remarks, the chair invited delegates to introduce themselves and to state their institutional affiliations and designations.

3.4 Dr. Julius Francis, the Executive Secretary of the Western Indian Ocean Marine Science Association (WIOMSA), under whose auspices the institutional framework of FARI is embedded, provided some briefing on the implementation of activities agreed upon during the first meeting of FARI held in Dar es Salaam, Tanzania. The activities included the compilation of information on the capacity of research and academic institutions.

3.5 Dr. Francis informed the meeting that information had been received from a number of institutions in Kenya, Mozambique, Comoros, Seychelles, Madagascar and Tanzania. The type of information collected included general background of the institutions, research capacity, technical and research staff, equipment, publications, theses, budgets and research programmes. He however noted that a number of institutions had not responded to the questionnaire sent to them and most had only provided very scant information. He reported that the inventory of participating institutions would be finalized by the end of November 2007.

3.6 Dr. Francis further informed the meeting that a special FARI webpage, to be hosted at the WIOMSA web site, was being developed. Initially, it had been planned for the webpage to be launched during the 5th WIOMSA Scientific Symposium but this did not materialize because the site was still being developed, he promised that the website would be ready by the end of the year 2007.

3.7 There was a short discussion on the FARI organizational structure and leadership. It was recalled that the FARI meeting held in Mauritius had agreed that FARI should be linked to WIOMSA. The Mauritius Oceanographic Institute (MOI) was tasked with the responsibility of providing the required leadership as the host of the 4<sup>th</sup> WIOMSA Scientific Symposium.

3.8 In view of the fact South Africa hosted the 5<sup>th</sup> WIOMSA Scientific Symposium, it was agreed that the leadership of FARI should now be assumed by the Oceanographic Research Institute of South Africa (ORI). Prof. Rudy van der Elst on behalf of (ORI) agreed to take leadership of FARI supported by WIOMSA in the next 2 years, i.e. until the 6<sup>th</sup> WIOMSA Scientific Symposium.

3.9 Prof. Rudy van der Elst assured the meeting that in the following weeks he would communicate with the heads of academic and research institutions in the WIO Region accordingly.

#### **4. PRESENTATION ON THE PROCESS OF DEVELOPMENT OF AN UPDATED TRANSBOUNDARY DIAGNOSTIC ANALYSIS (TDA) FOR THE WIO-REGION**

4.1 The Project Manager of the UNEP-GEF WIO-LaB Project, Dr. Peter Scheren made some introductory remarks on the process adopted for the preparation of the Transboundary Diagnostic Analysis (TDA) focused on land-based activities in the Western Indian Ocean. He noted that completion of the WIO-LaB TDA will lead to the formulation of the Strategic Action Programme (SAP) that will be negotiated with the participating countries.

4.2 Dr. Scheren also briefed the meeting on the approach that had been used by the WIO-LaB Project in the formulation of TDA/SAP to date, noting in particular that most of the analyses and assessments had been carried out by experts drawn from various institutions in the WIO Region. He recognized the important role that would be played by FARI in providing quality assurance to the products prepared by experts in the WIO Region.

4.3 Dr. Scheren also provided details on what the TDA entails including the key principles, justifications and linkages to SAP. He provided highlights on the main issues identified in the preliminary TDA prepared during the preparatory phase of the WIO-LaB Project, noting that the priority issues identified in the preliminary TDA were closely interlinked with all three GEF-funded projects namely WIO-LaB, ASCLME, and SWIOFP.

4.4 Dr. Scheren further highlighted the approaches that were used to collect data and information used to prepare the WIO-LaB TDA, noting in particular that these were derived from reports and publications prepared by various institutions in the WIO Region including those prepared under the auspices of the WIO-LaB Project. He also expounded on the scope of WIO-LaB TDA noting that it is mainly focused on land-based activities and sources of pollution and degradation of the coastal and marine environment in the WIO Region.

4.5 Dr. Scheren also briefed the meeting on the key characteristics of the WIO-LaB TDA and in particular the main building blocks (studies and assessments) of the TDA.

4.6 Dr. Scheren also briefed the meeting on the composition of the TDA Drafting Team assembled by the WIO-LaB Project. The team is composed of Prof. Jan Glazewski and Mr. Akunga Momanyi who responsible for the governance chapter; Dr. Susan Taljaard and Dr. Sixtus Kayombo responsible for the water and sediment quality degradation chapter; Dr. Salomao Bandeira and Dr. Joseph Kairo responsible for the Physical Alteration and Degradation of Habitats (PADH) chapter; Mr. Jacob Ochiewo responsible for the socio-economics chapter; Dr. Anton Earle responsible for the alterations of freshwater flows and sediment loads chapter and Dr. Johnson Kitheka (also preparing a section of Oceanographic characteristics) and Dr. Peter Scheren who are coordinating the entire TDA development process.

4.7 Dr. Scheren also briefed the meeting on the previous stakeholders' meeting that discussed the process for the preparation of WIO TDA focused on land-based activities and sources, including the meetings of the TDA Drafting team that were held in Nairobi, Kenya.

## **5. DISCUSSION ON THE ROLE OF THE SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE (STAC) IN THE VALIDATION OF TDA FOR THE WIO REGION**

5.1 The WIO-LaB Project Manager, Dr. Peter Scheren, presented the Terms of Reference of the Scientific and Technical Advisory Committee (STAC) with regard to the validation of WIO-LaB TDA, a function to be assumed by FARI (See Annex 3 for details).

5.2 Following the above presentation the chair opened the floor for discussions of the Terms of Reference. During the discussions, the need to maintain the momentum already set by the WIO-LaB Project in the preparation of the TDA was noted. Loss of momentum will be a loss to both the project and the institutions in the WIO Region.

5.3 It was agreed that there was a need for the heads of academic and research institutions to commit themselves to assigning the specific TDA Chapters to experts within their institutions. It was also noted that the review process should not be individualized but should reflect collective wisdom. In this regard, FARI Members would be involved as heads of institutions and not necessarily as experts. It was also noted that if the process of TDA validation was transparent and participatory, it would be much easier to implement priority interventions to be specified in the Strategic Action Programme (SAP).

5.4 It was also suggested that the validation of the TDA should not be like an examination board, but should aim at identifying gaps and building ownership of the TDA and SAP. It should be an interactive process between FARI and TDA Drafting team members. It was further noted that FARI would not actually endorse the TDA but would be expected to review the contents, identify gaps and suggest strategies for the SAP. The approval of the final TDA would be the responsibility of the WIO-LaB Project Steering Committee.

5.5 It was also agreed that institutions would only review specific chapters that they have expertise on. In this regard, the WIO-LaB PMU requested heads of institutions to provide indications on the specific chapters/sections that they would like to review. The list of sections/chapters to be reviewed by specific institutions is presented as Annex 4 of this report.

5.6 It was agreed that the TDA validation process should be a guided process and WIO-LaB PMU was requested to prepare some guidance materials or template that will be used to guide the reviewers.

5.7 It was suggested that the National Focal Points (NFPs) should be involved in the validation process. However, it was noted that this would not be necessary since

NFPs are members of the Project Steering Committee which is expected to approve the final TDA on the basis of the appropriateness of the process used to prepare the document. The final TDA is expected to be tabled to the WIO-LaB Project Steering Committee by April 2008.

5.8 It was also agreed that the validation should focus mainly on the identification of gaps that need to be filled as well as appropriateness of strategies that have been suggested to address various priority issues and problems identified in the TDA. What will be endorsed at policy level will be a document containing a list of interventions, also reflecting technical departments and institutions in the WIO Region that have the necessary capacity and resources to implement.

## **6. PRESENTATION OF THE CURRENT STATUS AND FINDINGS OF THE UPDATED WIO TRANSBOUNDARY DIAGNOSTIC ANALYSIS**

6.1 The WIO-LaB Project Manager, Dr. Peter Scheren provided a short overview of the status and organization of the TDA being prepared under the auspices of the WIO-LaB Project. Thereafter, the members of the WIO TDA Drafting Team were invited to make presentations on the specific chapters they were preparing.

6.2 Dr. Susan Taljaard of the Council for Scientific and Industrial Research of South Africa (CSIR) briefed the meeting on the status of preparation of the TDA Chapter on the water and sediment quality degradation/pollution in the Western Indian Ocean region. She provided highlights on the transboundary context of the problem including the process used to collect and analyze data and information used to prepare the report. She noted the main sources of data and information used in the root-cause analysis and the preparation of Chapter. These included the National and Regional Reports on the Status of pollution including the Regional Synthesis report on the assessment of marine litter problem in the WIO Region, among others.

6.3 Dr. Taljaard also highlighted the results of the root-cause and problem analysis including the main priority areas/issues related to the degradation of water and sediment quality/pollution that were identified. On the basis of the data and information presented in the national and regional reports, including feedback received from the stakeholders during the TDA/SAP Stakeholders' Consultative Workshop held in Nairobi, Kenya in 2007, and also feedback received from the Regional Task Force on Water and Sediment Quality Assessment and Monitoring (3<sup>rd</sup> Meeting held in Maputo, Mozambique in 2007), the main pollution problems in the WIO Region were prioritized for the island and mainland states separately: *Mainland States*: 1. Microbiological contamination; 2. Suspended solids; 3. Chemical pollution; 4. Marine litter; 5. Eutrophication. *Island States*: 1. Microbiological contamination, 2. Suspended solids, 3. Eutrophication, 4. Marine litter, and 5. Chemical pollution

6.4 Dr. Salomao Bandeira of the Eduardo Mondlane University in Mozambique briefed the meeting on the progress made in the preparation of the TDA Chapter on the physical alterations and modifications of coastal and marine habitats (PADH) in the WIO. He highlighted the regional and transboundary contexts of the problem including the results of the root-cause analysis of issues related to the degradation of key coastal and marine ecosystems such as mangroves, seagrass beds, coral reef and coastal forests.



6.5 Dr. Anton Earle of the African Centre for Water Research (ACWR) based in Cape Town, South Africa, briefed the meeting on the progress made in the preparation of the TDA chapter focused on the alteration of freshwater flows and sediment loads in the main river basins draining into the Western Indian Ocean. He highlighted the main sources of data and information used to prepare the chapter, including the results of the root cause analysis, and presented the regional and transboundary context of the water basin problems.

6.6 Prof. Jan Glazewski of the University of Cape Town, South Africa briefed the meeting on the progress made in the preparation of the TDA Chapter on the analysis of governance issues related to the management of the coastal and marine environment in the western Indian Ocean Region. He highlighted the regional context of the problem including the main sources of information used to prepare the chapter. He also briefed the meeting on the main findings of the governance analysis.

## **7. DISCUSSION AND CONCLUSIONS WITH REGARD TO THE PROCESS AND ARRANGEMENTS FOR REVIEW AND VALIDATION OF THE WIO TRANSBOUNDARY DIAGNOSTIC ANALYSIS**

7.1 The WIO-LaB Project Manager, Dr. Peter Scheren highlighted four (4) broad areas that have been identified in the WIO-LaB TDA and requested the FARI representatives to choose specific chapters for which their institutions could take the responsibility of reviewing. It was noted that although the institutions would only be required to review specific chapters, the whole TDA Report would be made available to the institutions. It was also agreed that the review would be conducted electronically (reports transmitted as email attachments). Annex 4 provides a list of areas to be reviewed by institutions as agreed during the meeting.

7.2 There were some discussions on the involvement of the National Focal Points (NFPs) in the entire review /validation process. While the potential role of the National Focal Points was appreciated, it was noted that the TDA validation process would be the responsibility of FARI. However, in Mauritius, the reviews carried out by relevant institutions would be channelled through the Nairobi Convention Committee in the Ministry of Environment and National Development Unit.

7.3 In order to motivate reviewers of the various sections/chapters of the TDA, it was agreed that the WIO-LaB Project would make arrangements to provide institutions with limited amounts of funds as an encouragement for the review work to be undertaken. There was however no decision as to how this would be actualized-whether the project would work with FARI or the individual heads of institutions. It was agreed that the WIO-LaB Project would further consult with the chair of FARI in order to arrive at the most appropriate mechanism of providing incentives to experts in participating institutions.

7.4 There was also an agreement that members of FARI would be furnished with the final version of the Terms of Reference of the Scientific and Technical Appraisal Committee (STAC) that were presented and discussed during the meeting (presented as Annex 3 of this report). These would enable the heads of institutions to familiarize themselves fully with their role in validating the WIO-LaB TDA.

## **8. CLOSURE OF THE MEETING**

8.1 The Chair, Prof. Rudy van der Elst thanked the members of FARI for finding time to participate in the meeting. He promised to communicate with the heads of institutions with regard to follow-up on issues that were discussed during the meeting.

8.2 The Chair also thanked the Nairobi Convention Secretariat, Western Indian Ocean Marine Science Association (WIOMSA) and the WIO-LaB Project Management Unit for the organization of the meeting and also for spearheading the process for the operationalization of FARI.

8.3 There being no other business, the Chair declared the meeting closed at 1.25 p.m. on 27<sup>th</sup> October 2007.

### Annex 1: LIST OF PARTICIPANTS

	<b>Project/Institution</b>	<b>Name of Representative (s)</b>
	Western Indian Ocean Marine Science Association (WIOMSA) Zanzibar, Tanzania	<p><b>Dr. Julius Francis</b> Executive Secretary Western Indian Ocean Marine Science Association (WIOMSA) Zanzibar, Tanzania Email: julius@wiomsa.org/secretary@wiomsa.org</p>
	UNDP/GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Programme	<p><b>Dr. David La Roche</b> Consultant Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Programme United Nations Development Programme/Global Environment Facility (UNDP-GEF) Email: dal1727@myvermont.com</p> <p><b>Dr. David Vousden</b> Project Director Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project Grahamstown, South Africa Email: david.vousden@undp.org</p>
	University of Nairobi, Kenya	<p><b>Prof. Lucy Irungu</b> Principal College of Biological and Physical Sciences University of Nairobi P.O Box 30197 00100 Nairobi, Kenya Email: lirungu@uonbi.ac.ke</p> <p><b>Prof. Micheni Ntiba</b> Director School of Biological and Physical Sciences University of Nairobi P.O Box 30197 00100 Nairobi, Kenya Email: mjntiba@uonbi.ac.ke</p>
	University of Cape Town, South Africa	<p><b>Prof. Jan Glazewski</b> Institute of Marine and Environmental Law University of Cape Town Private Bag Rondebosch 7701, South Africa Tel: 27 21 650 3075/5642 Cell: 082 774 6039 Fax: 27 21 650 5665 Email: glaz@law.uct.ac.za; glaz@iafrica.com</p>

	<b>Project/Institution</b>	<b>Name of Representative (s)</b>
	Council for Scientific and Industrial Research (CSIR), South Africa	<p><b>Dr. Susan Taljaard</b>  Council for Scientific and Industrial Research (CSIR),  Natural Resources and the Environment  P O Box 320, Stellenbosch  7599 South Africa  Tel: +27 21 888 2494  Fax: + 27 21 888 2693  e-mail: staljaar@csir.co.za</p>
	African Centre for Water Research	<p><b>Dr. Anton Earle</b>  Director  African Centre for Water Research  Third Floor, 47 On Strand, Cape Town, 8001,  South Africa  Suite 17, Private Bag X1, Vlaeberg, 8018,  Cape Town South Africa  Tel: +27 (0)21 424 4821  Cell:+27 (0)83 379 2997  Email: antonearle@acwr.co.za</p>
	Fisheries Research Institute, Mozambique	<p><b>Dr. Domingos Gove</b>  Director  Fisheries Research Institute  P.O Box 9603  Av. Mao Tse Tung 381  Maputo, Mozambique  Email: domingos@moziip.org</p>
	Mauritius Oceanography Institute, Mauritius	<p><b>Mr. J. Mosaheb</b>  Mauritius Oceanography Institute  Port Louis, Mauritius  Email: jmosaheb@moi.intnet.mu</p>
	Institute for Hydrography and Navigation (INAHINA), Mozambique.	<p><b>Mr. Augusto Tessenas Bata</b>  National Institute for Hydrography and Navigation (INAHINA)  Maputo, Mozambique.  Email: augusto bata@yahoo.com.br</p> <p><b>Mr. Sinibaldo de Jesus Varela Cauhanga</b>  National Institute for Hydrography and Navigation (INAHINA)  Maputo, Mozambique.  Email: scanhanga@yahoo.com.br</p>
	Université de Comores, Comores.	<p><b>Mr. Kamaliddine Afraitane</b>  Faculté des Sciences  Université de Comores  Moroni, Comores.  Email : kamaliddine@yahoo.fr</p>

	<b>Project/Institution</b>	<b>Name of Representative (s)</b>
	Tanzania Fisheries Research Institute (TAFIRI), Tanzania	<b>Dr. Yohana L. Budeba</b> Tanzania Fisheries Research Institute (TAFIRI) P.O Box 9750 Dar es Salaam, Tanzania Email: yobudeba@yahoo.com
	University of Dar es Salaam, Tanzania	<b>Dr. John Machiwa</b> Faculty of Aquatic Sciences and Technology (FAST) Department of Aquatic Environment and Conservation University of Dar es Salaam P.O. Box 35064, Dar es Salaam TANZANIA Tel: 255-22-2410462; 255-741-237774 Fax: 255-22-2410480 Email: jmachiwa@udsm.ac.tz
	University Eduardo Mondlane	<b>Dr. Salomao Bandeira</b> Department of Biological Sciences, University Eduardo Mondlane Maputo, Mozambique Tel: 258 21491223 Fax: 258 21492176 Email: sband@zebra.uem.mz
	Oceanographic Research Institute, South Africa	<b>Prof. Rudy van Der Elst</b> Director Oceanographic Research Institute P O Box 10712, Marine Parade 4056, South Africa Tel: +27-31-328 8177 Fax: +27-31-328 8199 E-mail : rudy@ori.org.za
	CNRE, Madagascar	<b>Mr. Mong Yves Jean Michel</b> Chercheur au CNRE B.P. 1739 - 101 Antananarivo, MADAGASCAR Mobile: 261 33 14 87 888 E-mail: mong@simicro.mg
	Seychelles Fishing Authority (SFA), Seychelles	<b>Mr. Riaz Aumeeroddy</b> Seychelles Fishing Authority (SFA) P.O Box 449 Victoria, Seychelles. Email: raumeeroddy@sfa.sc

	<b>Project/Institution</b>	<b>Name of Representative (s)</b>
	Kenya Marine and Fisheries Research Institute, Kenya	<p><b>Dr. Johnson Kazungu</b>  Director,  Kenya Marine and Fisheries Research Institute (KMFRI)  P.O Box 81651  Mombasa, Kenya  Email: director@kmfri.co.ke</p>
	UNEP/Nairobi Convention	<p><b>Mr. Dixon Waruinge</b>  Programme Officer  Nairobi and Abidjan Conventions  P.O Box 47074  Nairobi, Kenya  Tel: +254-020-623130  Fax: +254-020-623130  Email: dixon.waruinge@unep.org</p>
	UNEP/GEF Addressing land-based Activities in the Western Indian Ocean Project (WIO-LaB)	<p><b>Dr. Peter Scheren</b>  Project Manager  UNEP-GEF WIO-LaB Project Office  UNEP, UN Gigiri Complex  P. O. Box 30552  Nairobi, Kenya  Tel: 254 2 622025  Fax: 254 2 624618  E-mail: peter.scheren@unep.org</p> <p><b>Dr. Johnson U. Kitheka</b>  Project Officer/Environmental Scientist  UNEP-GEF WIO-LaB Project  P. O. Box 30552  Nairobi, Kenya  Tel: 254 2 621248  Fax: 254 2 624618  Email: Johnson.kitheka@unep.org</p>

## **Annex 2: AGENDA**

### **Meeting of the Forum of Academic and Research Institutions (FARI) Provisional agenda**

1. Opening statements:
  - a. Representative of the host institution
  - b. UNEP/Nairobi Convention Secretariat
2. Organization of the meeting (designation of Chairperson and Rapporteur)
3. Consideration and adoption of the provisional agenda
4. Presentation on the process of development of an updated Transboundary Diagnostic Analysis (TDA) for the WIO-Region
5. Discussion on the role of the Scientific and Technical Advisory Committee (STAC) in the validation of TDA for the WIO Region
6. Presentation of the current status and findings of the updated WIO Transboundary Diagnostic Analysis :
  - a. General overview of the status and organization of the TDA (WIO-LaB PMU)
  - b. Pollution from Land-based Activities (Dr. Susan Taljaard)
  - c. Physical Alteration and Destruction of Habitats (Dr. Salomao Bandeira)
  - d. Alteration of Freshwater Flow and Sediment Transport (Dr. Anton Earle)
  - e. Governance Analysis (Prof. Jan Glazewski)
7. Discussion and conclusions with regard to the process and arrangements for review and validation of the WIO Transboundary Diagnostic Analysis by the STAC
8. Any other business
9. Closure of the meeting

## **Annex 3: TERMS OF REFERENCE**

### **REGIONAL SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE FOR THE PREPARATION OF A TRANSBOUNDARY DIAGNOSTIC ANALYSIS (TDA) FOR THE WIO REGION**

#### **a. Background**

The project “Addressing land-based activities in the Western Indian Ocean (WIO-LaB)” is an initiative of the UNEP Nairobi Convention for the protection and management of the coastal and marine environment in Eastern Africa (WIO region), designed to address some of the main environmental problems and issues related to the degradation of the marine and coastal environment due to land-based activities in the Western Indian Ocean (WIO) region. The Project represents a strong partnership between its eight participating countries (Kenya, Tanzania, Mozambique, South Africa, Madagascar, Mauritius, Comoros and Seychelles), the United Nations Environment Programme (UNEP) and its financiers: the Government of Norway and the Global Environment Facility (GEF).

The WIO-LaB Project is also designed as a demonstration project for the Global Programme of Action for Protection of the Marine Environment from Land-based Activities (GPA) in the WIO region. In this regard, the objectives of the WIO-LaB Project are to:

- (1) Reduce stress to the ecosystem by improving water and sediment quality;
- (2) Strengthen regional legal basis for preventing land-based sources of pollution, including implementation of the GPA;
- (3) Develop regional capacity and strengthen institutions in the Western Indian Ocean Region for sustainable, less polluting development including the implementation of the Nairobi Convention.

One of the key activities of the WIO-LaB Project concerns the execution of a Transboundary Diagnostic Analysis (TDA) focused on land-based activities in the WIO region. The basis for this output is provided by the Preliminary TDA (2002) prepared during the preparatory (PDF-B) Phase of the WIO-LaB Project.

As part of its strategy to deliver on this goal, the Project established a regional TDA Drafting Team consisting of scientific and socio-economic experts from the WIO Region. The main deliverable expected from the TDA Drafting Team is a comprehensive TDA report on land-based activities in the WIO region that will provide the basis for strategic actions to be elaborated in the form of a full-scale Strategic Action Programme (SAP) for the Region<sup>1</sup>.

The principal mechanism for validation of the TDA report will be the Forum for Academic and Research Institutions in the Western Indian Ocean (FARI) that will function as Scientific and Technical Advisory Committee (STAC). The FARI/STAC composed of the heads (or the representatives) of academic and research institutions including experts representing key organizations active in the conservation of the WIO marine and coastal ecosystems.

The specific duties and responsibilities of the STAC are presented in the following section.

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<sup>1</sup> A Preliminary SAP (2002) was prepared during the preparatory (PDF-B) Phase of the WIO-LaB Project.



## **b. Duties and Responsibilities**

Through the coordination of the UNEP-GEF WIO-LaB Project Manager, STAC will have the following responsibilities:

1. Act as a Scientific and Technical Advisory Board for the TDA Drafting Team throughout the various stages of development of the WIO TDA report.
2. Review the draft WIO TDA report as prepared and submitted by the TDA Drafting Team.
3. Facilitate and coordinate the review of the draft TDA report by the designated national experts in participating institutions.
4. Recommend appropriate mechanisms and/or processes for the preparation of the Strategic Action Plan (SAP) for the WIO Region.

## **c. Duration**

The total duration of the assignment will be six months commencing October 2007. The WIO-LaB Project would organize at least two (2) meetings of the FARI/STAC in any one of the participating countries.

## **d. Activities and outputs**

Timing of activities and outputs will be as follows:

<b>Activities</b>	<b>Output</b>	<b>Time frame</b>
1. Start of the assignment.	Commencement of the assignment	October 2007
2. Consideration/Review of the Terms of Reference (TOR) and Work Plan	Terms of Reference (TOR) and Work plan	October - November 2007
3. Review of the draft WIO TDA Chapters by the designated experts in national institutions	Review of various specific chapters by National Experts	February-March 2008
4. Meeting of the STAC to review and discuss feedback on the draft WIO TDA.	Review of the comments made by experts on the draft WIO TDA	April 2008
5. Updating the draft WIO TDA based on the review by STAC	Updated WIO TDA Report	April 2007
6. Meeting of the WIO-LaB Project Steering Committee to approve the final updated version of the WIO TDA.	Approved TDA	May 2008

## **e. Constitution and qualifications of the STAC**

The STAC will be composed of the heads of academic and research institutions (or their designated representatives) as represented in the Forum for Academic and Research Institutions in the WIO-Region (FARI), as well as delegated experts of key organizations that are active in the conservation of the WIO marine and coastal ecosystems.

Members of STAC should possess at least an MSc degree in a relevant natural or social science discipline and must have considerable working experience in any one of the countries in WIO Region. Experience in dealing with issues related to coastal and marine environment protection, conservation, management and research is highly desirable.

**Annex 4: Institutions assigned to review various chapters of the WIO-LaB TDA**

	<b>Water and sediment Quality Degradation/Pollution</b>	<b>Physical Alteration and Destruction of Habitats (PADH)</b>	<b>Alteration of freshwater flow and sediment loads from River Basins</b>	<b>Governance</b>
<b>1.</b>	Faculty of Aquatic Sciences and Technology (FAST), University of Dar es Salaam, Tanzania	School of Biological and Physical Sciences University of Nairobi, Kenya	Oceanographic Research Institute, South Africa	School of Law, University of Nairobi, Kenya
<b>2.</b>	Institute of Marine Sciences (IMS), Zanzibar, Tanzania	Oceanographic Research Institute, South Africa	Faculty of Aquatic Sciences and Technology (FAST), University of Dar es Salaam, Tanzania	Oceanographic Research Institute, South Africa
<b>3.</b>	Tanzania Fisheries Research Institute (TAFIRI), Tanzania	Fisheries Research Institute, Mozambique	Institute of Marine Sciences (IMS), Zanzibar, Tanzania	Western Indian Ocean Marine Science Association (WIOMSA) Zanzibar, Tanzania
<b>4.</b>	Centre National de Recherches sur l'Environnement (CNRE), Madagascar	Kenya Marine and Fisheries Research Institute, Kenya	Centre National de Recherches sur l'Environnement (CNRE), Madagascar	Tanzania Fisheries Research Institute (TAFIRI), Tanzania
<b>5.</b>	Institute Halieutique et des Sciences Marines (IHSM), Madagascar.	Western Indian Ocean Marine Science Association (WIOMSA) Zanzibar, Tanzania		Centre National de Recherches sur l'Environnement (CNRE), Madagascar
<b>6.</b>	Faculté des Sciences Université de Comores, Comores.	Institute of Marine Sciences (IMS), Zanzibar, Tanzania		Institute Halieutique et des Sciences Marines (IHSM), Madagascar.

	<b>Water and sediment Quality Degradation/Pollution</b>	<b>Physical Alteration and Destruction of Habitats (PADH)</b>	<b>Alteration of freshwater flow and sediment loads from River Basins</b>	<b>Governance</b>
<b>7.</b>		Tanzania Fisheries Research Institute (TAFIRI), Tanzania		Faculté des Sciences Université de Comores, Comores.
<b>8.</b>		Centre National de Recherches sur l'Environnement (CNRE), Madagascar		
<b>9.</b>		Institute Halieutique et des Sciences Marines (IHSM), Madagascar.		
<b>10.</b>		Faculté des Sciences Université de Comores, Comores.		