

GUINEA CURRENT LARGE MARINE ECOSYSTEM PROJECT



REPORT OF THE TRANS-BOUNDARY DIAGNOSTIC ANALYSIS (TDA) AND INDICATORS WORKSHOP

ACCRA, GHANA, 18 - 22 APRIL 2005



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1. INTRODUCTION

The Trans-boundary Diagnostic Analysis (TDA) and Indicators workshop, of the GCLME project, was held at the auditorium of the Science and Technology Policy Research Institute (STEPRI) Accra, Ghana from the 18th to 22nd of April 2005. The two workshops were held back to back, with the Trans-boundary Diagnostic Analysis Workshop being held from 18th to 20th, while the Indicators Workshop was from 21st to 22nd.

The workshops were attended by experts in various disciplines from the 16 member countries of the Guinea Current Large Marine Ecosystem (GCLME) region, who were invited based on their personal capacity. Others were cooperating agencies, UN and non-UN, Non-Governmental Organizations (NGOs) and other stakeholders. Also in attendance were the UNDP Regional Coordinator for International Waters and Biodiversity for West and Central Africa, Dr. Abdoulaye Ndiaye, and a representative from the United States National Oceanic and Atmospheric Administration (NOAA), Dr. Bradford Brown.

2. BACKGROUND

The Guinea Current region encompassing the area between Guinea Bissau and Angola faces challenging issues involving population, urbanization, fisheries depletion, water pollution, public health and sanitation, habitat degradation, loss of biological diversity, land use planning and coastal erosion. The Global Environment Facility (GEF) funded pilot project, “Water Pollution Control and Biodiversity Conservation in the Gulf of Guinea Large Marine Ecosystem” from 1995 – 1999, was initiated to address these problems in six countries in the region namely, Benin, Cameroon, Cote d’Ivoire, Ghana, Nigeria and Togo.

At the end of the project, Ministers of Environment of the participating countries called for the initiation of an expanded project to include all 10 new countries situated within the natural limits of the Guinea Current Large Marine Ecosystem. In response to the Ministers’ request in the PDF-B project, “Development of a Strategic Action Programme for the Guinea Current Large Marine Ecosystem (GCLME)” was initiated.

Two important targets of the first year of the GCLME project implementation are the updating and completion of the TDA and the definition and adoption of indicators relevant

to the project. Whereas the TDA provides a basis for the formulation of the Strategic Action Programme (SAP), the indicators which include Process Indicators, Stress Reduction Indicators and Environmental Status Indicators, serve to inform the Monitoring and Evaluation (M & E) process and are adopted by the participating countries as tools for long term monitoring of SAP implementation.

The joint Workshop recognised the intimate relationship between development of the TDA and the definition of Indicators. The Workshop was the necessary first step towards the attainment of the above-mentioned targets.

3. OPENING CEREMONY

Mr. Edward Osei Nsenkyire, the National Project Director of Ghana, represented by Mr. Napoleon Gbolonyo, Senior Research Scientist welcomed the participants to the Trans-boundary Diagnostic Analysis (TDA) and Indicators Joint Workshop.

The opening ceremony was chaired by International Consultant, Mr. George Nai. The chairman in welcoming the participants reiterated the importance of the Regional Approach to the management of the GCLME resources. He also enjoined the participants to proffer permanent solution to these problems and monitoring to assess the effectiveness of the solution measures. In acknowledging the importance of funds for the Workshop, he thanked all those involved in its' provision. Prof. Jide Alo, Director of the Nigerian Ministry of Environment/ University of Lagos Linkage Centre for Human Resources Development and chairman of all the working sessions of the development of the TDA during the PDF phase, welcomed the participants and gave a short statement with regards to the GCLME TDA, as the first step appropriate to diagnose problems for action in our International Waters and for the management of the GCLME resources.

Prof. Chidi Ibe, Regional Director of the GCLME, also welcomed participants, saluting their willingness to sacrifice for common good. He stated that participants were here because of their expertise / knowledge and potential contribution to the success of the joint Workshop. In his speech he thanked Dr. Ndiaye of UNDP for his commitment in ensuring that the project moved forward, Prof. Alo for guiding the TDA process and for his clairvoyance, Ghana for being an excellent host to the project's Regional Coordination Unit and the Director General of the Council for Scientific and Industrial Research (CSIR). In

wishing the participants successful deliberations, he stated that the same team will participate in the two Workshops because of the intimate relationship between the TDA and Indicators, thus placing a solid footing for the rest of the GCLME activities for the year and beyond.

The Ghanaian Honourable Minister for Environment and Science was unavoidably absent but represented by Mr. Moses Ajaab. The Minister, in her speech, emphasized the importance of the coastal area and the significant impact of development on the environment and hence the need for scientists to advise the government on management, through integrated resource management approach to establish a balance between economic activity and resources. He declared the Workshop open at 10.50 am.

The vote of thanks was given by Mr. Napoleon Gbolonyo.

4. TECHNICAL SESSION

The technical session of the Workshop commenced under the chairmanship of Prof. Jide Alo, who invited Prof. Chidi Ibe to present the project titled “Combating Living Resource Depletion and Coastal Area Degradation in the Guinea Current Large Marine Ecosystem through Ecosystem- Based Regional Actions”.

Prof. Ibe identified four major trans-boundary environmental issues in the TDA as:

1. Decline in GCLME fish stocks and unsustainable harvesting of living resources.
2. Uncertainty regarding ecosystem status, integrity (changes in community composition, vulnerable species and biodiversity, introduction of alien species) and yields in a highly variable environment including effects of global climate change.
3. Deterioration in water quality (chronic and catastrophic) from land and sea based activities, eutrophication and harmful algal blooms.
4. Habitat destruction and alteration including inter alia, modification of seabed and coastal zone, degradation of coastscape and coastline erosion.

He stated that resolution of the above issues are encapsulated in the overall development goals of:

1. Recovery of depleted fish stocks

2. Restoration of degraded habitats
3. Reduction of land and ship based pollution
4. Creation of ecosystem-wide assessment and management framework for sustainable use of living and non-living resources in the GCLME.

He enunciated that in achieving these goals, priority needs to be given to capacity building, as sustainability would be derived from the improved capacity, strengthened national and regional institutions and improved policy / legislative framework.

He outlined major components in attaining the expected results to include:

1. Finalize SAP and develop sustainable financing mechanisms for its implementation.
2. Recovery and sustainability of depleted fisheries and living marine resources including mariculture.
3. Planning for biodiversity conservation, restoration of degraded habitats and developing strategies for reducing coastal erosion.
4. Reduced land and sea based pollution and improved water quality.
5. Regional coordination and institutional stability.

He also enumerated that there were nine demonstration projects within the region that seek to address these environmental issues and these consist of three regional and six national projects.

Regional:

1. Trends in Primary Productivity and Implication for Carrying Capacity of the System.
2. Fish Trawl Survey and Stock Assessments.
3. Establishment of Common Environmental Information Management Systems.

National:

1. Creation of Marine Protected Areas in Benin
2. Institution of ICAM in Kribi, Cameroon
3. Low Cost, Low Technology Coastal Defence Measure in Cote d'Ivoire
4. Creation of a Waste Stock Exchange Management System in Ghana

5. Nypa Palm Clearance and Mangrove Re-forestation in Nigeria
6. Reduction of Nutrient Discharges in Togo

It is expected that results to be obtained will include:

1. Improved institutional structure to address priority regional issues including a GCC for conducting effective regional interventions.
2. Improved legal / management structures for addressing priority issues, including a protocol on land based activities for the Abidjan convention and coastal erosion.
3. Nine successful demonstration projects as basis for replication in and outside the region as concrete steps towards achieving agreed environmental quality objectives.
4. Nationally endorsed Strategic Action Plans and NAPs with accompanying sustainable financing plan to lead the way towards continued incremental improvement to the GCLME, based on regional commitment and consensus.
5. Enforce national and regional data and information acquisitions, exchange and management systems to support decision-making.
6. Effective coordination of programme activities and preliminary SAP implementation through the establishment of a Regional Coordination Unit, Steering Committee and development of a GCLME.

Five activities or modules would be involved and these are namely:

1. Productivity
2. Fish and Fisheries
3. Pollution and Ecosystem Health
4. Socio-Economics
5. Governance

Prof. Alo, chairman of the technical session also asked Prof. Ibe to present the TDA document, which constitutes the basis for the TDA Workshop. The crucial components of the document presented were:

1. Identification of Major Perceived Problems and Issues (MPPI)
2. Causal Chain / Root Cause Analysis
3. Synthesis Matrix

4. Priority Areas of Future Interventions
5. Ecosystem Quality Objectives (EQOs)
6. Towards a Sustainable Future in the GCLME Region.

After the presentation, the participants were broken into Working Groups on the basis of the major problems / issues identified in the TDA document. The groups and their thematic areas were:

- Group 1: Decline in Fish Stocks and Unsustainable Harvesting of Living Resources.
- Group 2: Uncertainty Regarding Ecosystem Status and Yields in a Highly Variable Environment Including Climate Change.
- Group 3: Deterioration in Water Quality (Chronic and Catastrophic), Pollution from Sea and Land Based Activities, Eutrophication and Harmful Algal Blooms
- Group 4: Habitat Destruction and Alteration, including inter alia, Modification of Seabed and Coastal Zone Degradation of Coastscape and Coastline Erosion

The groups were also given cross-cutting issues to work on and these were:

1. Low Level Capacity, Expertise and Ability to Monitor Environmental Variability.
2. Inadequate / Inappropriate Data and Information Management.
3. Governance and Institutional Framework.

The thematic areas were addressed by each group as follows:

1. Problems
2. Causes of Problems
3. Impacts
4. Risks / Uncertainty
5. Socio-Economic Consequences
6. Trans-boundary Consequences
7. Activities / Solutions
8. Anticipated Output

5. REPORT OF THE WORKING GROUPS

The Working Groups set out to work on the thematic areas of the TDA from the afternoon of the 18th to the morning of the 19th of April 2005. Group 2 changed the title of its thematic area from “Uncertainty Regarding Ecosystem Status and Yields in a Highly Variable Environment Including Climate Change” to “Threats to Ecosystem Integrity and Loss of Yields in a Highly Variable Environment”. A title it felt would be more suitable to the issues in the theme.

The chairman Prof. Alo called for a half way review of the Working Groups at a plenary session in the afternoon of the 19th to ensure that each group was working according to the terms of reference. Group representatives presented the work done so far and comments and contributions were made by other participants. The final presentations of the groups on the TDA were done during the afternoon plenary session of 20th April. The report of each group is presented in Annex D.

The second Workshop commenced on the 21st of April with Prof. Alo still chairing the programme. In his opening speech he stated that for the next two days the log frame matrix and proposed indicators would be examined. He then invited Dr. Abdoulaye Ndiaye, the UNDP Regional Coordinator for International Waters and Biodiversity for West and Central Africa to expatiate on what was expected from the Indicators Workshop.

Dr. Ndiaye welcomed the participants and stated that, strictly speaking, this marked the kick off of the project. He also said the project is a partnership between the recipient countries involved and GEF. GEF Secretariat is to coordinate and ensure accountability and endorsement by participating countries. There are three Agencies for the implementation of GEF projects: United Nations Development Programme (UNDP), World Bank and United Nations Environment Programme (UNEP). GEF gives the financial assistance for the execution of the approved projects. UNDP and the other Implementers have chosen United Nations Industrial Development Organization (UNIDO) as the executing agency.

GEF’s contribution to the project is \$20 m while counterpart funding from the countries is \$34 m, which demonstrates ownership by the countries as well as the probability of ensuring sustainability and continuity beyond GEF funding of the project.

The objective is to involve all stakeholders. Consultation is essential to be on the same level and establish confidence in each other in order to achieve the common goal of the project. The project is to benefit the 300 m people in the GCLME region. UNDP's supervisory role is to ensure that resources are efficiently used to achieve the expected result.

At the invitation of the chairman, Dr. Brad Brown of NOAA presented a case study from the USA of the implementation of Large Marine Ecosystem Projects.

Thereafter, the Regional Coordinator of the GCLME, Prof. Ibe presented the Log Frame Matrix Analysis. The Log Frame Matrix Analysis entails the development of a tool for the logical implementation of the components of the project. He stated that the SAP would put in place the necessary institutional arrangements.

The participants again broke into Working Groups to examine and update the Log Frame Matrix Analysis. At a plenary session in the afternoon of 22nd April, the different Working Groups presented the results of their deliberations, which was extensively discussed. The reports of the Working Groups are in Annex E.

6. CLOSING CEREMONY

The Joint Workshop on TDA and Indicators was brought to an end at 7.30 pm on the 22nd of April with a short ceremony chaired by Ms. P. O. Abohweyere from Nigeria in the presence of representatives of Ghana's Ministry of Environment and Science and the International Waters.

ANNEX A

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ANNEX B

WORKSHOP PROGRAMME

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:30-10:00	Opening	TDA update (Working Groups)	TDA update (Working Groups)	Presentation of Log Frame Analysis/ M and E process	Working Groups
10:00-10:30	Coffee/tea break				
10:30-11:30	Presentation of GCLME Project	TDA update (Working Groups)	TDA update (Working Groups Finalization.)	Indicators (Working Groups on Process Indicators/Stress Indicators/Environment status Indicators)	Working Groups Finalization
11:30-12:30	Presentation of TDA Document				
12:30-13:30	Lunch				
13:30-15:30	TDA update Plenary	TDA update (Working Groups)	TDA update (Plenary: Synthesis)	Indicators (Working Groups Continue)	Indicators Synthesis in Plenary
15:30-16:00	Coffee/tea break				
16:00-18:00	TDA update Plenary	TDA update (Working Groups)	TDA update (Synthesis and Conclusion)	Indicators (Working Groups Continue)	Indicators Synthesis in Plenary Conclusion and Closing

ANNEX C

STATEMENT BY THE HONOURABLE DEPUTY MINISTER FOR ENVIRONMENT AND SCIENCE, DR ADOBIRE GEYSIKA AGAMBILLA

Mr. Chairman,
Regional Director of the Guinea Current Large Marine Ecosystem (GCLME) Project,
Representatives of UN Agencies,
Distinguished Members of the GCLME National Project Steering Committee,
Distinguished Workshop Participants
Ladies and Gentlemen,

It is a privilege and a pleasure for me to be part of such an important Workshop whose theme is informed by the Trans-boundary Diagnostic Analysis (TDA) of the Guinea Current Large Marine Ecosystem (GCLME) Project, which provides a basis for the development of a Regional Strategic Action Plan.

Mr. Chairman,
The Trans-boundary nature of the GCLME Project places an important and major responsibility on all the participating countries to put their shoulders to the wheel to ensure an unbridled pursuit of the clearly defined goals of the GCLME project. This is the only way that we, as worthy stakeholders, can actualize the salient objectives of the project.

The main objective of the TDA is to provide a framework of national and regional policies and practical strategic actions for the preparation of a comprehensive Regional Strategic Action Plan by the coastal states. This is expected to provide coastal states the opportunities to undertake national and regional approaches to protect and maintain the biological diversity and habitats which form an integrated whole and an essential component of the global life support system.

It is an undoubted fact that in our various countries, as participating nations of the GCLME project, we may have national plans and strategies which may significantly address some of the issues that informed the birth of this project, but the TDA has the capacity to deliver more sustainable Environmental Management Approaches that will effectively prevent, reduce and control land-based sources of pollution across the region. This can lead to the adoption and practice of Environmental Management Systems for effective co-regulation of the private sector.

According to some environmental reports on the GCLME Project, the most significant impacts on our ecosystem include:

1. Discharge of industrial effluents with high organic loading.
2. Dumping of sewage with micro-organisms and pathogens with/without industrial effluents.
3. Oil spills from principal oil refineries, explorations and other oil handling operations
4. Development of coastal area infrastructure especially ports and hydropower generation on inland waters disrupting estuary ecosystems.

I urge you as scientists and technocrats participating in this Workshop to advise your various governments to commit themselves to the conservation and sustainable use of marine living resources for optimum benefit. Our governments should also take action to promote sustainable exploitation of marine living resources to meet human nutritional needs as well as social, economic and development goals.

I also wish to advise that in our attempt to address the broad range of social and environmental issues confronting us regionally, using an integrated resource management approach, we should also accommodate and protect certain strategic national installations such as industries. Such industries may be pivotal to the stabilization of our national economies. I am simply calling for the maintenance of a delicate balance between economic activities and environmental protection.

Distinguished Ladies and Gentlemen,

I wish to commend the organizers and sponsors of this Workshop, UNIDO, UNEP, UNDP, GEF and the Regional Coordination Unit (RCU) of the GCLME Project for their foresight and commitment towards the numerous projects initiated within the sub-region to address issues concerning the coastal and marine environment and their living resources.

I take this opportunity to also welcome you all to this dear nation of ours, Ghana. I trust that the five-day deliberations that we are going to have, will in no small way add substantially to the knowledge and experience we already possess. I know that the programme for this Workshop is very tight, nonetheless I urge you to find time to visit some of our tourist sites and to enjoy the proverbial Ghanaian hospitality.

With this new resolve, which makes it imperative for all countries who share international waters to work together towards a sustainable exploitation of our natural resources, I humbly declare this Workshop duly open.

I wish you all the best and look forward to fruitful deliberations.

Thank you.

ANNEX D

WORKING GROUP REPORTS ON THEMATIC AREAS OF THE TDA

GROUP 1

THEME: DECLINE IN GCLME FISH STOCKS AND UNSUSTAINABLE HARVESTING OF LIVING RESOURCES

Members

1. Dr. Raymond G. Johnson (<i>Chairman</i>)	Sierra Leone
2. Harry Barnes-Dabban (<i>Rapporteur</i>)	Ghana
3. Benjamin S. Karmorh, Jr	Liberia
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9. Maria Esperansa Pires dos Santos	Angola
10. Charlemagne Assogba (<i>Interpreter</i>)	Kenya

Introduction

After brief introductory remarks by the chairman, discussion on the theme followed. Group discussions centred on the following:

- a) Problems
- b) Causes of problems
- c) Impacts
- d) Risks/Uncertainties
- e) Socio-economic consequences
- f) Trans-boundary consequences
- g) Activities/solutions
- h) Anticipated outputs

The following problems were identified:

- Inappropriate (dangerous) fishing methods (under size meshes, fish blasting, fish poisoning, etc.)
- Habitat destruction/environmental degradation (destruction of fish breeding and spawning grounds, mangrove clearing)
- Pollution
- Encroachment of industrial vessels into areas reserved for artisanal fisheries
- Causes related to global climate change
- Areas to be monitored/controlled and placed under surveillance too large
- Inadequate control of access to the resources
- Inadequate control on fishing gear and technology

Causes of Problems

- Ineffective institutional and legal framework
- Limited knowledge about the resources and the environment
- Ineffective Monitoring, Control and Surveillance (MCS)
- Ineffective intersectoral coordination
- Habitat degradation

Activities/Solutions

- Establish regional forum on monitoring, control and surveillance activities – Page 98

Risks/Uncertainties

- Political instability (Civil unrest, civil war, etc)– Page 98

Socio-economic Consequences

- Population surge in non fishing areas – Page 98

Trans-boundary Consequences

- Resource decline – page 98
- Conflicts

Explanatory notes

- Conflicts may arise from encroachment, availability of limited space, physical conflict, harvesting of fish at different stages of their life history and harvesting of migratory species.

Activities/Solutions

- Establish regional forum for resource use, conflict management/Expand the mandate of the forum for stock assessment and harmonization of management action to include resource use conflict resolution – Page 98

Anticipated Outputs

- Regional forum with expanded mandate to deal with resource use conflict established – Page 98

Recommended Changes

Page No 54, Table/Figure No 5.1-2

- Under sub heading ‘Inadequate control of access to resources’: Lack of or in operational MCS should read ‘Inadequate MCS’
- Lack of intersectoral coordination should read ‘Inefficient intersectoral coordination’

Mariculture

Page No 107, Table/Figure No T.A3

Causes

- Insufficient technical expertise

Risk/Uncertainties

- Modification of species diversity

Activities

- Workshop to develop guidelines on sustainable mariculture

Explanatory notes

- Mariculture, especially cage culture is an activity that requires very high environmental standards; therefore, a well trained group of technical experts is crucial to the success of any sustainable mariculture project.
- Modification of species diversity is likely to occur where accidental species release takes place, e.g. in case of cage breakage.

Cross Cutting Issues**Recommended Changes**

- Add to Causal Chain Analysis Fig. 5.1-2 on page 54, under the sub theme 'Inadequate Control of Access to Resources' Inadequate and/or inappropriate data and information management (Table C6).
- Add to Table A1 on pages 98-99 under the heading 'Causes' Inadequate and/or inappropriate governance regime (Table C7).
- Add to Causal Chain Analysis Fig.51-2 on page 54, under the sub theme 'Increasing Catch and Effort' Climate change issues.
- First line – in place of matrix put matrices (P.97).
- Under Table A 1-5; delete A6 P.97.
- Under Table C 1-5 (pg.97); add C6 and C7 and their corresponding titles (see pg. 144-146).
- P.64 Environment impacts as a heading should precede text starting with Sea-level rise etc.
- Delete Fluctuations in biodiversity as there is no accompanying text to that heading (Pg.64).

GROUP 2

THEME: THREATS TO ECOSYSTEM INTEGRITY AND LOSS OF YIELDS IN A HIGHLY VARIABLE ENVIRONMENT

Members

1. George Wiafe (<i>Chair</i>)	Ghana
2. Parcy Abohweyere (<i>Rapporteur</i>)	Nigeria
3. Prof. Dike I. Nwankwo	Nigeria
4. Trinidad M. Besari	Equatorial Guinea
5. Adwoa Paintsil	Ghana
6. Leonard Muamba-Kanda	DR Congo
7. Humphrey Kuma	Ghana
8. Ama Kudom-Agyemang	Ghana
9. Nkwanyuo Victor Mbai	Cameroon
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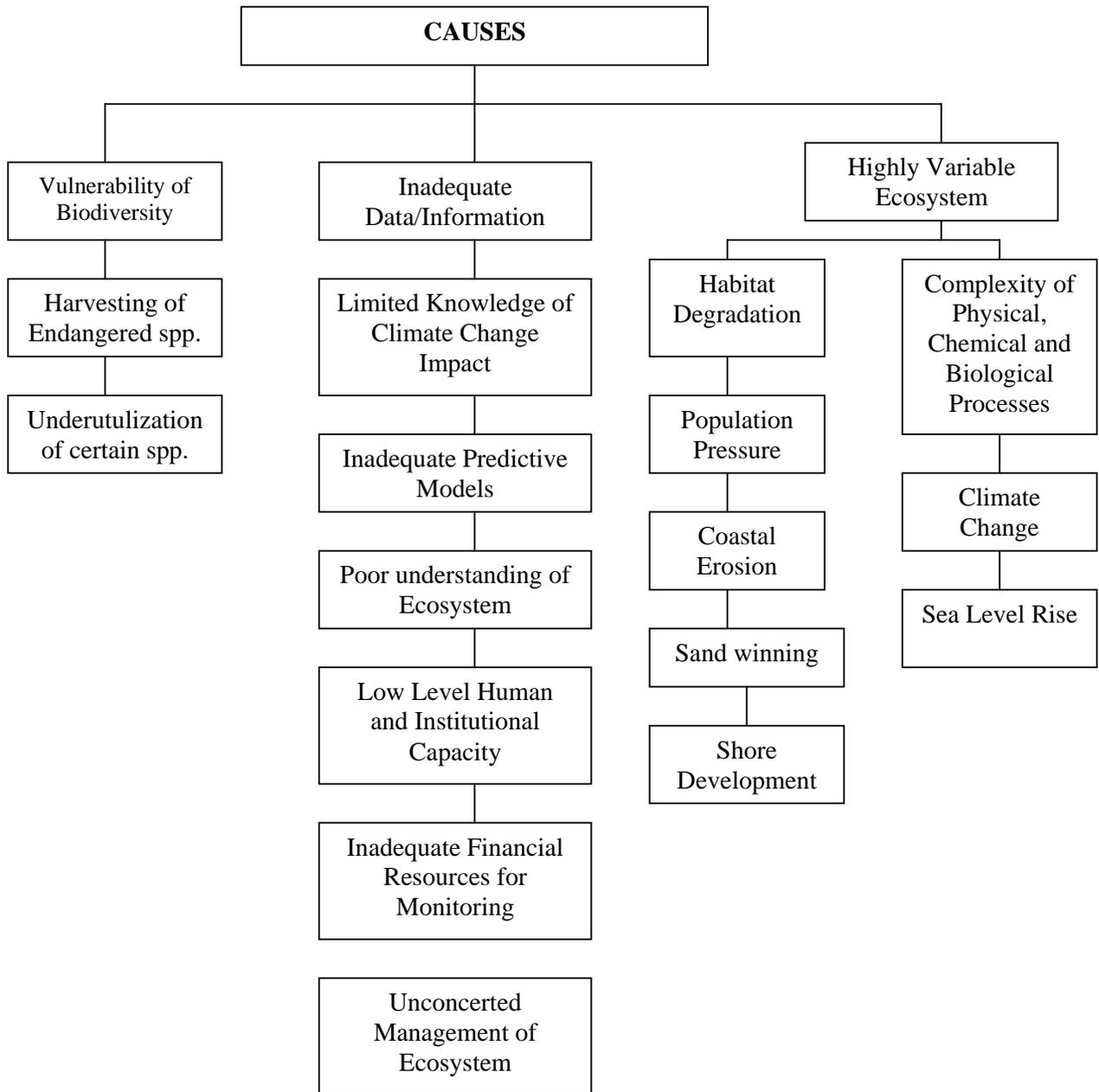
Methodology

Abbreviations

- Each update includes tracking information with respect to Working Document. For example, (*Page 112-2*). **AMD**, Refers to page 112, bullet point 2 and AMD means and AMMENDMENT to the text.
- The following abbreviations were used with the tracking information - **ADD**: Addition; **AMD**: Text has been amended; **DEL**: Deletion; **NEW**: New information

Causal Chain Analysis

- **Problem**
 - Causes
 - Impacts
 - Risks/Uncertainties
 - Trans-boundary Consequences
 - Socio-Economic Consequences
 - Activities/Solutions
 - Priority
 - Anticipated Outputs



Problem 1: Threat to Vulnerable Species and Vulnerability of Habitats

- **Causes**
 - Population migration to coast – This is a worldwide trend. Logical consequences are a threat to habitats and resources that are attractive to tourists, especially mangroves/wetlands (*Page 112-2*). **AMD**
 - Competition for space and food (birds, humans) – competition among the marine organisms for food and breeding space. They are also in competition for food and space with human populations (*Page 112-6*). **AMD.**
- **Impact**
 - Loss of coastline due to erosion (*Page 112-6*). **AMD.**
- **Risks/uncertainties (*Delete original*)**
 - Lack of policy/legal framework (*Page 112*). **NEW.**
 - Lack of enforcement of existing regulation (*Page 112*). **NEW.**
 - Potential occurrence of tsunamis in the region
- **Activities/Solutions**
 - Appropriate mitigation for combating beach erosion (*Page 112-2*). **AMD.**
 - Designation of marine protected areas (*Page 112*). **ADD.**
 - Compliance monitoring for pollution (*Page 112*). **ADD.**
 - Development of a tsunamis warning system

Problem 2: Unknown Role of Non-Harvested Species in the Ecosystem

- **Trans-boundary consequences**
 - Unused/under-used stock may have trans-boundary distributions (e.g. *Arioma bondi* and *A. melanum* in Nigeria). Knowledge of what is in the system, its biology, and what role it plays, and how it can be impacted by anthropogenic activities would have an effect in all countries (*Page 112-1*). **AMD.**
- **Anticipated outputs**
 - Comprehensive ecosystem model for sustainable integrated management of living resources (*Page 116-2*). **AMD.**
 - Improvement in the exploitation of under-utilized living resources (*Page 116*). **ADD.**
- **Risks/uncertainties**
 - Unable to predict impacts of changes in abundance of non-harvested species upon harvested species (*Page 116*). **ADD.**
 - Unknown economic viability (*Page 116*). **ADD.**
- **Socio-economic consequences**
 - Food security potential (*Page 116*). **ADD.**
 - Jobs (*Page 116*). **ADD.**
 - Revenue (*Page 116*). **ADD.**

Problem 3: Highly Variable System, Uncertainty Regarding Ecosystem Status and Yields

- **Causes**
 - Limited understanding of cause and effect relationships compounded by the problems of predicting environmental variability but also ecosystem impacts (*Page 120-2*). *AMD*.
 - Inadequate data/information: long-term data series are few and incomplete and, ecological processes are poorly understood (*Page 120-4*). *AMD*.
- **Impacts**
 - Variations in zooplankton and fish egg/larval survival and higher level impacts (A, B, and C) through changes in primary production and stratification/turbulence caused by changes in wind frequency, direction and strength regulated by remote climatic and hydrographical factors (*Page 120-4*). *AMD*.

(*A= large scale sustained events; B= decadal changes; C= high frequency/short-lived/episodic events*)

- **Socio-economic consequences**
 - Livelihood vulnerability (job losses and gains) (*Page 121-1*). *AMD*
 - Threatened food security (*Page 121-4*). *AMD*.
 - Unconcerted management of ecosystem resulting in regional conflict (*Page 121-7*). *AMD*.
 - Changes in revenue, private income and exports leading to social unrest/instability (*Page 121-8*). *AMD*.
- **Activity/Solutions**
 - To obtain archived data/information from historical expedition by Europeans (*Page 122*). *ADD*.
- **Anticipated outputs**
 - An established regional environmental analysis/reporting system/network and activity centre (i.e. Productivity Centre; Regional HAB reporting) (*Page 122-5*). *AMD*.
 - Useful predictions and models on carrying capacity of the GCLME (*Page 123-6*). *AMD*.

Cross-Cutting Problem 4: Low Level Capacity, Expertise and Ability to Monitor Environmental Variability

- **Causes**
 - Limited availability of infrastructure, equipment and supplies (*Page 126-7*). *AMD*
- **Impacts**
 - Data collection/information gathering methodologies are not uniform across region (*Page 126-5*). *AMD*
- **Socio-economic consequences**
 - Under-utilization of non-harvested resource (*Page 126-1*). *AMD*

- Over-exploitation of harvested resources (*Page 126-1*). *AMD*
- Limited opportunities for potential resource access/management (*Page 126-2*). *AMD*
- **Activities/Solutions**
 - Create economic opportunities and career prospect to ensure long term benefits (*Page 127-2*). *AMD*

Cross-Cutting Problem 5: Inadequate/Inappropriate Data and Information Management

- **Problem**
 - Inadequate/inappropriate data on living resource and ecosystem resulting in over-exploitation of harvested species and under-utilization of non-harvested resource. Information management is hampered by poor data generation and limited infrastructure in GCLME countries (*pg. 144*). *AMD*
- **Causes**
 - Poor quality of data generated (*pg. 144-1*). *AMD*
- **Risks/uncertainty**
 - Inability to retain personnel for continuity of projects (*pg. 144*). *ADD*
 - Incompatibility of data storage and retrieval systems between generations (*pg. 144*). *ADD*
- **Activities/Solutions**
 - Set up a network between centres of excellence for training in relevant new computer packages (e.g. ECOPATH and FISAT); and facilitate exchange and support. (*pg 144*). *AMD*.
 - Collaborate with appropriate international Agencies (i.e. IOC/UNESCO, GLOBEC, COADS-NOAA), in the use of IT to develop regional potential in the management of data and information. (*pg 144*). *AMD*.

Cross-Cutting Problem 6: Governance and Institutional Framework

- **Problem**
 - Inadequate/inappropriate Governance regime to address ecosystem integrity and sustainable exploitation of living resources. (*pg.146*). *AMD*.
- **Causes**
 - Decision making process regarding the ecosystem and its resources is ineffective because of top-bottom approach (*pg.146*). *AMD*.
 - Poor co-ordination of environmental activities at the national and regional levels (*pg.146*). *ADD*.
- **Trans-boundary consequences**
 - Governance issues at the regional level are addressed by protocols/conventions, which guides member states in the formulation of individual legal instruments. (*pg.146*). *ADD*.
- **Activities/Solutions**
 - Development of regional environmental framework for adoption by member states to guide them in the formulation of enforceable national regulations. (*pg.146-7*). *ADD*.

GROUP 3

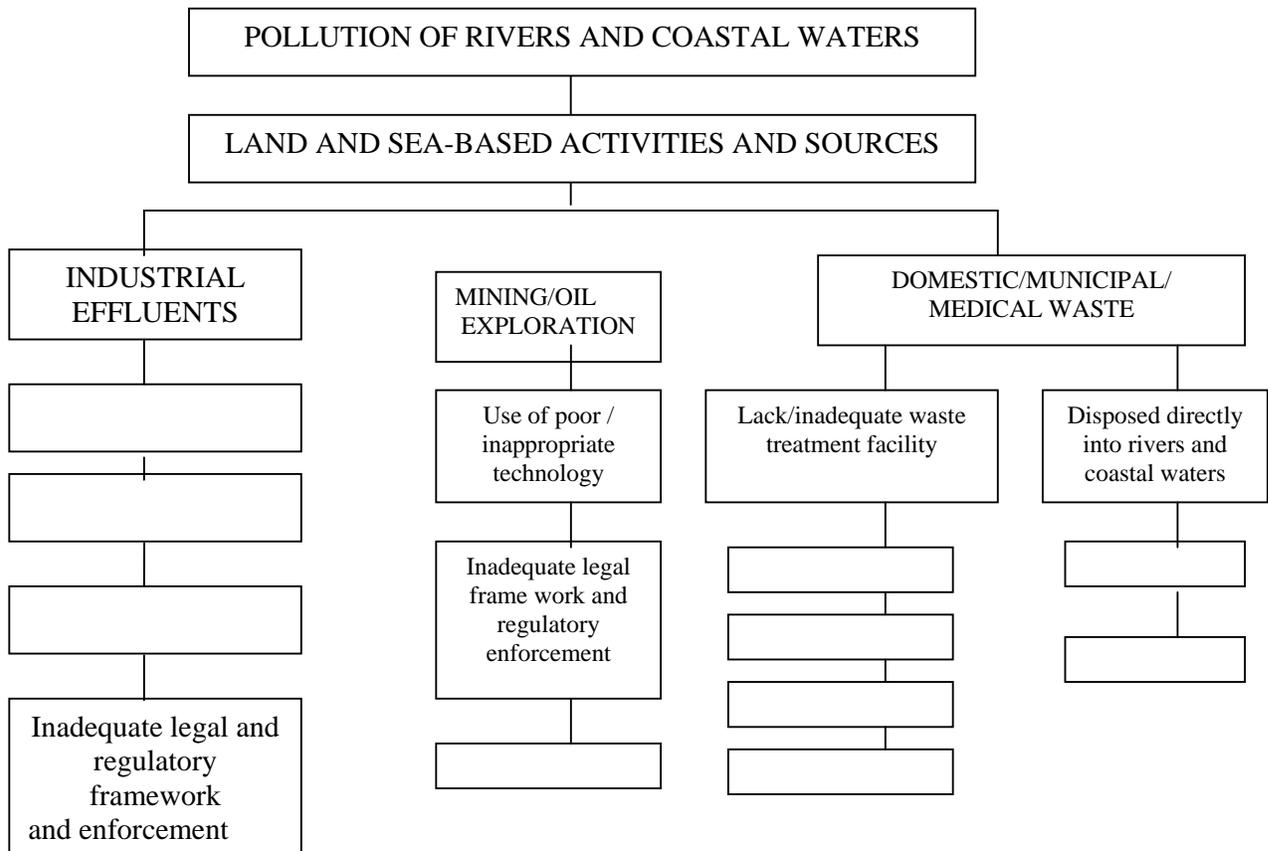
THEME: DETERIORATION IN WATER QUALITY (CHRONIC AND CATASTROPHIC), POLLUTION FROM SEA AND LAND BASED ACTIVITIES, EUTROPHICATION AND HARMFUL ALGAL BLOOMS

Members

- | | |
|--|-------------------|
| 1. Dr Sam C. Anurigwo (<i>Chairman</i>) | Nigeria |
| 2. Lt Cdr Kamal-Deen Ali (<i>Rapporteur</i>) | Ghana |
| 3. Dr Adesanya L.F (<i>Interpreter</i>) | Nigeria |
| 4. Theophile Richard | Guinea |
| 5. Anthony Yaw Karikari | Ghana |
| 6. Prof Aka Kouame | Cote D’ivoire |
| 7. Paulino Esono | Equatorial Guinea |
| 8. Prof Okond’ Ahoka Jose | DR Congo |
| 9. Dr Jean Folack | Cameroon |
| 10. Marcos Wabi | Benin |

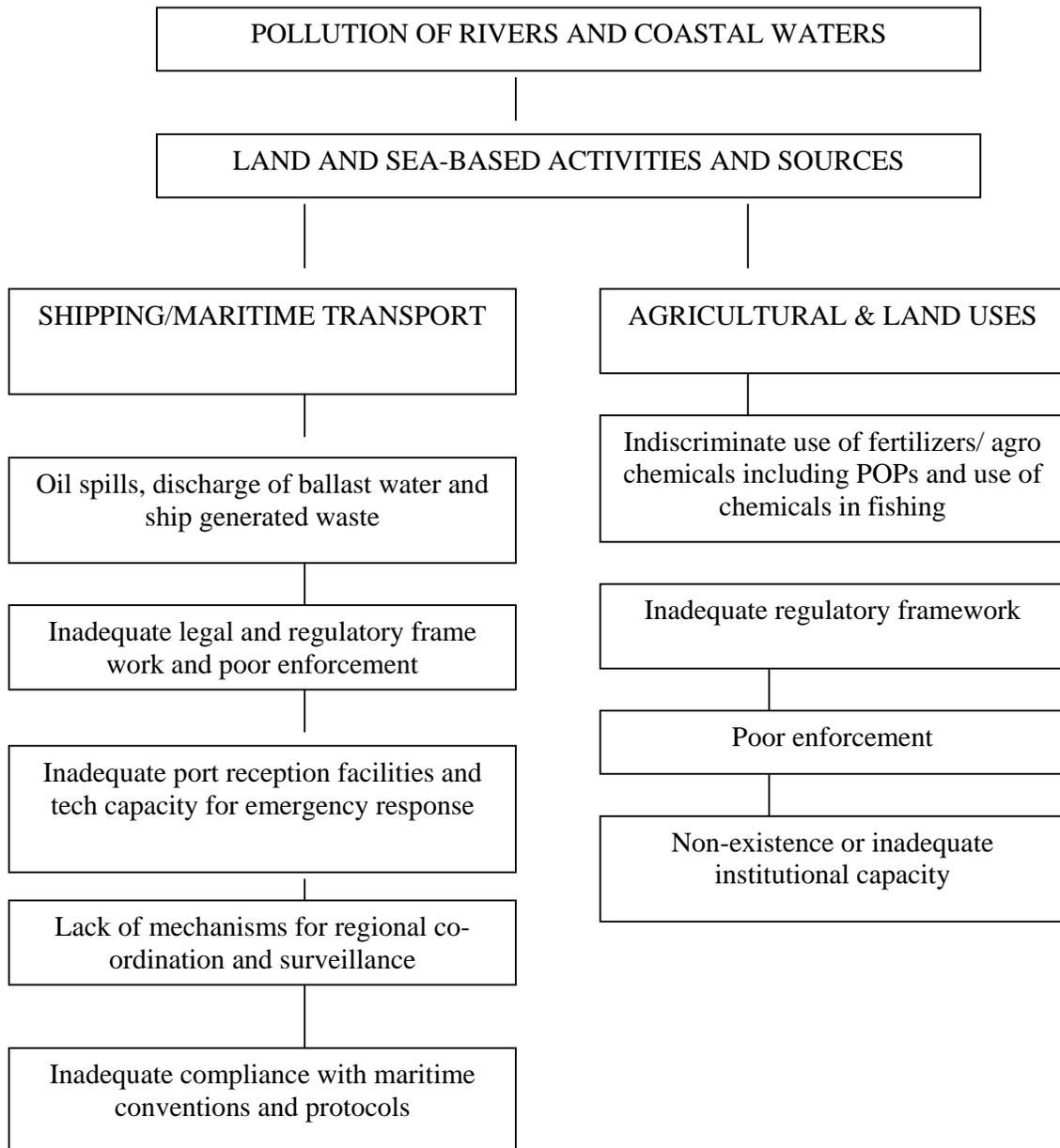
Amendments to Figure 5.3-2 pg 77

Below are recommended amendments to the 3 sources of pollution and the Causal Chain Analysis contained in figure 5.3-2 (page 77).
Empty boxes mean no changes are made



Additions to Figure 5.3-2 pg 77

It is recommended that shipping/Maritime Transport and Agricultural/Land Uses should be added to the figure 5.3-2, page 77



To be added as text (on page 76 before last paragraph) showing shipping/maritime transport as a source of pollution of the GCLME and laying foundation for the Causal Chain Analysis above.

Pollution from shipping and maritime transport constitutes another source of degradation of the marine environment and deterioration of the water quality of the GCLME and represents a trans-boundary problem in the region. Ship source pollution is mainly from the discharge of ballast water into the sea and oil spillage from ships.

Undoubtedly, globalization has continued to put demand on maritime transport. More than 90 % of world trade is seaborne. In 2001, seaborne trade came to a record high of 5.88 billion metric tons in its 15th consecutive growth (*UNCTAD, Review of Maritime Transport 2001*). Most countries of the GCLME are primary exporters of raw materials that feed the major industrial economies. At the same time these countries rely heavily on imports for their socio-economic development and serve as transit ports for neighbouring landlocked states. The increases in maritime transport have come with corresponding pollution and destruction of the marine environment and ecosystem of the GCLME region.

There are standards and conventions regulating ship source pollution within the umbrella of the IMO. Indeed, the emphasis for coastal states is the institution of effective coastal and port state regulation and enforcement and the establishment of facilities such as port reception facilities. Most GCLME countries however, lack the necessary regulatory framework and port reception facilities. In some cases the manpower capacity to ensure effective regulation of ship source pollution is weak and completely lacking in some places.

Amendments/Additions to Log Matrix Table B3 Page 128 And 130 “Management of Eutrophication and Consequences of Harmful Algal Blooms”

Causes

- Inadequate waste treatment facilities
- Inadequate regulatory frame work and poor enforcement

Socio-Economic Consequences

- Poverty aggravation
- Unemployment

Trans-boundary Consequences

- Reduction in gross fish stock in the region
- Spread of exotic species across the coastal reaches of the GCLME region
- Reduction in tourism potential of the region

Activities/Solutions

- Expand and strengthen the regional Nutrient Activity Working Group (NAWG)
- Regular monitoring to identify early warning signals
 - e.g. - Fish death from chocking with diatoms
 - Clogging of fishing net by blue green algae

Priority (Scores)

- Priority scores should be aligned with bulleted points
- Nutrient Activity Working Group should be scored as priority 1

Out puts

- Improved management of nutrients

Amendments/Additions To Log Matrix Table C1-3 Page 132 And Explanatory Notes on Page 135 “Improvement Of Water Quality, Reduction Of Land And Sea Based Sources Of Pollution, Prevention And Management Of Oil Spill, Reduction Of Marine Litter”**C1****Problems**

- Indiscriminate siting of factories/industries

Causes

- Absence of, or inefficient regulatory institution
- Coastal agricultural activities

Impact

- Public health deterioration

Socio-Economic Consequences

- Poverty aggravation

Activities/Solutions

- Design/development of regional protocols and conventions on pollution
- Develop model legislation for water pollution to help individual states implementation of conventions and protocols

Anticipated Out Put

- Model regulations for GCLME countries

C2**Causes**

- Equipment failure
- Deployment of sub-standard ships/tankers in the region
- Oil pipeline vandalization and sabotage
- Non-compliances with maritime conventions and protocols

Socio-Economic Consequences

- Loss of revenue/income
- Unemployment

C3**Problems**

- Used plastics

- Waste dumped by ships and fishing trawlers
- Illegal dumping of toxic waste and containers

Amendments/Additions To B2 Page 124 “Capacity Strengthening And Training”

Risk/Uncertainty

- Budget size for project implementation

Activities/Solutions

- Generate regional activity tools for effective capacity development

Amendments/Additions To Table C6 Page 144 “Inadequate/Inappropriate Data And Information Management”

Problems

- Non-availability of uniform regional format for data generation

Socio-Economic Consequences

- High project failure rate

Trans -boundary Consequences

- Availability of data with poor regional comparability

Conclusion

The GCLME is encumbered by pollution loads from various land and sea-based activities which result in eutrophication, cause emergence of Harmful Algal Blooms (HABs) and lead to general deterioration in the water quality and carrying capacity of the rivers and coastal waters of the region, among other things.

The present exercise, (TDA), is therefore a critical process in the multi-sectoral assessment of the trans-boundary issues and in the identification of the specific activities needed to address the pollution scenarios in the region.

GROUP 4

THEME: HABITAT DESTRUCTION AND ALTERATION INCLUDING INTER-ALIA MODIFICATION OF SEABED AND COASTAL ZONE DEGRADATION OF COASTSCAPES AND COASTLINE EROSION

Members

1. Dr. Emmanuel Adogboyega Ajao (*Chairman*) Nigeria
2. Dr. Kouadio Affian (*Rapporteur*) Côte d'Ivoire
3. Dr. Evelyne Solange Ndoulou Loubamono Gabon
4. Chikwendu Chike Nigeria
5. Prof. Sikirou Adam Benin
6. Fernando Trindade Sao Tome & Principe

Methodology

- Update the text
- Update the tables

Table C4: Retardation /Reversal of Habitat Destruction / Alteration. P.138)

Causes

- Replace first bullet by «Physical alteration arising from demersal trawling
- Add: “Variable river sediment input”
- And “Changing land use”

Table C4

Impact

Add the following bullets:

- Biodiversity degradation
- Shore line change Table C4 (suite I)

Risk

- Land use conflict
- Climate change
- Flooding of coastal area
- Conflict coming from the use of resource

Uncertainties

- Complete lack of data
- Framework of impact monitoring
- Cumulative local vessels impacts
- Impacts from natural spatial and temporal variation

Socio-economic consequences

- Add «Loss of cultural area / heritage / amenities »

Activities / Solutions

The full activities must be the following:

- Comprehensive status report

- Assess the cause of habitat destruction (third bullet)
- Determination and prioritization of the vulnerable zones
- Monitor coastal processes and dynamics
- Replicate preferred solution
- Adapt an agreed regional structure to address problem
- Applied control measure to limit the failure of coastal defence structure
- National project demonstration
- Determination of sediment budget

Causal Chain Analysis: Habitat Degradation (P. 41)

The apexes are the following:

- Pollution
- Coastal degradation
- Destructive fishing methods
- Industrial activities
- Climate change

Pollution

- Sediment / siltation instead of siltation
- Coastal agriculture / aquaculture in stead of coastal agriculture

Coastal degradation

- Sand / salt mining
- Dredging activities
- Inadequate planning
- Deforestation / devegetation

Industrial activities

- Oil exploration / exploitation instead of Oil exploration

Table C5 (Conservation of Biodiversity) (p.140)

Risk / Uncertainties

- Delete: No baseline data
- Add: loss of species

Trans-boundary consequences

- Add Fisher / Fishes

Table C6: Inadequate / inappropriate Data and Information Management (P. 144)

Causes (delete all the bullets and replace by the following)

- Poor data collection, processing, storage and networking
- Poor information for data support
- Poor data and information exchanging / networking
- Lack of harmonization in data collection and dissemination
- Lack of data Bank

Impact

- Lack of systematic and time series data for adequate information

- Poor data and information exchange
- Lack of regional integration and harmonization data
- Poor decision making based on inadequate data

Risks / Maintenance

- Poor support for decision making and political and economical issues
- Poor natural and regional planning
- Poor expectation based on poor data input

Socio-economic consequences

- Poor planning based on poor data
- Inappropriate information to all stakeholders
- Unfulfilled economic and development goals

Activities / solutions

- Establish a regional cooperation for data harmonization
- Set up centres of excellence for training exchange / networking and support
- Liaise and collaborate with appropriate agencies and partners in data and information management
- Set up and develop regional data and information management

Table C7: Governance and Institutional framework (P. 146)

Causes

- 2nd bullet use linkage instead of interlinkage
- Third bullet use policy in stead of arrangement

Impact

- 2nd bullet use non harmonization instead of non-coordination

Socio-economic consequences

- 2nd bullet use inadequately instead of poorly

Trans-boundary consequences

- Inadequate regional cooperation
- Inadequate harmonization of legal policy, economy framework
- Inadequate awareness

Activities / solutions

- 2nd bullet- replace the paragraph by Centre for Policy and Strategic Studies.
- Last bullet replace the paragraph by Regional Arbitrage Centre

Table A3: Responsible Development of Mariculture (p.107)

Causes

- Lack of tradition for aquaculture and marine culture
- Inadequate fisheries for development
- Information / awareness
- Lack of regional policies and cooperation

Trans-boundary consequences

- Delete the third bullet
- Set the fourth bullet as the following:
- Introduction of potential disease pathogen

Activities / solutions

Break into bullet as the followings

- Undertake socio-economic and feasibility assessment
- Harmonisation of national policy into a regional framework
- Provide mitigation against potential problems
- Promote responsible development of mariculture in GCLME

Table B2 « Capacity Strengthening and Training » (P. 124)

Problems

Break into 3 bullets:

- Storage in capacity and equipment
- Inadequate training for environmental management prediction
- Disparity in regional capacity

Cause

- Limited regional collaboration in training
- Inadequate budgetary allocation
- Inadequate technical skill for equipment maintenance
- Insufficient provision, accessories spares
- Insufficient attention to training and man power development
- Emigration of technocrats due to poor economic conditions

Socio-economic consequences

The restructuring is as follows:

- Suboptimal or over utilization of resources, inadequate information, knowledge, understanding required for resource management
- Unequal opportunity for resource access / Management
- Limited stakeholder participants
- Creation of conflict
- Insufficient basis for decision making at all levels of government
- Low institutional sustainability

Trans-boundary consequences

Restructure all the bullets as follows:

- Uncoordinated resource management, research and monitoring programmes
- Non harmonization of management of overall system
- Disparity in capacity leading to gaps in research and monitoring effort
- Inability to holistically monitor and manage the system

Activities / Solutions

- Assess capacity needs to address national and Trans-boundary issues
- Device strategies for creating job opportunities and improving infrastructure and remuneration

- Creation of regional multi disciplinary tasks teams
- Establish regional collaboration for training, transfer technology and expertise
- Improve networking via the internet and other suitable technologies
- Improve public education and awareness
- Increase stakeholders participation and co-management
- P. 88 2nd paragraph of chapter 5.4 line 8: in Côte d'Ivoire more than 95 % in the bay of Cocody
- P. 90: Paragraph 2 line 7, read Adjoufou and not Adjoufun
- P. 90 Paragraph 5 line 3: read Aneho and not Anero
- Before the last paragraph insert a paragraph related to coastal erosion in Gabon as follows: "In Gabon, Coastal erosion causes serious concerns. It destroys coastal infrastructures mainly at Libreville, Pointe Pongara, Port Gentil etc."
- P.90 paragraph 7, line 2: read:" Although about seven sand nourishment etc., line 3 read:" completed in 2002 have etc.

ANNEX E

WORKING GROUP REPORTS ON LOG FRAME MATRIX ANALYSIS (TDA INDICATORS)

GROUP 1

Members

1. Dr. Raymond G. Johnson (<i>Chairman</i>)	Sierra Leone
2. Harry Barnes-Dabban (<i>Rapporteur</i>)	Ghana
3. Benjamin S. Karmorh, Jr	Liberia
4. Djama Theodore	Cameroon
5. Fortunato Eneme Efua	Equatorial Guinea
6. Lourenco Vaz	Guinea Bissau
7. Kwamena E. Quaison	Ghana
8. Dr. Bradford Brown	USA
9. Leonard Muamba	DRC
10. Theophilus K. Seddoh (<i>Interpreter</i>)	Ghana

Component 1:

Under column Objectively Verifiable Indicators, the following inputs were made:

Out put 1.2

- (Add) New data report compiled

Out put 1.3

- (Add) Established regional TDA Working Groups

Out put 1.4

- (Delete) National endorsement obtained by year 2
- (Add) National Action Plan compiled, prepared and endorsed by year 2

Out put 1.7

- (Add) Arrangements finalized for sustainable financing of ecosystem management of GCLME

Out put 1.8

- (Add) Economic instruments (Policies, Business Plans) developed
- (Add) Other types of incentives to control pollution adopted
- (Add) Less polluting technologies adopted
- Under Sources of Verification, a recommendation was made to (Add) Progress report on less polluting technology

Component 5

Under column Objectively Verifiable Indicators, a recommendation was made to:

Output 5.2

- (Add) Number of new initiatives developed by Governments
- Under column Sources of Verification, a recommendation was made to (Add) Reports linking project accomplishments to national/regional goals

GROUP 2

Members

1. Parcy Abohweyere (<i>Chair</i>)	Nigeria
2. Prof. Dike I. Nwankwo	Nigeria
3. Trinidad M. Besari	Equatorial Guinea
4. George Wiafe	Ghana
5. Adwoa Painsil	Ghana
6. Maria Esperanca	Angola
7. Humphrey Kuma	Ghana
8. Ama Kudom-Agyemang	Ghana
9. Nkwanyuo Victor Mbai	Cameroon
10. Theophilus K. Seddoh (<i>Interpreter</i>)	Ghana

Out 2.1

- Insert: Activity on top of row showing break down of outputs

Objectively Verifiable Indicators.

- Mechanism for on-going stock assessment established. 3, AMD
4, DEL.

Types of Indicators:

S

Activities

- 2.1.2 Develop and implement common methodology for joint ecosystem-wide stock assessment. AMD
- 2.1.3 Carry out ecosystem-wide surveys (oceanography, productivity, ecological and introduced species sampling). AMD
- 2.1.4 Device a mechanism for on-going stock assessment. AMD

Tool of Verification AMD

- 4, DEL.

Out put 2.2

- Identification of appropriate methods to estimate sustainable yields of commercially important fish species. AMD

Activities

- 2.2.1 Determine methods to estimate sustainable yields for dominant fisheries through workshop. AMD
- 2.2.2 Estimate sustainable yields for dominant fisheries through ecosystem-wide stock assessment surveys. AMD
- 2.2.3. Implement fisheries management measures on commercially important fisheries in the region from estimates of sustainable yields of annual stock status report through the IGCC and GCC. AMD

Objectively Verifiable Indicators

- Workshops held; methods for estimating sustainable yields determined. AMD

Types of Indicators

- S

Assumptions and Risk

- Risk is minimal as similar efforts were successfully undertaken based on data from two region-wide trawl surveys during the pilot phase GoG-LME project. 2, AMD

Out put 2.3

Objectively Verifiable Indicators

- Marine productivity centre equipped and functional by year 1. ADD
- Productivity analyses completed and published.1 AMD
- ECOPATH/ECOSIM Type analysis completed. 2 AMD
- Gaps defined by year 2. 2, AMD
- Analysis of primary productivity data completed by year 3 and published. 3, AMD

Types of Indicators:

- S

Tools of Verification

- TORs. DEL

Outcomes

- Ecosystem-wide primary and secondary productivity assessment... AMD

Output 2.4

Activities

- 2.4.2 Establish an Interim Guinea Current Commission followed by a GCC.... AMD

Types of Indicators

- P

Output 2.5

Types of Indicators:

- P

Tools of Verification

- Legal review and modifications completed and adopted... AMD

Outcome

- Legal framework and mechanisms to manage sustainable fisheries adopted and implemented

Output 2.6

- Output 2.6 Development of???

- What informed the 3 fisheries (response: 3 fisheries should be left as it is)

Activities

- 2.6.2 Initiate adaptive approach to management of these fisheries through IGCC / GCC. AMD

Types of Indicators:

- E

Output 2.7

Activities

- 2.7.1 Review existing status, trends..... AMD
- 2.7.4 Enact and enforce law governing coastal aquaculture and mariculture at national level. AMD

Types of Indicators

- S and P

Outcomes

- Aquaculture and mariculture developed within AMD

Component 5: Regional Coordination and Institutional Sustainability

Objectively Verifiable Indicators

- Regional coordination office opened and staffed at project on set. 1, AMD
- Regional coordination meetings throughout project duration. 1, AMD
- National coordination structures established at project on set. 2, AMD

Types of Indicators:

- P

Output 5.2

- Establishment of effective Steering Committee. AMD

Activities

- 5.2.2 Hold once or twice yearly committee meetings for project governance, M & E

Objectively Verifiable Indicators

- Stakeholders participate in the SC meeting. AMD

Type of Indicators:

- P

Tools of Verification:

- Project progress report. ADD

Assumption and Risk

- Assumes that SC will be responsive to national concerns. 1, AMD

- Assumes that the RCU will effectively communicate the issues and the suggestions and recommendations by the SC. 1, AMD
- Minimal risk. 2 AMD

Outcomes

- Project SC established and functioning. AMD

Output 5.3

- Establishment of Intersectoral / Interministerial / Ministerial Coordination both at national and regional levels (Coordinating Structure / Mechanism) AMD

Activities

- 5.3.1 Establish appropriate national structure / mechanism to ensure.. AMD

Objectively Verifiable Indicators

- Coordination structure established 1, AMD
- Effective communication procedure established 2, AMD

Type of Indicators:

- P

Tools of Verification

- SC / Ministerial meeting reports, 1,.....AMD
- SC / Ministerial meeting report, 2,AMD

Assumptions and Risks

- Minimal risk. 2, AMD

Outcome

- National coordinating structure / mechanisms functioning in GCLME countries. 1, AMD
- 2, DEL (Output 5.3 is national)

Output 5.4

Activities

- 5.4.1 Develop work plan for public participation and awareness (PPA) AMD
- 5.4.6 Develop and organize trainingAMD

Objectively Verifiable Indicators

- Private sector actively participating in project workshops, 6...AMD

Types of Indicators:

- P

Assumptions and Risks

- Assumes routine and effective involvement of stakeholders...1, AMD

Outcomes

- Full engagement of different sectors in each country in an integrated... 1, AMD

Output 5.5

Activities

- 5.5.1 Building on existing institutional arrangement where feasible. AMD
- 5.5.1 Establish AMD
- 5.5.4 Develop a centralized system for access and distribution of data...AMD

Types of Indicators:

- P

Output 5.6

Types of Indicators:

- P

Assumptions and Risks

- Minimal risk

Output 5.7

Activities

- 5.7.2 Formally establish the GCC through regional agreement. AMD

Type of Indicators:

- P

Outcomes

- Improved ability to coordinate sustainable management of the GCLME resources. AMD

Output 5.8

Activities

- 5.8.2 Carry out appropriate training programmes AMD

Types of Indicators:

- P

Tools of Verification

- Training Manuals ADD

GROUP 3
Members

- | | |
|--|-------------------|
| 1. Dr Sam C. Anurigwo (<i>Chairman</i>) | Nigeria |
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Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
Output 4.1: Facilitation of development of regionally-integrated and consistent National Programmes of Action for Land-Based Activities, including updating inventories of pollution and habitat hot spots	Contracts in countries to develop NPAs, Regionally-consistent and integrated NPAs developed (P) by end of year 1 Training needs assessed and curricula developed; (P) by end of year 1 Training workshops organized (P) by end of year 2. Partnerships developed on land-based activities (P) by end of year 2 Public participation plan developed and implemented, stakeholders fully involved (P) by end of year 2 GPA Clearinghouse Mechanism Node established (P) by end of year 2	Existence of NPAs, SC meeting reports, APR, Project progress reports Workshop curricula, Workshop reports, Project progress reports Signed MOU/Agreements letters on partnership, Project progress reports Stakeholder Participatory Workshop Report Existence of Public Participation Plan, Project progress reports, Project website Existence of GPA Clearinghouse Mechanism, Clearinghouse materials, newsletter, website	Assumes countries will agree to formulate NPA based on standardized methodologies. Assumes that the success of the GOG LME will encourage present participating countries. Risk is minimal as countries are signatories to the GPA/LBA, which prescribes common approaches to formulation of NPA.

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
4.1.1 Assist countries in developing realistic and regionally-integrated National Programmes of Action for land-based sources of pollution and activities 4.1.2 Determine and address training needs in the region for LB sources of pollution and activities 4.1.3 Develop Regional/ Governmental/ Private Sector partnerships on LB activities and sources of pollution 4.1.4 Identify, strengthen, and involve Stakeholders in LBS issues in the Region, including their involvement in Monitoring and Evaluation, as well as development of performance indicators 4.1.5 Develop and implement a West and Central African regional node of the GPA Clearinghouse Mechanism within the GCLME Environmental Information Management System (Component 5)			
Outcomes: Policy frameworks and management measures in place for national level implementation of the GPA-LBA in 16 GCLME countries. Pollution from land-based sources into the GCLME reduced. Stakeholder involvement in reducing land-based sources of pollution and free exchange of related information in the region. Trained personnel available in the 16 GCLME countries for them implementation of the GPA-LBA			
Output 4.2: Development and implementation of a Regional Programme of Action for Land-Based Activities	Regional Programme of Action developed by end of Year 3 (P) Support garnered for Regional Programme of Action(P) Regional Programme of Action broadly disseminated (P)	Existence of Regional Programme of Action, Project progress reports Letters of support and partnership agreements between governments and private sector, Project progress reports Project website, Project progress reports	Assumes willingness of private sector and civil society to partner with governments and regional organizations to promote the Regional Programme of Action. Risk minimal because the private sector and civil society have already participated in the beginning stages of this activity to some degree.

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
<p>4.2.1 Based on National Programmes of Action, develop a Regional Programme of Action for Land-Based Activities facilitating partnerships between national governments and regional organizations, the private sector and civil society</p> <p>4.2.2 Work with governments and other stakeholders to obtain broad support for Regional Programme of Action and NPAs</p> <p>4.2.3 Promote the Regional Programme of Action and broadly disseminate the RPA through public awareness campaign and project website</p>			
<p>Outcomes: Policy frameworks and management measures in place for regional level implementation of the GPA-LBA in 16 GCLME countries. Pollution from land-based sources into the GCLME reduced and water quality improved. (Futuristic)</p>			
<p>Output 4.3: Accession to Abidjan Convention and Development of a protocol on LBA for the Abidjan Convention</p>	<p>Stakeholders and legal and technical expert meetings organized</p> <p>Accession of Abidjan Convention assisted</p> <p>Legal/regulatory gaps reviewed and Protocol drafted, distributed and ratified</p>	<p>Meeting reports, Project progress reports</p> <p>Legal/regulatory report; Ratification of Abidjan Convention by all GCLME countries,</p> <p>Project progress reports, Convention Secretariat reports</p> <p>Protocol to the Abidjan Convention on LBA</p> <p>Project progress reports, Convention Secretariat reports</p>	<p>Assumes countries that have not acceded to the Abidjan Convention will do so and that all GCLME Countries will sign and ratify the Protocol.</p> <p>Risk moderate because of concerted demands by the countries for the LBA Protocol. Complementary actions will be taken by the RCU to win accessions to the Abidjan Convention by countries who have not already done so.</p>
<p>4.3.1 Negotiate with Countries yet to accede to the Abidjan Convention to do so</p> <p>4.3.2 Identify, strengthen and involve key stakeholders in preparation and development of protocol through sub-regional and regional stakeholder workshops as well as legal and technical expert meetings</p> <p>4.3.3 Review gaps in National regulatory/ legislative framework including the review of the status of the appropriate regional/ international convention by GCLME participating countries, and assist in developing plans for those that have not yet ratified the Abidjan Convention</p> <p>4.3.4 Develop, negotiate and ratify the Protocol to the Abidjan Convention with Annexes on Land-Based Activities and sources of Pollution</p>			
<p>Outcomes: Abidjan Convention and Protocol on LBA binding on all GCLME Countries</p>			

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
Output 4.4: Completion of ecosystem-wide assessment of marine pollution prevention measures, contingency planning, and oil spill response capabilities	<p>Marine waste management survey completed (P)</p> <p>Survey on port reception facility requirements completed (P)</p> <p>Review of maritime infrastructure completed (P)</p> <p>Assessment of oil spill response completed (P)</p> <p>Advisory services provided by technical working group and countries requesting assistance (P)</p> <p>Global/regional/national seminars and workshops organized, National systems for oil spill response developed (P)</p> <p>Assessment of equipment completed and training materials developed (P)</p> <p>Suite of 7 ecosystem-wide indicators (dissolved oxygen, water clarity, coastal wetlands loss, eutrophic conditions, sediment contamination, benthic condition, fish tissue contamination) applied (P)</p> <p>Public awareness raised (P)</p>	<p>Working group reports, Project progress reports</p> <p>Working group reports, Project progress reports. Marine Waste Survey Report</p> <p>Working group reports, Project progress reports. Port Reception facility Survey Report</p> <p>Working group reports, Project progress reports. Maritime infrastructure Review Report</p> <p>Technical working group reports on requests from countries for assistance, Project progress reports</p> <p>Seminar and workshop reports, Project progress reports, Report on national system for oil spill response</p> <p>Training materials available, Project progress reports</p> <p>Project website, Public awareness materials, Project progress reports</p>	<p>Assumes willingness on part of port owners/authorities and national/regional maritime authorities to enact modifications, harmonize guidelines and cooperate to prevent/mitigate oil spills.</p> <p>Risk minimal because most of the countries have signed the IMO Oil Pollution Response Convention, 1991. Furthermore, there is an existing Protocol to the Abidjan Convention on Emergency Response</p>

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
4.4.1 Conduct a survey of the existing integrated approach/ system for the management of all types of marine wastes in port cities and towns 4.4.2 Conduct a survey/ study on port reception facility requirements and costs in some of the countries 4.4.3 Review the region's maritime infrastructure with particular regard to survey and inspection requirements as set out in IMO Conventions 4.4.4 Assess marine pollution, preparedness and response system for oil spill, and spill-combating equipment needs in each of the countries 4.4.5 Provide advisory services to address specific maritime safety and marine environmental problems on the request of the countries of the region and for the organization and implementation of activities related to <i>Prevention of Pollution from Shipping Activities- Implementation of MARPOL 73/78; Port State Control (PSC); Marine Pollution Preparedness and Response</i> ; assist with the development/ completion of National Contingency Plans 4.4.6 Implement training through global/ regional/ national seminars, workshops and individual fellowships; provide assistance in developing the national systems for oil spill response (institutional capacity building) 4.4.7 Assess equipment, facilitate the provision of pollution response equipment, produce and disseminate training materials. 4.4.8 Create public awareness regionally on the project activities			
Outcomes: Ecosystem-wide marine pollution prevention measures, contingency planning and spill response capabilities improved.			
Output 4.5: Development of regional systems for cooperation in cases of major marine pollution incidents (customs, navy, immigration, communications, response, liability, and compensation)	Emergency response center evaluation completed Contingency plan and cooperation agreements completed Systems for cooperation in cases of marine pollution incidents developed	TORs, Emergency Response Evaluation Report, Project progress reports Existence of cooperation agreements, Project progress reports, IGCC/GCC meeting reports Working group reports, Project progress reports	Assumes countries will agree to cooperate on joint emergency preparedness and response. Risk minimal, as countries are signatories to various IMO Conventions in this domain as well as to the Protocol on the Abidjan Convention.
4.5.1 Evaluate need for and duties of regional emergency response centers 4.5.2 Develop sub-regional/ regional contingency plans and agreement for cooperation 4.5.3 Develop sub-regional/ regional/ inter-regional systems for cooperation in cases of major marine pollution incidents			
Outcomes: Improved regional cooperation in cases of major marine pollution incidents resulting in decreased risk to GCLME from maritime activities.			

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
Output 4.6: Facilitation of process to reform legislation in GCLME countries to adopt and implement international conventions (e.g., MARPOL, OPRC ,CLC.) as related to marine and coastal pollution, especially oil and gas activities	Meeting organized to discuss IMO Conventions Technical assistance provided to countries to translate conventions into national legislation	Meeting reports, Project progress reports Technical working group reports, Project progress reports, IGCC/GCC meeting reports	Assumes commitment of countries to reform legislation and implement international conventions. Risk is low as countries are signatories to the relevant IMO and other relevant Conventions
4.6.1 Hold high-level meeting of government officials, parliamentarians and the oil and gas companies (stakeholders) with IMO and other partners to discuss conventions on marine and coastal pollution related to oil and gas sector, including their benefits and obligations 4.6.2 Provide technical assistance to countries, on request, in translating the provisions of the Conventions into their national legislation			
Outcomes: National legislative frameworks and implementation of international conventions related to oil and gas activities improved.			
Output 4.7: Strengthening, improvement, and demonstration of methods to reduce nutrient influx to the ecosystem (NAWG, National Demonstration Project)	Nutrient Activity Working Group (NAWG) expanded and strengthened. Nutrient influx survey conducted Demonstration project on controlling nutrient fluxes completed Results broadly disseminated	NAWG Training/Workshop reports Nutrient survey reports Demonstration project reports, Project progress reports, Inter-Ministerial Committee meeting reports, IGCC/GCC meeting reports Project website, Project progress reports	Assumes that the NAWG set up during the GONGLME project will be available for the present project. Assumes that capable and responsible parties will execute the projects. Risk minimal as course of action was determined as a priority by the country (Togo) for execution

Component 4: Reduce land and Sea-based pollution and improve water quality			
Objective: Develop strategic programmes for reducing land and sea-based sources of transboundary pollution and enhance regional ability to address wastes, oil spills, and other major marine pollution incidents.			
Output / Activity / Outcome	Objectively Verifiable Indicators	Tools of Verification	Assumptions and Risks
4.7.1 Expand and strengthen the Nutrient Activity Working Group to monitor nutrient input 4.7.2 Survey nutrient loading and point source fluxes into the ecosystem 4.7.3 Based on an identified priority nutrient input, conduct demonstration project on controlling nutrient fluxes to the ecosystem 4.7.4 Monitor, evaluate and broadly disseminate the results of the Demonstration Project throughout the region for future replication			
Outcomes: Nutrient influx to GCLME reduced and water quality improved. Nutrient reduction demonstration replicated in other GCLME countries in the future.			
Output 4.8: Development of investment opportunities for the SAP to reduce ecosystem threats identified in the updated TDA (National Demonstration Project)	Workshops organized and investment opportunities developed (p) Investments portfolios developed by Year 4 (p)	Workshop reports, Project progress reports, Inter-Ministerial Committee reports, IGCC/GCC meeting reports Investment portfolio available Project progress reports	Assumes country/donor/private sector willingness to make investments in reducing ecosystem threats. Risk minimal as co-financing proposals by the country and private sector give confidence of support to these measures
4.8.1 Based on identified priority industrial waste inputs, conduct demonstration project on waste stock exchange management system for controlling industrial waste inputs into the ecosystem 4.8.2 Based on demonstration projects, and through broad stakeholder involvement, conduct two regional workshops to develop ideas for investment opportunities for the SAP to reduce ecosystem threats 4.8.3 Based on priority investments identified through the public participation process, develop investment portfolios for the SAP process			
Outcomes: Industrial pollution into the GCLME reduced and water quality improved. Capability for Waste stock exchange demonstration replication in other GCLME countries in the future developed.			

Component 5: Regional coordination and institutional sustainability			
Objective: Create a regional network with broad stakeholder participation and a sustainable institutional structure for addressing identified threats in the GCLME, including the development of a regional ecosystem commission and information system.			
Output Activity Outcome	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 5.1: Development of a regional project coordination mechanism	Coordination office opened and staff hired at project onset, regional coordination meetings throughout project duration National project coordination structures established at project onset	SC/Inter-ministerial meeting reports SC/Inter-Ministerial meeting reports, Project progress reports	Assumes that countries will provide suitable national/regional infrastructure and competent personnel to oversee project activities. Risk minimal, as countries have committed to providing suitable infrastructure and competent personnel.
5.1.1 Establish, staff and equip a Regional Coordination Unit (RCU) 5.1.2 Develop national project coordination structures/mechanisms in each country, and linkages with the RCU			
Outcomes: Effective coordination mechanisms for project established and project initiated.			
Output 5.2: Development of effective Steering Committee	5-10 Steering Committee meetings held by end of year 5 Stakeholders involved in SC meetings and SC activities	SC meeting reports SC meeting reports	Assumes that the program will effectively communicate the issues and the suggestions and recommendations to the national sectors and be responsive to national needs. No Risk
5.2.1 Demonstrate value of project to high National Officials to assure continued project support at high levels 5.2.2 Conduct once or twice-yearly Steering Committee meetings for Governance of Project and Project M&E 5.2.3 Include broad stakeholder participation in Steering Committee activities to assure project clarity and transparency.			
Outcomes: Project Steering Committee established, providing strategic and policy guidance, and effectively overseeing project activities.			

Component 5: Regional coordination and institutional sustainability			
Objective: Create a regional network with broad stakeholder participation and a sustainable institutional structure for addressing identified threats in the GCLME, including the development of a regional ecosystem commission and information system.			
Output Activity Outcome	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 5.3: Establishment of Intersectoral/ Interministerial/ Ministerial Coordination	Coordination requirements determined Clear communications established	SC/Ministerial/IGCC/GCC meeting reports, Project progress reports SC/Ministerial/IGCC/GCC meeting reports, Project progress reports	Assumes that the program will effectively communicate the issues and the suggestions and recommendations to the national sectors and be responsive to national needs. No Risk
5.3.1 Determine appropriate national Intersectoral, Interministerial, and/or Ministerial coordination requirements to assure broad participation in project 5.3.2 Establish clear communications procedures nationally and regionally to track, monitor and facilitate project execution			
Outcomes: Intersectoral/ Interministerial Coordinating Mechanisms functioning in GCLME countries. Effective oversight mechanisms for project established.			
Output 5.4: Identification, strengthening and involvement of stakeholders	PPA workplan developed and approved by SC PPA committee established and holds periodic meetings Country-based and regional workshops organized Project Website developed and online by end of Year 1 Newsletters and publications created and distributed to at least 400 stakeholders	PPA committee meeting reports, Stakeholders' participation reports Workshop meeting reports, Project progress reports Existence of website Existence of public awareness materials Workshop reports, Working group reports, SC/IGCC/GCC meeting reports	Assumes routine and effective involvement by stakeholder in planning, management and decision-making. Risk minimal because of written commitments by pertinent stakeholders to actively participate in the project

Component 5: Regional coordination and institutional sustainability			
Objective: Create a regional network with broad stakeholder participation and a sustainable institutional structure for addressing identified threats in the GCLME, including the development of a regional ecosystem commission and information system.			
Output Activity Outcome	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
Output 5.4 (contd): Identification, strengthening and involvement of stakeholders	Private sector actively participating in project in workshops and working groups and as co-sponsor of activities Independent reviews conducted and results reported Training workshops held	Project progress reports Reports from training courses	
<p>5.4.1 Develop a public participation and awareness (PPA) workplan for the project</p> <p>5.4.2 Implement the PPA workplan involving national experts, private sector, NGOs and other interested parties</p> <p>5.4.3 Establish regional information networks and information exchange mechanisms to disseminate information in West and Central Africa through newsletters, a web page, and publications on the progress of the project in order to enhance the replication of successful experiences (within the framework of the Abidjan Convention)</p> <p>5.4.4 Integrate private sector involved in GCLME development (industry, shipping, fisheries, tourism) into activities of this project</p> <p>5.4.5 Promote international support and networking for the action program including a mechanism for periodic independent reviews and reporting of results</p> <p>5.4.6 Develop and conduct training workshops for stakeholders</p>			
<p>Outcomes: Full engagement and coordination of different sectors in each country in taking integrated approaches to governance of the GCLME and sustainable use of its marine and coastal resources. Broad array of stakeholders actively involved in project activities.</p>			
Output 5.5 Development of Ecosystem Information System (EIS) for GCLME, including cooperation with other available regional EIS (Regional Demonstration Project)	EIMS established and functional by Year 3 Data sharing mechanisms developed and in place Standards and protocols created Data distribution system developed, Regional demonstration project completed by Year 5 Project data needs supported	Existence of EIMS, Demonstration project progress report, SC/IGCC/GCC meeting report Project progress report Working group reports, Project progress reports Demonstration project completion reports, Project progress reports Project progress reports	Assumes that capacities to execute this activity are in place. Risk minimal because pilot phase GOG-LME project has provided some of the capacity in the 6 countries. This demonstration project also includes capacity building in this area.

Component 5: Regional coordination and institutional sustainability			
Objective: Create a regional network with broad stakeholder participation and a sustainable institutional structure for addressing identified threats in the GCLME, including the development of a regional ecosystem commission and information system.			
Output Activity Outcome	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
5.5.1 Building on existing institutional arrangement where feasible, establish a Data and Information Management System for the GCLME to facilitate the updating of the TDA and data sharing with other regional/global projects 5.5.2 Develop mechanisms for the sharing of data and information for input into the Data and Information Management System for the GCLME 5.5.3 Create standards and protocols for the collection, processing, analysis and compilation of data and GIS information 5.5.4 Develop a centralized system for access and distribution of the data to the organizations involved in the GCLME project, as well as other stakeholders 5.5.5 Support all aspects of the GCLME project in their data and information requirements			
Outcomes: GCLME ecosystem information data synthesized and made accessible to all 16 GCLME countries and global LME networks to improve decision-making regarding governance of the GCLME and the sustainable use of its resources.			
Output 5.6: Monitoring and Evaluation (M&E)	Reviews completed Evaluations completed Indicators and monitoring system established	Project progress reports, UNDP/UNEP/UNIDO reports Project progress reports, UNDP/UNEP/UNIDO reports	None.
5.6.1 Perform annual TPR, APR, PIR 5.6.2 Perform mid-term and final evaluations 5.6.3 Apply GEF IW indicators and monitoring system to evaluate progress on achieving SAP objectives			
Outcomes: Progress of project regularly evaluated and corrections effected as necessary.			
Output 5.7 Development of regional coordination mechanism (an Interim Guinea Current Commission, followed by establishment of a full-fledged Commission)	Regional consensus achieved GCC established by Year 4 Sustainable financing mechanism developed	Agreement on GCC, Project progress reports, SC/IGCC meeting reports Regional agreement signed, SC/IGCC meeting reports, Project progress reports Project progress reports, SC/IGCC meeting reports	Assumes Political Will to achieve joint governance of shared resources. Risk minimal as a Gulf of Guinea Commission with country representation at Head of State level is in existence involving six countries of the GCLME. Countries of the pilot phase GOG-LME project also adopted the Accra Declaration providing joint governance of shared resources.

Component 5: Regional coordination and institutional sustainability			
Objective: Create a regional network with broad stakeholder participation and a sustainable institutional structure for addressing identified threats in the GCLME, including the development of a regional ecosystem commission and information system.			
Output Activity Outcome	Objectively Verifiable Indicators	Sources of Verification	Assumptions and Risks
5.7.1 Develop regional consensus on the responsibilities, duties, structure, and authorities of a GCC and linkages to the Abidjan Convention and other institutions 5.7.2 Through a regional agreement, formally establish the GCC 5.7.3 Develop sustainable financing mechanisms for the GCC			
Outcomes: Guinea Current LME coordination mechanism established and financing arrangements for future operations secured. Improved ability to coordinate sustainable management of the GCLME resources on an ecosystem level.			
Output 5.8: Capacity building for the IGCC/GCC	Training modules developed Technical assistance, equipment and communications facilities acquired	Project progress reports, IGCC/GCC reports Project progress reports, IGCC/GCC reports	Assumes existence of manpower base, which can be improved. Risk minimal as competence built in the countries during the pilot phase GOG-LME project and from other projects.
5.8.1 Develop training modules to enhance capacities of this body 5.8.2 Facilitate the functioning of the GCC through technical assistance, transfer of equipment and communications facilities			
Outcomes: Improved capacity to coordinate governance of the GCLME and sustainable use of its shared resources.			

GROUP 4

Members

- | | |
|---|---------------------|
| 1. Dr. Emmanuel Adogboyega Ajao (<i>Chairman</i>) | Nigeria |
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| 6. Fernando Trindade | Sao Tome & Principe |
| 7. Prof. Adoté Blivi | Togo |
| 8. Georges NAI | Ghana |

Component 3: Planning for Biodiversity Conservation, Restoration of Degraded Habitats and Development of Strategies for Reducing Coastal Erosion

Output 3.1 (P.17)

Indicators

- All the indicators are maintained and are characterised as Process Indicators

Activities

- 3.1.1 Organize a workshop of all stakeholders to identify the elements for a GCLME ecosystem-wide Biodiversity Action Plan
- 3.1.3 Elaborate an ecosystem-wide Biodiversity Action Plan and carry out a broad regional policy framework including local communities consultation on the proposed Biodiversity Action Plan
- 3.1.5 Promote the endorsement and implementation of the ecosystem-wide Biodiversity Action Plan and review existing and proposed protected areas, and develop ecosystem-wide strategy for protected areas involving local communities

Outcomes

- National and regional policy frameworks in place and priority actions adopted for conservation of globally significant biodiversity in the GCLME.
- Critical coastal Marine Protected Area established in Benin and replicate elsewhere in the region.

Output 3.2 (p.18)

Indicators

- All the indicators are maintained and are characterised as Process Indicators
- Reformulate the last indicator as follow: «Results widely disseminated (to all relevant local communities) »

Activities

- 3.2.1 Identify (in collaboration with local communities) priority mangrove areas in the region (Nigeria for restoration) based on ecosystem approach
- 3.2.3 Monitor, evaluate, and disseminate results of Demonstration Project through NGOs and CBOs if successful and replicate else where in the region

Output 3.3 (p.18)

Indicators

- Add to the two indicators characterised as Process Indicator a third Stress Reduction Indicators as follow: (S) Increased local awareness and documented stakeholder involvement

Activities

- Monitor, evaluate and disseminate results of demonstration Project through NGOs and CBOs if successful and replicate elsewhere in the region

Output 3.4 (p.19)

Indicators

- Add to the two indicators characterised as Process Indicators two other Indicators as follows:
- (P) Country adoption of sector-related legal reforms, policies, institutions, standards, and programs necessary to address introduction of alien species, including stakeholder participation programs.
- (P) Country ratification of the regional and global conventions and protocols pertinent to the output.

Source of verification

Add the following:

- Adoption of periodic assessment report on introduction of invasive species in trans-boundary waters
- Accession or ratification of regional and global convention

Output 3.5 (p.19)

Indicators

- All the indicators are maintained and are characterised as Process Indicators

Activities

- 3.5.5 Wide consultation with all stakeholders, including local communities in the modification and drafting of laws and regulations on biodiversity.

3.6 (p.20)

Indicators

- All the indicators recognized as Process Indicators are maintained except the second which should be: «Recommendations for low-technology, low-cost protection measures and other mitigation strategies completed by Year 2”

Activities

- Add: 3.6.4. Undertake impact studies for the national demonstration project.

Outcome

The second line must be changed as follows:

- Coastal erosion in Cote D’Ivoire measurably decreased and adopted low-cost and low technology replicated elsewhere in the region.

**Component 5: Regional coordination and institutional sustainability (cross cutting)
P.28**

Output 5.2.

The first bullet should be as follow:

- One to two Steering Committees meetings held each year

Output 5.3 (P. 29)

Activities

- 5.3.1 Determine and agree on appropriate national Intersectoral, Interministerial, and/or Ministerial coordination requirements to ensure broad participation in the project

Output 5.4 (p.30)

Activities

- 5.4.2 Implement the PPA workplan involving national experts, private sector, local communities, NGOs, CBOs and other interested parties
- 5.4.3 Establish regional information networks and information exchange mechanisms to disseminate information in West and Central Africa through GCLME newsletter a web
- 5.4.6 Develop and conduct training workshops for stakeholders (local government, local communities, NGOs, CBOs, media etc.)

Output 5.5 (p.31)

Indicators

All the indicators are maintained and are characterised as Process Indicator in addition the following changes were made:

- First line: EIMS established and functional by Year 2
- Line 4: Data distribution system developed, Regional demonstration project completed by Year 4

Activities

- 5.5.3. Create standards and protocols for the collection, processing and archiving of data, and GIS.
- 5.5.5 Provide data and information required supporting all aspects of the GCLME project

Output 5.7 (P.32)

Indicators

Reverse the last indicators as follows:

- Sustainable financing mechanism developed
- GCC established by Year 4

Activities

Reverse the two bullets as follows:

- 5.7.2 Develop sustainable financing mechanisms for the GCC

- 5.7.3 Through a regional agreement, formally establish the GCC

Output 5.8 (P.32)

Indicators

Reverse the last indicators as follows:

- (P) Technical assistance, equipment and communications facilities acquired
- (P) Training modules developed

Activities

Reverse the two bullets as follows:

- 5.8.1 Facilitate the functioning of the GCC through technical assistance, transfer of equipment and communications facilities
- 5.8.2 Develop training modules to enhance capacities of this body