

GUINEA CURRENT LARGE MARINE ECOSYSTEM PROJECT



REPORT OF THE REGIONAL TRAINING WORKSHOP ON INTEGRATED COASTAL AREA MANAGEMENT

KRIBI, CAMEROON, 11 – 15 APRIL 2005



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1. INTRODUCTION

The Regional Training Workshop on Integrated Management of the Coastal Zones of the Guinea Current Large Marine Ecosystem (GCLME) took place at Hotel Le Paradis (Kribi, Cameroon), from 11 to 15 April, 2005.

1.1. Background

This Workshop is an important first step in bringing rational management to coastal areas in the GCLME region, and would introduce participants to the fundamental elements of this concept while insisting on the imperative of having Integrated Coastal Area Management (ICAM) plans in place in each participating country. A preliminary step in this regard is the compilation of National Coastal Profiles, which form the logical basis for the formulation of the plan. Whereas the six pilot phase countries already have their Coastal Profiles, with ICAM draft plans in various stages of evolution, the ten “new” countries would leave from the Workshop with the necessary skills (and hopefully, zeal) to compile their National Coastal Profiles and advance to the formulation of their plans. For the “old” countries, this Workshop is intended to rekindle their appetites for ICAM and fuel the march towards the completion and adoption of their Integrated Coastal Area Management plans. Kribi was chosen as the location for this Workshop, not only because it mirrors both the attractions and the contradictions of the use of coastal areas, but also because Kribi will be the site for the Demonstration Project on ICAM. This Workshop would serve to bring the necessary awareness to both decision makers and citizenry alike.

2. OBJECTIVES AND EXPECTED OUTPUTS

2.1. Objectives

1. To introduce the importance of coastal areas, causes of ecosystem degradation and concepts of coastal processes including legal and institutional frameworks and the management and conservation of marine resources, useful for an integrated management of coastal areas.
2. To train scientists, technologists, planners, decision and policy makers on advanced tools in the field of decision support systems, in particular geographic information systems and image processing.

3. To give an active contribution to the development of a regional plan regarding the management of coastal areas, where the human pressure due to industrialization is high.
4. To discuss national case studies elaborated by participants.

2.2. Expected Outputs

1. Trained participants: National experts will be trained in Integrated Coastal Area Management.
2. Publications: Proceedings, illustrations and presentation of scientific papers, case studies and different experiences in the region.
3. Project idea or proposal: During the training course, an attempt will be made to elaborate on the demonstration project on ICAM to be implemented in Kribi.

3. PARTICIPANTS

The Workshop was attended by delegations from 15 out of the 16 countries located in the GCLME region, namely, Angola, Benin, Cameroon, Cote d'Ivoire, Congo, Democratic Republic of Congo, Gabon, Ghana, Guinea, Equatorial Guinea, Liberia, Nigeria, Sao Tome, Sierra Leone and Togo.

There were at least two participants per country from complimentary disciplines. There was also participation from the private sector, Non-Governmental Organizations, civil society and a host of other stakeholders to ensure a broad spectrum of inputs and interactions. Thus, the Regional Training Workshop was directed at middle to senior level experts working in close contact with the Ministries of Environment, Agriculture, Fisheries, Land Use Planning and Industry, Provincial and Local Governments, Universities and Research Institutions having preliminary experience in scientific and technological activities in the field of Coastal Zone Management.

4. OPENING CEREMONY

The opening ceremony started at 10.00 am and was presided over by the Secretary General of the Ministry of Environment and Protection of Nature (MINEP), Mr. Patrick Akwa Mua Bony, who represented the Minister for Environment and Protection of Nature. The following personalities were present at the opening ceremony: Mrs. Fatima Benani, Field

Representative of the United Nations Industrial Development Organization (UNIDO), the Senior Divisional Officer of the Ocean Division, Mrs. Flavie Ntou Toumou, Vice Mayor of the Kribi Urban Council, the National Project Director for Cameroon, Prof. Tchala, and the GCLME Regional Director, Professor Chidi Ibe.

In his introductory speech, Professor Tchala welcomed all the participants. In her speech, the Resident Representative of UNIDO retraced the history of the project and recalled the project was that of the United Nations System (UNDP, UNEP, GEF, and UNIDO) but whose management is entrusted to UNIDO.

Mr. Patrick Akwa Mua Bony, first of all, apologized on behalf of the Minister for Environment and Protection of Nature who was not available, before delivering the latter's message. In the message, the Minister recalled the priority actions taken by Cameroon for the better management of the coastal zone within the framework of the fight against poverty. He added that the Minister gives a great importance to this Training Workshop that will, in the long run, define a strategy for marine and coastal ecosystems.

5. TECHNICAL SESSION

5.1. General Presentation of the Project - By Prof. Chidi Ibe

Professor Chidi Ibe retraced the history of the project. Between 1995 and 1999, six of the Gulf of Guinea countries, namely, Benin, Cameroon, Ivory Coast, Ghana, Nigeria and Togo collaborated for the implementation of an experimental project entitled: "Control of Water Pollution and Biological Diversity Conservation" in the GCLME. Ministers, concerned about consolidating the experiences of the first phase, have expressed their wish for the extension to the 10 other countries concerned with the Guinea Current.

Professor Ibe brilliantly presented the project and the major environmental issues of coastal regions of the GCLME. He emphasized the fundamental problem of the institutional capacity reinforcement of structures in participating countries.

Professor Ibe outlined the components of the project on the regional level as well as on the demonstration project level. He enumerated the development objectives as follows:

1. Recover depleted fish stocks

2. Restore degraded habitats
3. Reduce pollution discharged on the sea
4. Create a large framework for the management of living and non living resources of the GCLME

He briefly summarized demonstration projects of the six countries, which have participated in the first phase of the project. Finally, Professor Ibe emphasized the importance of the GCLME project for Guinea Current countries.

5.2. Country Presentations

The participating countries then presented the specific problems of their coastal zones. Following these presentations, there were debates on environmental management strategies. From the presentations issues which were specific to the region and the common to all countries, especially cross-border issues were outlined as follows:

1. Coastal erosion
2. Floods
3. Coastal water and sea pollution
4. Decline in fish stocks
5. Habitat degradation
6. High demographic growth in the coastal zone
7. Absence and insufficiency of reliable data on the sub-region
8. Absence and insufficiency of an adequate institutional and legal framework.

5.3. The Basic Principles of Coastal Zone Management - By Prof. Sikirou K. Adam

1. Introduction:
 - a. The GCLME coastal areas: A permanent moving contact between land and sea.
 - b. The African coastal areas constitute the economic lungs of different countries (wealth under various forms).
 - c. The process started with the Stockholm Conference in 1972.
2. General characteristics of the GCLME coastal areas:
 - a. Sandy beaches

- b. High swells
 - c. Fragile ecosystems
 - d. Galloping demography
3. Unplanned economic activities:
- a. Tourism
 - b. Fisheries
 - c. Mining
4. Bad management of these resources;
5. Conflicting uses;
6. Continuous degradation of the coastal environment;
7. Transboundary environmental issues;
- Result in disastrous consequences for local communities. So there is the need for a more coherent management.
8. Conclusion: A deep knowledge of our coastal areas is essential. This is attainable through:
- a. A good methodological approach
 - b. A good definition of spatial unities
 - c. A qualification of coastal areas
 - d. A good control of coastal area dynamics

From his presentation, it is noted that the planning process constituting the fundamental element entails a series of definitions concerning the environment and the management of coastal and marine zones. The fundamental objectives of the integrated management of coastal zones are essentially: a sustainable development, a reliable knowledge of the environment, of operational institutions and a participatory approach.

5.4. Integrated Coastal Area Management - By Prof. Sikirou K. Adam

Prof. Sikirou Adam outlined the analysis of the problem through the components of the system, the major categories of the problem, the major actors of the coastal zone and the

existing relations between the Environmental Impact Assessment and the Integrated Management of the Coastal Zone.

1. The Integrated Management Process
2. Some definitions (Coastal Area, Marine Zone Management, Integrated Coastal Zone Management, Planning, Sustainable, Fair and Rational Management)
3. Principles of Coastal Zone Management: Integrated Coastal Zone Management (ICZM)
4. The stages of the ICZM approach
 - a. Problem analysis
 - b. Definition of coherent management units
 - c. Qualification of coastal areas
 - d. Indicators and indices
 - e. Information systems
 - f. Orientations, proposals and objectives => ICZM and structure of integrated management

5.5. Physical and Biological Environment Information - By Prof. Chidi Ibe

1. Physical Environment

- a. Climatology, storm surges, winds, tides, currents, air-sea interaction.
- b. Terrain, bathymetry, erosional processes, natural processes.
- c. Land-water interface, sediment transport, seismicity, sediment supply.

2. Biological Environment

- a. Primary and secondary production, upwelling, distribution of biota, major habitats and ecosystems, ecological relationships, productivity.
- b. Presence of rare, threatened and endangered species, indicator species, significant threats/hazards to valuable species.

5.6. Lead Discussions on Institutional and Legal Aspects of ICAM - By Mrs Prudence Galega

Mrs. Prudence Galega presented models of project coordination as well as models of integrated management of coastal zones coordination. She reviewed the institutional aspects

at local and national levels, risk management and emergency planning, evaluation of risks and hazards management and planning.

She described the existing institutional framework for politics, legislation procedures, administration, development and management, taking into account the two levels, central and local government. She did the same for the Environmental Impact Assessment process in order to determine the strengths and weaknesses of the system. The implication and role (in case it exists) of each local government, the academic community, the private sector, professional organizations, specific interest groups, NGOs and the public in general that operate on the coast were also described.

In designing and strengthening the enabling environment for a viable ICAM, a major or strategic approach is to give attention to the legal and institutional mechanisms.

1. Problems

- a. Weak coordination
- b. Weak governance
- c. Inadequacies in legal and regulatory framework
- d. Resource Constraints
- e. Information and communication constraints

2. Remedial Options

- a. Institutional aspects: what coordination models, who are stakeholders?
 - Addressing the issues identified remains a challenge to all stakeholders of ICAM operating at local, national or regional levels.
- b. Policy and legal aspects: A policy environment to regulate various conducts or practices with negative impacts is critical.
 - Legal tools
 - Economic tools
 - Participation/participatory management
 - Definitions: Public, Principles, Approaches and Methodology
 - Communication
 - Rapid evaluation in rural communities
 - Communication

- Evaluation

5.7. Risk Assessment, Management and Contingency Planning - By Mr. Zogning

1. Definition of the phenomenon: Catastrophes, Risks: Human and Man-made.
2. Sources vary: Assessment for proper information.
3. Management framework: Defined or adhoc?.
4. Designing contingency plan must include:
 - a. Wide consultation
 - b. Design intervention strategies (Preventive mechanisms, Management of disasters, define coordination framework which involves all stakeholders)
 - c. Wide sensitization of population and
 - d. Be informed by assessment

5.8. Environmental Information Management -By Prof. S. K. Adam

1. Data Banks and presentation (tables etc...)
2. Remote Sensing and Geographic Information Systems
3. Cartography of coastal resources
 - a. Cartographic principles and approaches
 - b. Graphic semiology
 - c. Autographic cartography (different tools)

5.9. Enhancing Visibility of the GCLME Project- Role of the Media - By Nkoli Emenari

Objective:

Enhancing regional and global visibility of the GCLME Project

Activities:

1. Role of National Coordinators
 - a. National coordinators to supply Regional Office in Accra with the names of two environmental journalists from each participating country of whom only one will be selected. Journalists selected must have the ability to get articles published in the major newspapers of their country.
 - b. Liaise with media persons to place regional and national advances and progress of the project into national context.

2. Three-day training and familiarization workshop for 16 journalists
 - a. Venue?
 - b. Agenda:
 - Thorough briefing on the GCLME project Day 1
 - Outline of previous related projects of the GCLME area Day 2
 - Role of the media Day 3
 - c. Award certificates to participants and
 - d. Resource persons

3. Some specific actions.
 - a. Quarterly (at least) reporting on activities of the GCLME project in the main newspaper in each country.

4. Feature articles (selected journalist must take advantage of events, for example, coastal earthquakes, storm surges, flooding in coastal areas, erosion complaints, fisheries matters etc.) to highlight the importance of the Project in managing marine and coastal areas. What resources would be required from the Regional Project Office to facilitate work of journalists to deliver on time?
 - a. Thorough briefing on the GCLME project Day 1
 - b. Outline of previous related projects of the GCLME area Day 2
 - c. Role of the media Day 3
 - d. Documentary in French and English for easy telecasting on radio and television.
 - e. Monitoring and remuneration
 - Each journalist should aim at 4 articles per year (minimum) and mail published article to Regional Office.
 - Honorarium of \$250 per article published.

5.10. Group Assignments

Following the different presentations, three groups were formed as follows:

1. Group A: Angola, Benin, Congo, Guinea and Ghana
2. Group B: Cote d'Ivoire, Liberia, Sierra Leone, Gabon and Togo
3. Group C: Cameroon, Democratic Republic of Congo, Equatorial Guinea, Nigeria and Sao Tome.

The terms of reference of each group were as follows:

1. Causal analysis of strategic planning
2. Strategic approach for the resolution of issues tackled

Results of Group Assignments

1. Causal Analysis of Strategic Planning

a) Fishing Decline

- Coastal protection service
- Respect of sampling standards (Licenses attribution)
- Control of the available biomass
- Stock evaluation
- Application of the ecosystem approach in fishery
- Abusive exploitation of fish species
- Pollution deriving from diverse sources
- Illegal fishing
- Consequences of climatic changes
- Destruction of natural habitats
- Development of technologies

b) Coastal Erosion

- Construction of seawalls, gabions, breakwaters
- Setting up protection, control and follow-up measures of the coastal zone
- Scheduling the study of the phenomenon
- Setting up a premature alarm system for all risks and natural catastrophes
- Anarchic constructions

- Constructions of large hydroelectric dams
- Destruction of coastal forests
- Climatic changes (sea level)
- Construction of development infrastructures (routes, habitats, ...)
- Exploitation of sand quarries.

c) Pollution

- Effective application of the different international conventions in the marine environment
- Application of the environment code
- Elaboration of the action plans for emergency intervention in the sub-regional countries
- Elaboration of impact assessment
- Evaluation of companies that discharge wastes and pollutants in each country
- Setting up reception and sewerage plants in harbours and industrial companies
- Environmental education
- Untreated industrial discharges on the sea
- Domestic discharges
- Absence of sewerage plants
- Discharge of agricultural products (pesticides)
- Degassing discharges (ballast water)
- Accidental pollutions
- Bad harbour handling.

d) Governance

- Reinforcement of the capacities of institutions and human resources
- Institutions (equipment...)
- Reinforcement of information capacities in new technologies (NTIC)
- Training of media and NGOs
- Education of grass root populations
- Arousing adherence of political leaders

- Absence of adequate laws
- Competence conflicts among intervening persons
- Non application/applicability of the law
- Compartmentalization of the administration
- Non application of preventive measures
- Unfavourable institutional conditions
- Absence of synergy between actors
- Bad circulation of information
- Low level of awareness
- Adequate training
- Absence of adapted human resources.

2. Strategic approach for the resolution of the issues tackled

General Objectives: Sustainable Management of Coastal Zones of GCLME Countries.

Specific Objectives:

a) Decline of Resources

- Restoration and rational management of aquatic resources
- Conservation of threatened and endangered species
- Conservation of biodiversity
- Rational management of fishery resources.

b) Coastal erosion

- Coastal protection
- Restoration of degraded habitats, spawning grounds and degraded forests
- Controlled coastal erosion.

c) Pollution

- Improvement of water quality
- Pollution reduction.

d) Governance

- Improvement of institutional capacities concerning marine and coastal ecosystems
- Improvement of institutional capacities concerning management of marine and coastal ecosystems

- Elaboration of legal texts on protection of the coastal zone
- Elaboration of enforcement texts
- Setting up coordination groups of coastal zone management
- Implementation of GCLME project within all the 16 countries.

e) Expected Results

- The coastal zones of GCLME countries are well managed.

6. FIELD VISIT

A field visit took place on Wednesday afternoon to the fishing village of Londji (a Nigerian Yoruba village) located about 12 km from Kribi. A working session was held with the chief of the village who shared with participants, their daily difficulties as well as their expectations.

7. WORKSHOP EVALUATION

A workshop evaluation questionnaire was distributed to participants, at the start of the Workshop to record their evaluation of each topic/session as the Workshop progressed. The results of the questionnaire are outlined in Table 1.

The objective of the Workshop was to provide an opportunity for participants to appreciate and experience the comprehensive nature of coastal zone planning and management. The unanimous verdict of participants was that this objective had been achieved.

There was similarly a unanimous verdict that the participants were leaving with the confidence of being able to initiate and coordinate the process of preparing plans for Coastal Zone Management and implementing the resultant operational plans successfully. Participants also agreed that an interactive and participatory approach had been successfully adopted. However, according to two participants, there was insufficient technical and scientific content.

The aim of the group assignment was to provide an opportunity for participants to experience the processes of coastal zone planning, particularly its wide scope, its demands and its limitations. Participants were unanimous in finding the group assignment valuable and similarly, all felt that it had achieved its aims.

The visual material was weak because the Power Point material was defective. The organizers aimed to facilitate full participation in the Workshop by removing all possible difficulties for participants and making their stay in Kribi, Cameroon a pleasant one.

Table 1. Workshop Evaluation Score

TOPIC / SESSION	Scope and depth	Preparation	Clarity of deliver	Adequate explanation	Visual material	Responses to questions	Discussion opportunity	Average
Principles and Definition of Coastal Zone Management	4	4	4	4	3	4	4	3.85
The EIA Process	4	4	4	4	3	4	4	3.85
Public Participation	5	5	4	5	3	3	5	4.28
Land-use, Land-based Resources	3	3	4	3	3	4	5	3.57
Hydrology, Freshwater Resources	3	3	3	3	3	4	4	3.28
Climatology	3	4	4	4	3	3	4	3.57
Physical Oceanography	4	4	4	4	3	4	4	3.85
Ecological Principles	4	4	4	3	3	4	4	3.70
Ecological Survey Techniques	3	3	4	4	1	4	4	3.28
Fisheries and Aquaculture Resources	5	4	4	4	5	4	4	4.28
Institutional Aspects	4	4	4	4	3	4	4	3.85
Managing Uncertainty	4	4	4	4	1	3	4	3.42
Legislative Tools	4	4	4	4	2	3	4	3.57
Economic Tools	3	3	3	3	3	4	4	3.28
Data Management and Presentation	4	4	4	4	3	3	4	3.71
Gis (Geographic Information System)	4	4	4	4	2	4	4	3.71
Coastal Resources Mapping	4	3	4	4	3	4	4	3.71
Average	3.82	3.76	3.88	3.82	2.76	3.70	4.11	3.691 3.692

8. RECOMMENDATIONS

At the end of the Workshop, recommendations were made. Among these were recommendations regarding:

1. National Managers

- a. Set up a real framework for the integrated management of the coastal zone on the basis of the model selected during the Regional Workshop in Kribi, Cameroon.
- b. Integrate communication experts and non-governmental organizations into national committees on the integrated management of coastal zones (ICAM) as well as into the steering committee of the project.
- c. Organize the restitution of the Workshop conclusions at the national level.
- d. Elaborate on the coastal profile of the ten new countries.
- e. Update the coastal profile of the first six countries.

2. Regional Coordination

- a. Reinforce the capacities of participating countries with special attention to the ten new countries.
- b. Reinforce administrative and financial capacities of the Project Committee and National Committee.
- c. Provide financial assistance for the acquisition of laboratory equipments.
- d. Support the implementation of the ICAM (integrated management of the coastal zone) database for the countries of Large Marine Ecosystems.
- e. Assist scientists to publish the relevant results of their research.
- f. Set up a cartography of case-sensitive and risk zones both at national and regional levels.
- g. Set up a premature alarm system about risks.
- h. Promote adoption of international conventions for the protection of GCLME.
- i. Help countries to translate international conventions into legal and regulatory texts and enforce them effectively in the GCLME countries.

3. Communication

- a. Set up an internet site for the project allowing the follow-up and application of the themes of GEM CG and the identification of a webmaster.

- b. Set up a quarterly review of the reports of each national manager and the activities of NGOs and the press.
- c. Grant (financial and material) assistance to all the participating countries particularly to the 10 new countries and, especially, to those recovering from a war situation, in order to establish data and information systems.
- d. Train journalists and the media in the dissemination of data and information both at national and regional levels.

4. Prerequisites and Institutional Aspects

The application of a common, standardised ICAM procedure by various countries offers great advantages related to the possibility of exchange of information, assistance, transfer of knowledge, implementation of comparative studies, joint research and/or technical programmes/projects. On the other hand, the application of the recommended procedures requires a certain number of prerequisites to be met. The most important of them are:

- a. Political will: The responsible political and executive authorities must develop and express a positive will to define and implement harmonized activities and adequate institutional instruments relative to best coastal area management as an essential component of the national development/environment policy.
- b. Institutional capacity: The authorities, institutions and professionals involved (Governments and administrations at national and local levels; university departments and research institutions; institutes; NGOs) are supposed to possess an average level of appropriate organizational, scientific and/or professional capacity, and a certain previous experience in ICAM related activities.
- c. Capacity of integration: Due to the fact that erosion phenomena are of a multidisciplinary and multisectoral nature, the will and ability to establish horizontal and vertical integration / coordination / cooperation, including the integration within a larger ICAM framework, is highly necessary.
- d. Knowledge of coastal area processes and related problems: A certain level of information and scientific knowledge of relevant and representative coastal dynamic phenomena, understanding of impacts of coastal processes on the national economy

and environment, understanding of the benefits of application of a common consolidated methodology and finally, understanding of priorities.

- e. Existence of a National Erosion Control Programme, as part of the National Development Policy and Strategy.
- f. Existence of a specific, Area-Related Coastal Habitats Control Programme, as part of the National Programme
- g. Public awareness, to be achieved through education, information, demonstration and sensitization of the farmers at household and rural community levels.

The experience gained by the GoG LME project in the implementation of the programme indicates that the above prerequisites can be reasonably met in almost all of the GCLME countries. However, even if some of these prerequisites do not exist, or are not fully met, it is strongly recommended that training courses be organized in order to achieve the necessary level of capacity and experience. Furthermore, preparatory training and on-the-job training, in particular carrying out of the Coastal Profiles, are recommended when starting the application of the ICAM procedures.

5. Suggested Format and Scope of a Coastal Profile

The following is only a suggested format and scope of a typical coastal profile. Participants are expected to use their initiative and local experience to determine the format and scope most appropriate for their country situation.

- a. Define your coastal zone – determine your boundaries on land as well as at sea.
- b. Evaluate the environmental database for this zone, in terms of its scope, comprehensiveness, reliability, time scale, accessibility, etc. Identify serious gaps in information which must be addressed before ICZM can be implemented.
- c. Describe the environment (physical, biological, social) and its resources; Note in particular critical habitats and protected areas, and areas which merit protection; Note also those environmental features which give your country its unique character.

- d. Identify present and potential activities, uses and demands on a sector-by-sector basis. Note in particular the conflicting demands.
- e. Identify the major resource management issues such as, access to the coast and coastal resources, multiple use of resources, development patterns and population pressures and accepted priorities for management.
- f. Describe the existing institutional framework for policy, legislation, procedures, administration, planning and management taking into account both central and local government levels; Describe the EIA Process; Identify in particular the strengths and weaknesses of the system.
- g. Describe the involvement and role (if any) of each local government, the academic community, the private sector, professional organizations, special interest groups, other NGOs and the general public in caring for the coast.
- h. Bearing in mind the various ingredients that are necessary for effective implementation of the ICZM approach, identify the specific problems that you believe will need to be overcome in your country before ICZM can become established successfully.
- i. In developing the Coastal Profile, it is important to determine in advance who your audience is, and write accordingly.
- j. Use graphical material as appropriate (such as maps and flow diagrams) to illustrate the Coastal Profile.
- k. If possible, participants should use appropriate data processing programmes and deliver results on CD Roms.

9. CONCLUSIONS

1. The final product: a tool for decision-making.

The final product of the ICAM process presented in different guidelines is composed of:

- a. Identification of problems
- b. Strategies for solutions
- c. Recommendations and
- d. Management proposals for professionals and decision-makers.

In addition, reports on national cases, interpretation and proposals will be presented either separately or within a final report including a summary report for decision-makers. The following points illustrate the approach to the presentation of final documents:

Presentation of Results in a Management-oriented Manner

The report should contain a summary written in a way that is understandable and useful for decision-makers:

- a. The benefits obtained with the mapping and measurement programme should be presented. This should include the list of the new information obtained in it (basic interpretation of mapping results, rainfall, runoff, runoff coefficients, peak discharges, dissolved loads, suspended loads, erosion rates). A comparison with the spatial and temporal resolution of the data obtained through customary schedules by water or soil. Authorities should also be discussed.
- b. The environmental significance of the information obtained should be presented, combining the information existing before the mapping results and the results of the measuring programme, with the more quantitative information obtained during it. The integration with the information obtained during the mapping programme is highly desirable. The fact that this information is the most realistic possible (neither catastrophic nor optimistic) should be highlighted. Although the design of erosion control works or land management strategies is not a direct purpose of the mapping and measurement project, the need for these policies as well as some general recommendations for their implementation should be presented.

- c. A generalisation of the provided information should be made. This should include an estimation of the environmental significance of areas with similar problems in other parts of the country, as well as the comparison with other areas where erosion rates are known. A comparison of the quality of data provided by the programme with other data should also be made. The information on sediment transport rates and processes should be used together with the mapping information to identify and assess the sediment sources within the catchments. Land management strategies for erosion control must be directed to sediment sources and pathways to improve the effectiveness/cost ratio.

- d. Finally, some recommendations on the future application of the results of the mapping and measurement programme should be made. These can include aspects like changing the scale of the study either to more detailed scales (plot studies) or to wider ones (bigger catchments); checking the quality of other data on erosion rates; implementing similar programmes in other areas with erosion problems; or using the instrumented catchments to check the effectiveness of erosion control works or land management strategies.

From the point of view of the management aspects, the implementation of the erosion mapping and measurement programme as has been described implies the existence of several prerequisites that include:

- a. A co-ordinated and integrated management effort comprising various Government/authorities levels: the responsible and interested national ministries, as well as lower-level and local authorities. Relevant sectoral decisions have to be prepared, discussed and approved, securing harmonisation with other sectoral activities, adequate and timely information, financial and other logistical elements defined, and implementing agency/institution nominated.

- b. The implementing agency to be nominated, the necessary professional and organisational level achieved, equipment provided and training performed (if necessary).

- c. The coastal process control programme for the area to be formulated and approved, preferably as a part of the National Coastal Profiles Programme, and in harmony with the priorities established at the national level.
- d. Institutional, logistical, managerial, legal and other problems, if any, identified in time and resolved with respect to the mapping and measurement area, field visits and equipment to be installed and maintained.
- e. Timely and adequate training of staff to be organised at the level of implementing institution, information and general training at other levels, if necessary and appropriate.
- f. Management elements to be included in the programme: harmonisation and correlation of the field measurements with the mapping exercise, interpretation of the results achieved; formulation of proposals for mitigation/control or preventive measures to be implemented within the erosion control programme; interpretation of results and proposed measures at ICAM level in order to achieve firstly, intrasectoral and secondly, multisectoral integration.

2. Recommendations and Proposed Actions for Managers

Often, integrated development master plans are nonexistent, non-integrated, incomplete or obsolete because they have been overtaken by the actual development of the region. Decision makers often lack the political will to stop or at least break this wealth-generating development. In order to prevent future degradation due to uncontrolled erosion and to mitigate existing erosion problems, as a starting point, every government should:

- a. Make an inventory of land resources (climate, soil, water and biota), gathering fragmented data and filling in gaps by surveys and remote sensing combined with geographic information systems.
- b. Assess potentials and constraints of local development projects including all different sub-sectors that coastal areas are likely to offer: farming, industry, communication, urbanization, tourist facilities (sport grounds, hotels, camps, aquatic sports, etc) and

conservation practices, and identify options to raise land productivity and decrease risks while reducing degradation.

- c. Study reasons behind poor land use, including land tenure problems, pricing of agricultural produce and inputs, subsidies, taxes, laws and social customs.
- d. Plan phased changes to develop land management practices and to encourage individual operators and farmers to adopt sustainable forms of land use and development.

These will help identify strategies for the ICAM programme and will also help national and local governments avoid schemes, which treat symptoms rather than the causes and encourage the awareness and the participation of all land users. Past land conservation and rehabilitation projects have often relied heavily on the construction of physical infrastructure. Such practices are expensive per unit area conserved and/or rehabilitated and maintenance is a problem after support staff and equipment are withdrawn. Also, it is difficult to apply these strategies widely or quickly enough to overcome erosion problems of a large scale. To this end, governments should create greater awareness of coastal issues and land improvement potentials while addressing coastal habitat degradation issues. This implies the use of the media and training of technical staff to assist land users in this new approach.

Developing Strategies

Each GCLME country must develop policies and strategies relevant to local circumstances. Under the guidance of a high level advisory commission composed of erosion mitigation specialists, land use planners, as well as responsible authorities and political representatives, one clearly defined ministry department should have the overall responsibility and authority to:

- a. Back up services to land users by rationalizing and strengthening institutions plus appropriate training, research and legislation to support the ICAM effort.
- b. Appraise the environmental components of regional development programmes, with political, social and economic information used to formulate a policy and long-term coastal management strategies.

- c. Develop detailed programmes, about three to five-year rolling plans which must be reviewed and updated annually and
- d. Promote local programmes according to the present needs.

Catalyzing Regional Programmes

Regional programmes give each country the chance to benefit from other countries' successes in ICAM, and in particular:

- a. Overall training needs should be assessed so that appropriate multidisciplinary courses can be developed in key regional universities and specialized institutes.
- b. As research is expensive, efforts can often be pooled where conditions are similar and priorities identified.
- c. Research findings can be spread through simple networks and newsletters.

Coordinating International Actions

In order to control or prevent coastal habitat degradation, and maintain permanent installations, many countries need the support of technical agencies:

- a. Governments should commit themselves to the long-term policies, programmes and financial requirements that can bring about sustainable forms of land use.
- b. Technical organizations should help formulate overall programmes. By doing so they can identify where and how their inputs can best be used and fit contributions together in an overall National Action Plan.

ANNEX A

WORKSHOP PROGRAMME

DAY ONE Monday 11 April

9.00–10 am - Opening Ceremony

1. Welcome address by the National Director of the GCLME
2. Speech from UNIDO Resident Representative in Cameroon
3. Opening Speech by the Minister of Environment

Cocktail

1. The Large Marine Ecosystem Approach
2. Environmental Challenges in the GCLME Region
3. Country Presentations
4. Workshop Review of these Issues
5. Discussions

PART ONE–BASIC PRINCIPLES OF INTEGRATED COASTAL AREA MANAGEMENT

DAY TWO- Tuesday 12 April

1. Planning Process of the Integrated Coastal Area Management
 - Definition of Different Concepts
 - Objectives and Management Framework
 - Coastal Area Management Principles
2. Analysis of Conflicting Multiuse of the Coastal Zone
 - System Components
 - Main Problematic Issues
 - The Main Actors of the Coastal Zone
 - Relationships between EIA and Integrated Coastal Area Management
3. Definition of Coherent Management Units, Indicators and Indices
4. Information Systems
5. Synthesis

DAY THREE–Wednesday 13 April

Coastal Area Characteristics

1. Physical Environment:
 - Geomorphology
 - Coastal Oceanography
 - Hydrography and Hydrogeology
2. Biological Environment:
 - Biodiversity
 - Ecology and Living Resources

3. Human Activities:

- Fisheries
- Aquaculture
- Agriculture
- Oil Exploitation
- Tourism
- Transport

4. Field Visit/ Synthesis

PART TWO– LEGAL & INSTITUTIONAL FRAMEWORK

DAY FOUR –Thursday 14 April

1. Institutional Aspects

- At Local Level
- At National Level
- Risk Assessments and Contingency Plans

2. Policy and Legal Aspects

- Legal Tools
- Agreements and International Treaties
- Environmental Law

3. Economic aspects

- Involvement (Management and Participative)
- Approaches and Methodology Principles,
- Communication
- Rapid Rural Appraisal

4. Environmental Information Management

- Data Banks–(Pictures, Modelling and Simulations)
- Remote Sensing and Geographical Information Systems (GIS)
 - Assets, Constraints and Limits, Applications
- Coastal Resource Mapping
 - Cartographic Principles and Approaches
 - Graphic Semiology,
 - Automatic Cartography: Various Software
- Field Trip

PART THREE–WORKING GROUPS & CONCLUSION

DAY FIVE –Friday 15 April

1. Working Groups

- Group Formation.
- Working Group
- Plenary Session
- Recommendations,

2. Workshop Evaluation

3. Closing Ceremony

ANNEX B

DISCOURS DU REPRESENTANT DE L'ONUUDI AU CAMEROUN

Monsieur le Ministre de l'Environnement
Monsieur le Directeur Régional du Projet
Messieurs les Représentants des Ministères Techniques
Mesdames et Messieurs les Directeurs Centraux
Mesdames et Messieurs les Représentants du Secteur Privé
Mesdames et Messieurs les Représentants des Organismes Internationaux
Mesdames et Messieurs les Représentants des ONGs
Mesdames et Messieurs les Représentants des Communes Côtières
Honorables Invités
Mesdames et Messieurs,

Je voudrais, au nom du Directeur Général de l'ONUUDI vous remercier de votre présence massive qui témoigne de l'intérêt que vous portez aux problèmes environnementaux. C'est pour moi un immense plaisir de m'adresser à ce parterre d'experts venus réfléchir sur la gestion intégrée des aires côtières ici au Cameroun. Je salue tout particulièrement le Directeur Régional du GCLME qui a su conduire de main de maître la phase pilote de ce projet et le passage à la phase opérationnelle actuelle.

Votre présence effective, Monsieur le Ministre est un témoignage de l'intérêt que vous et le Gouvernement Camerounais, portez aux questions touchant à la gestion rationnelle de l'environnement et des ressources côtières.

Comme vous le savez, la zone côtière est l'objet depuis un certain temps d'une attention particulière de la part des autorités politiques de la région, eu égard à la forte pression démographique consécutive au développement intense des activités socio-économiques, au non respect de la réglementation et à l'occupation anarchique des espaces naturels. Ce qui a entraîné la dégradation de l'habitat, les pollutions de toutes sortes et la surexploitation des ressources halieutiques. Toutes ces préoccupations qui sont déjà contenues dans le Plan National d'Action Environnementale (PNAE) sont abordées de façon sectorielle.

Le Projet Grand Ecosystème du Courant de Guinée apparaît comme l'un des projets les plus importants de l'Afrique au Sud du Sahara. En plus du nombre de pays concernés, les objectifs de ce projet sont importants, parce qu'il s'agit entre autres, de préserver l'environnement marin et côtier par la mise en place des synergies entre les pays côtiers, afin de rechercher des solutions régionales à des problèmes communs.

En appuyant le présent atelier régional de réflexion sur la Gestion Intégrée des Aires Côtières, l'ONUUDI, consciente de la dégradation persistante des côtes, entend contribuer à élaborer les mesures susceptibles d'assurer une meilleure protection des côtes du Cameroun et de celles de la Région du GCLME. La présence des experts que vous êtes à cette rencontre présage déjà de résultats positifs.

Il me paraît tout de même important souligner que l'ONUUDI est au sein du système des Nations Unies, l'organisme chargé de la mise en œuvre de nombreux accords internationaux y compris ceux de Kyoto, Montréal, Stockholm, aussi l'ONUUDI occupe une place de choix dans la conduite des projets du FEM. C'est à ce titre que le Fonds pour l'Environnement Mondial a bien voulu lui confier cet important projet qui est également en accord avec les objectifs du NEPAD (Nouveau partenariat pour le développement de l'Afrique), initiative mise au point par les dirigeants africains et reprise par le G8 pendant sa réunion de juin

dernier au Canada.

Mesdames et Messieurs, honorables séminaristes, le présent atelier, comme vous pouvez en déduire, s'inscrit dans un ensemble d'actions en faveur d'un environnement sain. D'ailleurs, l'ONUDI agit aujourd'hui conformément à un triptyque « Emploi productifs, Environnement sain, Economie compétitive ». Concernant spécifiquement l'Environnement sain, il s'agit de favoriser la création d'un cadre d'action en faveur de l'environnement, d'aider à l'application des conventions cadre des Nations Unies sur les changements climatiques. Cette approche environnementale prend aussi en compte le rendement énergétique, la mise en valeur de l'énergie en un milieu rural, la production industrielle moins polluante.

Un certain nombre de constats s'imposent. L'état du Grand Ecosystème Marin du Courant de Guinée (GEM-CG) n'a pas cessé de se dégrader. Les activités de la pêche industrielle empiètent dangereusement sur la pêche artisanale du GEM-CG, menaçant ainsi la sécurité alimentaire et les revenus liés à la pêche, des populations riveraines. Le Projet sur le Grand Ecosystème Marin du Courant de Guinée (GEM-CG), vise à aider les pays adjacents au Courant de Guinée à la préservation de l'environnement et des ressources. L'on y aboutira en passant de la gestion sectorielle à court terme, à l'adoption d'une perspective intégrée à long terme.

La phase Pilote du Projet GEM-GDG qui a vu la participation de six pays s'est achevée en Novembre, 1999. Ce nouveau projet aidera ces 16 pays limitrophes du Grand Ecosystème Marin du Courant de Guinée à opérer les changements nécessaires dans la conduite des activités humaines dans les différents secteurs afin de s'assurer que le GEM-CG et ses Bassins Versants contribuent durablement au développement socio-économique de la région.

Un des objectifs du projet est de conjuguer les capacités des pays du Courant de Guinée afin de pouvoir contrer les problèmes transfrontaliers de l'environnement, conformément à leurs responsabilités telles que définies dans la Convention d'Abidjan et son Protocole.

L'ONUDI compte sur votre expertise et porte une attention toute particulière aux fruits de vos travaux qui permettront de mieux cerner les principes de base de la gestion des aires côtières dans lesquels seront intégrés les aspects législatifs et institutionnels.

Mesdames, Messieurs, honorables participants, je voudrais remercier encore une fois le Gouvernement et les populations du Cameroun, le PNUD, le PNUE, le FEM, ainsi que tous les organismes intervenant dans le domaine de l'Environnement et souhaiter pleins succès à vos travaux qui conduiront inexorablement à l'adoption de plans nationaux pour une meilleure gestion des aires côtières.

Je vous remercie.

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