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# ACRONYMS

| | |
|---|---|
| AfDB | African Development Bank |
| AU (STRC) | African Union (Scientific, Technical and Research Commission) |
| BOD | Biological Oxygen Demand |
| BEP/BATs | Best Environmental Practice/Best Available Technologies |
| CBOs | Community Based Organizations |
| CCRF | Code of Conduct for Responsible Fisheries |
| CECAF | East and Central Africa Fisheries Commission |
| CIA | Central Intelligence Agency |
| COD | Chemical Oxygen Demand |
| COMIFAC | Conference of Ministers in charge of the Forests in Central Africa |
| COMHAFAT | Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean |
| COP | Conference of Parties |
| COREP | Regional Fisheries Committee for the Gulf of Guinea |
| CSRP | Comité Sous Régional de Pêche |
| EEZ | Exclusive Economic Zone |
| EIA | Environmental Impact Assessment |
| ENSO | El Nino Southern Oscillation |
| EQO | Environmental Quality Objectives |
| FAO | Food and Agriculture Organization of the United Nations |
| GCC | Guinea Current Commission |
| GCLME | Guinea Current Large Marine Ecosystem |
| GEF | Global Environment Facility |
| GEOSS | Global Earth Observing System of Systems |
| GIRMaC | Programme for Integrated Management of Marine and Coastal Resources (Programme de Gestion Intégrée des Ressources Marines et Côtières) |
| GIS | Geographic Information System |
| GloBallast | Global Ballast Water Management Programme |
| GOOS | Global Ocean Observing System |
| GOG-LME | Gulf of Guinea Large Marine Ecosystem |
| GPA | Global Programme of Action for the Protection of the Marine Environment from Land-based Activities |
| HAB | Harmful Algal Bloom |
| HACCP | Hazard Analysis Critical Control Point |
| ICAM | Integrated Coastal Areas Management |
| ICCAT | International Commission for the Conservation of Atlantic Tuna |
| ICTZ | Intertropical Convergence Zone |
| IGCC | Interim Guinea Current Commission |
| IOC | Intergovernmental Oceanographic Commission (of UNESCO) |
| IMO | International Maritime Organization |
| IPIECA | International Petroleum Industry Environmental Conservation Association |
| IPCC | Intergovernmental Panel on Climate Change |

| | |
|---|---|
| JPOI | Johannesburg Plan of Implementation |
| LBAs | Land-based Activities |
| LME | Large Marine Ecosystem |
| MARPOL | International Convention for the Prevention of Pollution from Ships (MARPOL Convention 73/78) |
| MPAs | Marine Protected Areas |
| MPPI | Major Perceived Problems and Issues |
| NAPs | National Action Plans |
| NPA | National Programme of Action |
| NEPAD | New Partnership for Africa's Development |
| NGOs | Non-Governmental Organizations |
| ODINAFRICA | Ocean Data and Information Network for Africa |
| OPRC | International Convention on Oil Pollution, Preparedness and Co-operation |
| PADH | Physical Alteration and Destruction of Habitats |
| PDF | Project Development Fund |
| POPs | Persistent Organic Pollutants |
| PRCM | Regional Programme for the Conservation of the Coastal and Marine Zones of West Africa |
| PSC | Project Steering Committee |
| RCU | Regional Coordinating Unit |
| RPA | Regional Programme of Action |
| SAP | Strategic Action Programme |
| TDA | Transboundary Diagnostic Analysis |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational Scientific & Cultural Organization |
| UNIDO | United Nations Industrial Development Organization |
| US-NOAA | United States National Oceanic and Atmospheric Administration |
| WACAF | West and Central Africa |
| WSEMS | Waste Stock Exchange Management System |
| WSSD | World Summit on Sustainable Development |

# EXECUTIVE SUMMARY

This Strategic Action Programme (SAP) for the Guinea Current Large Marine Ecosystem (GCLME) is a negotiated policy document under the aegis of the IGCC (later GCC) which describes policy, legal and institutional reforms and investments needed to address the priority problems of a transboundary nature identified in the Transboundary Diagnostic Analysis (TDA) of the GCLME Region. Within the context of the TDA, transboundary environmental issues include national/regional issues with transboundary causes/sources, transboundary issues with national causes/sources, national issues that are common to at least two of the countries and which require a common strategy and collective actions to address, and issues that have transboundary elements and implications. The document outlines the intervention actions required to resolve these priority problems.

The preparation of the SAP has been a cooperative process among the participating countries. Endorsed by Member Countries, the SAP re-affirms regional joint commitment to the integrated management, protection and use of the resources of the GCLME linked estuaries and littoral areas and their sustainable development by the people of Angola, Benin, Cameroon, Congo, Côte d'ivoire, Democratic Republic of Congo, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sao Tome and Principe, Sierra Leone and Togo.

The GCLME is a shared resource that is one of the world's most productive marine areas with rich fishery resources, oil and gas reserves, precious minerals, a high potential for coastal tourism and is an important global reservoir of marine biological diversity which make a major contribution to livelihoods, and a veritable source of goods and services for economic growth. Most of the coastal wetlands provide unique ecological conditions and habitats for migratory birds which over-winter annually in West Africa. The extensive mangrove forests are also biologically and socio-economically significant in providing fuel wood, timber, and medicinal plants and serve as a sanctuary for the spawning and breeding of many transboundary fish and shrimp species.

Approximately 40 percent of the region's 300 million people (more than half of the population of the African continent) live in the coastal areas, and are dependent on the lagoons, estuaries, creeks, and inshore waters surrounding them for their sustenance and general well being. Rivers and lagoons serve as important waterways for the transportation of goods and people. They are also important sources of industrial raw materials and animal protein in the form of fish and shellfish. Similar to conditions in the rest of the world, many of the region's poor are crowded in the coastal areas and are engaged in subsistence socio-economic activities. In spite of improvements in economic growth widespread poverty persists due in part to environmental linkages and socio-political issues.

The rapid population growth in the coastal areas have resulted in disruptions of social values and culture, socio-economic dislocations and conflicts in addition to serious environmental degradation. It is recognized that several decades of over-exploitation of resources and habitat degradation in the Guinea Current Ecosystem have left a legacy of fragmented and sectorally based management due in part to a history of colonial rule. This has resulted in an absence of coordinated planning and integration, poor legal framework, weak enforcement and implementation of existing regulatory instruments, inadequate public involvement, varied regional capacity development and poor financial mechanisms of support.

The real challenge is to develop systems and structures to address the naturally highly-variable and potentially fragile nature of the GCLME and its coastal environment to reverse declines of fish stocks and non-optimal harvesting of living resources; loss of ecosystem integrity arising from changes in community composition; threats to vulnerable species and biodiversity; introduction of invasive alien species; deterioration in water quality from land and sea-based activities; harmful algal blooms; habitat destruction and alteration, including modification of sea bed and coastal areas, coastline degradation and erosion. Though having different socio-economic conditions and being on different development paths, the countries recognize the transboundary nature of these threats to their economic well being and the imperative of addressing them through cooperative assessments and joint actions. The regional transboundary environmental problems have implications, which can be mitigated through cooperative regional actions to manage the complex ecosystem on an integrated and sustainable basis.

The SAP shall employ a holistic ecosystem-based approach for the integrated assessment, monitoring and adaptive management of coastal and marine resources, and to managing human activities in these systems within a framework of sustainable development. The applicability of principles such as the precautionary approach, regional contingency planning, environmental impact assessment, integrated coastal areas management, strategic environmental assessment (involving the conservation of living resources and biodiversity, establishment of a network of marine protected areas, the transboundary assessment of the environmental consequences of government programmes, policies and plans), cleaner technologies, use of multilateral economic and policy instruments, active public and stakeholder participation, accountability and transparency are indicated in the collaborative approach for resource sustainability and ultimately self-financing management regime.

The Legal, and institutional reforms and investments needed to address the priorities in the SAP are outlined in the strategies for sustainable utilization of marine living resources; minerals and extractive resources; effective assessment of environmental variability, ecosystem impacts and development of early warning system for ecosystem change; assessment, reduction and control of pollution; maintenance of ecosystem health and protection of biodiversity; and the cross-cutting issues(e.g. capacity building and institutional strengthening, public and stakeholder participation,

communication, information, education and awareness) including investment actions. In addition, each member country will prepare a National Action Plan (NAP) which will form an integral part of this SAP. Each NAP shall identify a suite of measures, actions and investments for environmental protection and sustainable use of natural resources that will be taken to effectively address strategic transboundary issues and the most urgent environmental concerns at the national level.

Member countries will seek the necessary funding for the actions agreed upon in this Strategic Action Program from national, regional and international sources (in addition to the Global Environment Facility (GEF) and other bodies established to support the implementation of international environmental conventions and relevant protocols) and mobilize resources from private and public funding for sustainable contributions or through the application of new and appropriate economic incentives/instruments designed to encourage environmental investments where possible. The strengthening of public-private partnership arrangements designed to encourage the active involvement of governance bodies, business community and civil society is seen as a potential option for improving the existing situation. Additional funding required for strengthening the financial sustainability and ensuring prompt and adequate provision of funding for priority actions identified in the SAP/NAPs will be secured by the Member countries in the form of external investments, loans, grants, and other technical assistance arrangements.

The provision of adequate arrangements for monitoring and assessment is a key to ensuring the successful implementation of this SAP. At the national level, the governmental bodies responsible for the formulation and implementation of national environmental policies and coordination of national environmental monitoring efforts will play a major role in the SAP monitoring and control of the SAP/NAP implementation on the basis of relevant measurable and quantifiable performance indicators (Annex III). At the regional level, the Interim Guinea Current Commission (IGCC), which will later become a full-fledged Guinea Current Commission (GCC) through the technical Advisory Groups and /or any other Experts or Bodies to be constituted as recommended by the Executive Secretary, shall be responsible for monitoring and reviewing the progress of the SAP implementation from time to time, and updating it in line with reality as found necessary.

In order to sustain regional cooperation, the IGCC (and later the GCC) comprising of the Council of Ministers designated to represent Member Countries shall supervise the implementation of this SAP. They will be assisted by a Steering Committee comprising high level government representatives, non-governmental organizations, collaborating United Nations agencies (UNEP, UNDP, UNIDO, IMO, FAO, IOC of UNESCO, etc), US- NOAA, NEPAD, AU, AfDB, and private sector representatives. They will be supported by the secretariat of the IGCC headed by an Executive Secretary.

# AGREEMENT

**PARTIES**

1) The Republic of Angola
2) The Republic of Benin
3) The Republic of Cameroon
4) The Republic of Congo
5) The Republic of Côte d'Ivoire
6) The Democratic Republic of Congo
7) The Republic of Equatorial Guinea
8) The Republic of Gabon
9) The Republic of Ghana
10) The Republic of Guinea
11) The Republic of Guinea Bissau
12) The Republic of Liberia
13) The Federal Republic of Nigeria
14) The Democratic Republic of Sao Tome and Principe
15) The Republic of Sierra Leone
16) The Togolese Republic

**PREAMBLE**

We, the signatories to this agreement, who are member countries of the Interim Guinea Current Commission (IGCC) later the Guinea Current Commission (GCC);

**Committed** to the integrated management, development, protection and sustainability of the Guinea Current Large Marine Ecosystem;

**Continuing** in the Spirit of the United Nations Conference on the Human Environment (Stockholm, 1972), United Nations Declaration on Environment and Development (Rio Declaration) and its Agenda 21, the Abidjan Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (1981), the United Nations Convention on the Law of the Sea (1982), the FAO Code of Conduct for Responsible Fisheries (1995), the Coastal and Marine Environment component of the New Partnership for Africa's Development (NEPAD) Environmental Action Plan, the GEF Operation Strategy, the Global Programme of Action for the Protection of Marine Environment from Land Based Activities (GPA)(1995), the World Summit on Sustainable Development (WSSD) and its Johannesburg Plan of Implementation (2002), and the Millennium Development Goals (2000) especially the National Poverty Reduction Strategies;

**Appreciating** the progress that has been made towards sustainable development and environmental protection of the Guinea Current ecosystem through the actions taken during the pilot phase of the project;
**Welcoming** the international support to regional initiatives and the joint-commitments to cooperate in facilitating integrated management of the GCLME, its littoral and estuarine

areas and sustainable use of their resources through the development of the Guinea Current Large Marine Ecosystem (GCLME) Programme;

**Recognizing** the unique character of the Guinea Current Large Marine Ecosystem as one of the world's most productive marine areas, rich in fishery resources, and an important reservoir of marine biological diversity, which make a major contribution to livelihood and employment and are a veritable source of goods and services for economic growth;

**Welcoming** also the national and regional initiatives taken to ratify or accede to international Conventions to protect and manage the GCLME and its littoral areas and estuaries sustainably, including the efforts towards the domestication and implementation of the Declaration of the United Nations Conference on the Human Environment (Stockholm, 1972), African Convention on Conservation of Nature and Natural Resources (Algiers 1968), Convention on Wetlands (Ramsar, 1971), Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matter (1972), International Convention for the Prevention of Pollution from ships (MARPOL 73/78), Convention on Migratory Species (Bonn 1979), the Abidjan Convention on Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and Protocol concerning Cooperation in Combating Pollution in Cases of Emergency (1981), Convention on the control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Basel Convention 1989), Article 39 of the Lome' IV Convention relating to the international movement of hazardous wastes and radioactive wastes (1989), International Convention on Oil Pollution Preparedness, Response, and Cooperation (OPRC 90), Convention on Fisheries Cooperation among African States Bordering the Atlantic Ocean (1991), Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous wastes within Africa (Bamako 1991) which allow for the establishment of regional agreements which may be equal to or stronger than its own provisions, the Convention on Biological Diversity (1992), the United Nations Framework Convention on Climate Change (1992), the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities (1995), Convention on Degradation by Persistent Organic Pollutants (POPs) (2001), the United Nations Agreement on Straddling and Highly Migratory Fish Stocks (1995), the FAO Code of Conduct for Responsible Fisheries (1995); as well as other Conventions in the Guinea current region.

**Conscious** of the importance of the initiatives taken by non-governmental organizations towards conservation of coastal and marine resources and protection of the environment of the GCLME;

**Aware** and concerned about the fragmented nature of regional management and the urgent need to support and jointly engage member countries in the coordination for integrated management and sustainability of living marine resources of the Guinea Current ecosystem;
**Committed** to take concrete actions individually and collectively, at national and regional levels, to ensure transboundary cooperation for the integrated management, protection and sustainability of the living resources of the GCLME;

**Conscious** and concerned about capacity strengthening for sustainable development at national and regional levels;

**Acknowledging** the significant contribution made through the preparation of the Transboundary Diagnostic Analysis (TDA) in the development of the Strategic Action Programme (SAP) and towards integrating the information necessary for policy planning in the GCLME:

**DO HEREBY:**

1. **AGREE ON THE PRINCIPLES, CRITERIA AND INDICATORS OF THE STRATEGIC ACTION PROGRAMME DEFINED HEREIN**

2. **ADOPT AND SIGN THE PRESENT STRATEGIC ACTION PROGRAMME**

**THE MINISTERS OF THE INTERIM GUINEA CURRENT COMMISSION (LATER GUINEA CURRENT COMMISSION)**

**signed:**

**On behalf of the Republic of Angola:**

……. Signature date : ……

……. Signature date : ……

**On behalf of the Republic of Benin:**

……. Signature date : ……

**On behalf of the Republic of Cameroon:**

……. Signature date : ……

**On behalf of the Republic of Congo:**

……. Signature date : ……

**On behalf of the Republic of Côte d'ivoire:**

……. Signature date : ……

**On behalf of the Democratic Republic of Congo:**

……. Signature date : ……

**On behalf of the Republic of Equatorial Guinea:**

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**On behalf of the Republic of Gabon:**

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**On behalf of the Republic of Ghana:**

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**On behalf of the Republic of Guinea:**

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**On behalf of the Republic of Liberia:**

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**On behalf of the Republic of Nigeria:**

……. Signature date : ……

**On behalf of the Republic of Guinea Bissau:**

……. Signature date : ……

**On behalf of the Republic of Sao Tome & Principe:**

……. Signature date : ……

**On behalf of the Republic of Sierra Leone:**

……. Signature date : ……

**On behalf of the Togolese Republic:**

……. Signature date : ……

# 1 THE CHALLENGE

## 1.1 Sustainable Integrated Management of the Guinea Current Large Marine Ecosystem

The Guinea Current Large Marine Ecosystem (GCLME) is ranked among the five most productive LMEs in the world today in terms of biomass yields. It has rich fishery resources, oil and gas reserves, precious minerals, a high potential for tourism and serves as an important reservoir of marine biological diversity of global significance which make a major contribution to livelihood and employment of the people of countries bordering the GCLME and a veritable source of goods and services for economic growth. The GCLME provides habitat for a number of threatened and endangered species and its coastal wetlands are visited by millions of migratory birds annually. Additionally, the region has some of the world's most significant mangrove stands. The vast and well developed mangrove forests located along the coasts of Guinea, Guinea Bissau, Sierra Leone and in the Niger delta of Nigeria are among the most biologically and socio-economically significant coastal ecosystems. The Guinea Current LME provides a distinct economic and food security source, with its coastal and offshore waters and associated near shore watersheds. In a study initiated by the GCLME Project (2007) on the socioeconomic valuation of the goods and services in the GCLME region, it has been found that using the Direct Output Impact (DOI) methodology to estimate the goods that could be obtained in the GCLME annually namely, marine fisheries, offshore oil production, Non Timber Forest Products (NTFP), and mining (sand, salt, granite and phosphate), the total value of the output from these sectors, based on available data, was over US$50billion. The 16 countries bordering the GCLME are heavily dependent on the coastal and marine environment for their socioeconomic development.

Whereas the GCLME's rich natural resources enhanced the region's potential for socioeconomic development, it is held back, in part, by low human capacity that stems from high population growth rates, low literacy levels, malnutrition and the prevalence of diseases, as well as by political instability and conflicts. Some of the GCLME countries are among the poorest countries in the world, and although there are disparities in Gross Domestic Product (GDP) among them, they do not indicate significant variation in levels of development. With the exception of Gabon, Equatorial Guinea, Ghana, Cameroon, and Congo (Brazzaville), which are ranked among the states with Medium Human Development, the others are classified as having Low Human Development. The economy of the region is overwhelmingly characterized by poverty inspite of improvements in economic growth over the years.

Approximately 40 percent of the region's 300 million people (more than half of the population of the African continent) live in the coastal areas, many of whom are dependent on the lagoons, estuaries, creeks, and coastal waters for their sustenance and general well being. Many of the region's poor are crowded in the coastal areas and are engaged in subsistence socio-economic activities such as fishing, farming, sand mining and production of charcoal in the mangrove areas. The rapid population growth in the coastal areas has resulted in dislocation of social values and cultures,

socio-economic conflicts, and serious environmental degradation. Widespread poverty persists in part due to environmental degradation, and socio-economic and socio-political issues.

Each of the coastal countries has an interest in the sustainable management of the coastal resource. However, such systems including their upstream freshwater basins are at present affected by a number of anthropogenic activities: industrial effluent discharges, agricultural run-offs, urban and domestic sewage, mining activities and oil and gas production. In the Guinea Current Large Marine Ecosystem, depletion of living resources, uncertainty in ecosystem status including climate change effects, deterioration in water quality, loss of habitats and coastal erosion have been identified as significant transboundary environmental problems.

The sixteen coastal countries bordering the Guinea Current LME face colossal problems of living resource depletion and coastal degradation. Though having different socio-economic conditions and being on different development paths, the countries recognize the transboundary nature of these threats to their economic well being and the need to address them through cooperative assessments and joint actions. Indeed the success of the 6 countries pilot phase project was predicated on the Large Marine Ecosystem approach, which recognizes that pollutants and living resources in the marine environment do not respect political boundaries. This strengthened the resolve of the six Ministers of the original Gulf of Guinea Project to add ten more countries to the initiative to manage and sustain in a large scale, holistic, and collaborative manner, the marine resources of the entire Guinea Current Large Marine Ecosystem.

Several decades of over-exploitation and habitat degradation in the Guinea Current LME have left a legacy of fragmented and sector-based management due in part to a history of colonial rule. This has resulted in an absence of coordinated planning and integration, poor legal frameworks, weak enforcement and implementation of existing regulatory instruments, inadequate public involvement, varied regional capacity development and poor financial mechanisms of support.

The real challenge is to develop systems and structures to address the naturally highly-variable and potentially fragile nature of the GCLME and its coastal environment to reverse declines of fish stocks and non-optimal harvesting of living resources; loss of ecosystem integrity arising from changes in community composition; threats to vulnerable species and biodiversity; introduction of invasive alien species, deterioration in water quality from land and sea-based activities; harmful algal blooms; habitat destruction and alteration including modification of sea bed and coastal zone; coastal degradation, and coastline erosion. These transboundary environmental problems can be mitigated through cooperative, LME-wide, actions that manage the complex ecosystem on an integrated and sustainable basis. An Overview of the priority problems indicates the following;

1.1.1. The overexploitation of the commercial fish stocks and non-optimal utilization of some living resources of the Guinea Current Large Marine Ecosystem continue to be a cause of concern. Maritime boundaries do not coincide with ecosystem boundaries and some of the region's most important harvested

resources are shared between countries and straddle geopolitical boundaries. Over-harvesting of a species in one country therefore leads to depletion of that species in another, and changes to the ecosystem as a whole. Many resource management problems are transboundary in nature and require collective action by the Member Countries to address them meaningfully.

1.1.2. The environment of the Guinea Current Large Marine Ecosystem is highly variable, and as such the status and yield of the ecosystem as a whole are poorly understood. Although the ecosystem is naturally adapted to change including periodic variability in coastal upwelling intensities, sustained large-scale environmental events such as El Nino Southern Oscillation (ENSO), flooding and algal blooms, Benguela and Canary current intrusions and changes in winds affect the GCLME as a whole, with impacts on the fisheries which presently are poorly known. The inability to predict these events and changes limits the capacity to manage the ecosystem effectively.

1.1.3. Deterioration in water quality arising from municipal, industrial and agricultural pollution poses a significant threat to the Guinea Current Large Marine Ecosystem at local, national, and regional levels. Most impacts of chronic and catastrophic deterioration are both localized and common to all of the GCLME countries. This deterioration will increase as coastal populations increase, and only collective action can address this issue. Moreover, chronic pollution can favour the explosion of less desirable opportunistic species and result in species migration. Catastrophic events such as major oil spills and maritime accidents can have transboundary consequences requiring cooperative management, including the sharing of equipment, knowledge and manpower.

1.1.4. Habitat destruction, and the alteration and degradation of the GCLME sea bed and coastal areas are taking place at increasing and alarming rates. Most impacts appear localized, but alteration or loss due to over fishing, coastline erosion, subsidence, mining and oil and gas production can cause migration of fauna and system-wide ecosystem change. There exist uncertainties about the regional cumulative impact on benthos resulting from coastal erosion, mining and associated sediment re-mobilization. Some activities occur close to national boundaries, with negative consequences translating into transboundary impacts.

1.1.5. Increased loss of biotic integrity such as changes in community composition, vulnerable species, and the introduction of invasive alien species, threaten the biodiversity of the Guinea Current LME as a whole. Over-exploitation of targeted fish species has altered the ecosystem causing impacts at all trophic levels including top predators. Some species such as marine turtles are threatened or endangered. Large scale fluctuations in the abundance of Sardinella trigger fish and the bivalve Chlamys opercularis have been reported. The bivalve is suspected to have been introduced into the region through ship ballast water. Inadequate knowledge of the ecosystem status and lack of regional coordination hinder effective management on both the national and regional levels.

1.1.6. There is inadequate and limited institutional, infrastructural and human capacity at all levels to assess the status of the GCLME and to collaborate in assessing the shared resources and other transboundary components and their variability. More importantly, there are differing levels of development and unequal distribution of capacity among the countries.

1.1.7. In the past two decades, there have been reported cases of increased incidence of aquatic weeds and harmful algal blooms in the coastal waters of several countries bordering on the GCLME. This is attributed to high nutrient loading, pollution of near shore waters and invasion by alien species. It is difficult to estimate the cost of these impacts on fisheries activities and biodiversity. Although the issues of eutrophication, invasive aquatic weeds, and harmful algal blooms are topmost priorities for most governments in the region, little progress has been recorded in these efforts due to the lack of a transboundary and multi-sectoral approach, which is required to address this problem effectively.

1.1.8. The most recent GEF4 Replenishment Policy for the International Waters (IW) focal area places a major focus on the control of nutrient over-enrichment and oxygen depletion, and the protection of the marine environment from land-based pollution of coastal waters in large marine ecosystems. The GEF operational strategy for 2007-2010 will include additional funding for controlling excessive phosphate and nitrate inputs to LMEs. The Guinea Current LME Project, under the GEF Foundation Project strategy, can be eligible for funding the amounts commensurate with the challenges for recovering depleted fish stocks and restoring damaged coastal habitats. On this basis Member Countries shall be encouraged to participate in GEF Biodiversity projects focused on the designation of Marine Protected Areas as a means to conserve biodiversity, including fish and fisheries.

1.1.9. The restoration of the degraded GCLME requires effective legal regimes. Currently, most countries lack an effective and efficient legal framework; in some cases the countries lack the relevant legislation or regulations and in almost all cases the legislation and regulations are poorly enforced. This has negatively affected environmental management efforts and plans in the 16 states. There is need for the GCLME programme to achieve a sound legal regime through effective legislation and enforcement.

1.1.10. There is weak economic valuation practice in the GCLME countries. Although economic activities, for example, agriculture, tourism and fishing, in these countries depend on natural ecosystems to provide fertile soils for crop production, lush vegetation and wildlife to attract tourists, clean water and healthy mangrove swamps to sustain inland and off-shore fisheries and healthy forest for the production of timber, fuel wood and other commodities, their contribution to national economies are often not known or accounted for in the national accounts. This undermines the benefits from these ecosystems and subsequently little or no incentive for their conservation. However, estimating the economic value of the benefits provided by the GCLME natural ecosystems can provide a much more accurate sense of the importance of those ecosystems to the economy.

1.1.11. Developing countries and especially the low-income countries (LDCs) in the GCLME Region are among the tropical countries predicted to suffer most and soonest from climate change. They are especially vulnerable because of their economic and social sensitivity to climate change in an already fragile environment. The ultimate response for such countries is adaptation to climate variations and to extreme meteorological phenomena as an excellent way to develop long-term adaptation capacities. The National Adaptation Programme of Action (NAPA) offers an opportunity to take action on some of the causes of vulnerability and to undertake activities aimed at meeting the needs in this area. Such activities could include measures to reduce the adverse effects of climate change and implement forecasting policies enabling reaction to future disasters. Priority activities proposed in this context should be those whose further delay in implementation could increase vulnerability or lead to increased cost at a later stage.

# 2 THE RATIONALE FOR COOPERATIVE ACTION

Pursuant to the Accra Ministerial Declaration (10 July 1998) by the Environment Ministers of the 6 "Pilot Phase" countries which endorsed a regional approach to the environmentally sustainable development of the coastal and marine environment of the Gulf of Guinea; and the Decision II of the Brazzaville Declaration (26 May 2006) of the African Ministerial Conference on Environment, which calls on African Governments to support the LME Projects in Africa as tools for the revitalization and the successful implementation of the Abidjan Convention (1981); to the Abuja Ministerial Declaration of 22 September 2006, which called for regional cooperation by the sixteen countries bordering the GCLME, and creation of a technical Secretariat to serve as an organization entitled the Interim Guinea Current Commission (IGCC), and later the GCC. This regional body is consistent with the terms of the United Nations Convention on the Law of the Sea (UNCLOS), and will operate within the framework of the Abidjan Convention.

## 2.1 Applicable Principles:

The commitment for joint action by Member countries in the GCLME Region is predicated on the following applicable principles:

(a) The concept of integrated sustainable development shall be applied to restore the integrity, health and sustainability of the GCLME and reinvigorate its capacity for use and enjoyment for present and future generations.

(b) The precautionary principle shall be applied wherever appropriate as a preventive measure to forestall any potential deleterious effects on living resources, hazards to human health, hindrance to marine activities, reduction of amenities and impairment of other legitimate uses of the GCLME even when there is no established and conclusive evidence of a causal relationship between the action and the effects, recognizing that greater caution is required when information is unavailable, unreliable or inadequate for meaningful inference.

(c) Other anticipatory and cooperative actions, such as regional contingency planning, environmental impact assessment, Integrated Coastal Area and River Basin Management (ICARM), strategic environmental assessment involving the conservation of living marine resources and biodiversity, the establishment of marine protected areas, the transboundary assessment of the environmental consequences of government programmes, policies and plans shall be taken.

(d) The application of cleaner technologies which ensures best practices by replacement or phasing-out of obsolete high-waste and waste-generating technologies that are in use shall be vigorously pursued and encouraged.

(e) The use of multilateral economic and policy instruments that promote integrated sustainable development shall be strengthened through the implementation of

economic incentives for transfer of environmentally friendly technologies, practices and applications; through the introduction and enforcement of user fees and the polluter pays principle; as well as periodic environmental and natural resources auditing.

(f) Mandatory environmental, ecosystem and human health considerations shall be included and required for all relevant policies and sectoral plans, particularly those regarding marine industrial development, fisheries, mariculture and marine transportation.

(g) Voluntary cooperation and strong political commitment will be encouraged, to solve transboundary issues, and promote joint activities.

(h) The full involvement and active participation of the private sector as stakeholders shall be encouraged and advanced as integral to the successful implementation of the SAP.

(i) All 16 states of the GCLME will be encouraged to collaborate, establish linkages, and network with the other states for their mutual benefits.

(j) Accountability, public transparency, and public involvement and cooperation are GCLME values to be promoted through wide dissemination of information, in order to enhance the integrated and sustainable management of the LME region.

## 2.2 Institutional Arrangement

(a) In order to implement the actions and policies agreed upon, existing regional mechanisms for cooperation such as the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention) and its related Protocols will be revitalized and retooled to ensure the necessary coordination and capacity building, and promote the sustainable and integrated management of the GCLME. The Member countries of the Interim Commission will actively mobilize resources and co-financing with interested stakeholders, industry, partners and donor agencies.

(b) To sustain regional cooperation, the Interim Guinea Current Commission (and later the Guinea Current Commission) will consist of the following three key organs whose structure and functions are further elaborated in Annex I:

i) The Council of Ministers
ii) The Steering Committee
iii) The Executive Secretariat

(c) The Council of Ministers, consisting of all the Ministers of the member countries in the Interim Guinea Current Commission (later the Guinea Current Commission) will *inter alia*:

i) Supervise the implementation of this Strategic Action Programme;
ii) Establish such bodies as required to support activities and processes related to its implementation;

iii) Mandate or delegate any other organ of the Commission to carry out specific tasks.

(d) The Steering Committee comprising high level government representatives (not below the rank of Director) will, under the supervision of the Council of Ministers:

i) Provide guidance, monitor and evaluate the implementation of the SAP
ii) Monitor and evaluate the status and functions of the Advisory Groups/Activity Centers and;
iii) Consider the establishment of specific groups for the purpose of implementing this SAP

(e) Headed by an Executive Secretary, the IGCC (later the GCC) Executive Secretariat will perform all such tasks as delegated by the Council of Ministers and in particular:

i) Co-ordinate and administer the Commission's activity including work schedule, contract preparations, financial management, auditing and preparation of annual reviews;
ii) Assume responsibility for the operation and maintenance of an electronic communication system for the purposes of facilitating interactions between the components of the GCLME institutional network;
iii) Liaise with Activity Centres / Centres of Excellence to provide information on bibliography, data sources, status of the ecosystem, environmental variability, assessment and monitoring activities;
iv) Organize at least once a year, scientific conference based on the results of work programme and assessment of the status of the GCLME.
v) Report on the progress on SAP implementation to the Council of Ministers and Steering Committee at their yearly meeting.

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(f) The IGCC (and later the GCC) will be supported by the following Advisory Groups located and coordinated at Activity Centres/Centre of Excellence in Member Countries (Annex II):

i) Advisory Group on Fisheries and other Living Marine Resources
ii) Advisory Group on Environmental Information and Management Services
iii) Advisory Group on Marine Productivity and Biodiversity;
iv) Advisory Group on Pollution Management
v) Advisory Group on Risk Assessment and Early Warning System
vi) Advisory Group on Oil Spill Contingency and Emergency Response

## 2.3 Legal Framework

The IGCC (later the GCC) will encourage and support member countries to ensure an effective legal framework for the sound management of the GCLME through:

a. The Ratification of existing international and regional conventions relevant for the protection, management and sustainability of the GCLME.
b. The Adoption and ratification of new conventions and protocols as necessary.
c. The Incorporation of conventions into domestic law and provide legal enforcement mechanisms and structures for their effectiveness, and
d. Where possible the harmonization of legislation and enforcement mechanisms.

The IGCC (and later GCC) shall put in place adequate mechanisms for the settlement of disputes arising from the GCLME programme. Where possible the GCC may refer parties to existing dispute resolution mechanisms and structures.

The boundaries of the GCLME for the purpose of this SAP are as follows:

a. Geographically, the GCLME extends from approximately 12 degrees north to 16 degrees south latitude and variously from 20 degrees west to 12 degrees east longitude.
b. Oceanographically, the GCLME extends in the North-South direction from the intense upwelling area of the Guinea Current south to the northern seasonal limit of the Benguela Current. In the East-West direction includes the drainage basins of the major rivers seaward to the Guinea Current front delimiting the Guinea Current from the open ocean waters.

Without prejudice to the preceding paragraph, the GCLME area includes the Exclusive Economic Zones (EEZ) and coastal habitats of the sixteen countries and such areas outside national jurisdiction that fall within the boundaries above.

## 2.4 Linkages, Collaboration and Expanded Cooperation

The Member countries have a history of cooperation both at the economic and environmental spheres such as the Economic Community of West African States (ECOWAS), CEMAC, South African Development and Economic Community (SADEC), etc.

The Steering Committee and IGCC (later GCC) and Member countries shall individually and jointly promote the following:

(a) Effective co-ordination between sub-regional and regional bodies and initiatives such as Fisheries Committee for the Eastern Central Atlantic (CECAF); Regional Fisheries Committee for the Gulf of Guinea (COREP); Forestry Commission of Central Africa (COMIFAC); Programme for Integrated Management of Marine and Coastal Resources (GIRMac); Regional Programme for the Conservation of the Coastal and Marine zones of West Africa (PRCM); and New Partnership for Africa's Development (NEPAD); and NGOs and CBOs which contribute towards the integrated management, sustainable

development and rational utilization of the living marine resources and protection of the Guinea Current Large Marine Ecosystem. The IGCC will develop institutional relationships with NEPAD and encourage collaboration with other NEPAD environmental initiatives and international projects.

(b) Co-operation with partners, donors, stakeholders including bilateral and multi-lateral financial institutions, aid agencies, the private sector and interested foundations with the aim of securing funding for projects and policies identified in this SAP document.

(c) Cooperation with relevant international organizations including United Nations Agencies and international organizations in implementing this SAP.

(d) Cooperation with other Large Marine Ecosystem programmmes such as Benguela Current LME Programme and Canary Current LME Programme that share similar attributes and are also involved in collaboration and regional cooperation.

# 3 POLICY, CROSS CUTTING AND INVESTMENT RELATED ACTIONS

## 3.1 Policy Actions

### 3.1.1 Management and Sustainable Utilization of Marine Living Resources

The living marine resources of the GCLME are utilized by industrial and artisanal fisheries for providing livelihood and employment for hundreds of thousands of fishermen and earn foreign exchange for the participating countries. The resources are both locally important resident stocks supporting artisanal fisheries and transboundary migratory stocks that have attracted large industrial offshore foreign fishing fleets that create additional stress on the fishery resources. A number of countries also negotiate fishing rights agreements with coastal countries. There is little capacity in the nations of the region to effectively monitor and enforce those agreements. It is believed that some of the fish caught in the region by the distant water fleets are imported to the region. The countries are also net importers of fish and fish products. Declines in catch per unit effort (CPUE) indicate that catch is exceeding sustainable yields in some resources while species diversity and average body lengths of the most important fish assemblages have declined. These declines have in turn led to unsustainable destructive fishing methods such as blasting and use of very small mesh nets. Again the magnitude of the declines is indicative of over fishing.

The most significant changes in the abundance of fish species in the GCLME are fluctuations in *Sardinella* species, and a dramatic increase and decline in the abundance of trigger fish (*Balistes capriscus*). In contrast, there are species that are not optimally exploited due to lack of information and technology. In order to rebuild the depleted stocks and to repair the damage done by over harvesting and at the same time provide opportunities for livelihood and food security in the region, the governments have committed themselves to agree on the development of integrated management for sustainable utilization of living marine resources through the following suite of policy actions which address priority transboundary issues:

**(a) Regional Fish Stock and Ecosystem Assessments:**
A regional structure will be established to conduct transboundary fish stock and ecosystem assessments including environmental changes manifesting a periodic variability in coastal upwelling intensities and their effects/role in fluctuations of coastal pelagic fish abundance. The implementation of this transboundary structure will involve the national focal institutions in all the Member Countries.

**(b) Joint fish and productivity surveys and assessments**

Joint surveys and assessment of shared stocks of key species and productivity indices have been undertaken co-operatively since 2004, with additional effort envisaged over a three year period of the current project, as a pre-requisite to understanding the status of the fisheries and demonstration of the benefits to the individual states of joint transboundary fisheries assessments. The goal of this collaboration will be the gathering of baseline data, comparison and validation of survey and assessment methodology. The Fisheries Activity Centre shall be fully involved in this process along with national focal institutions and will provide a basis for regional recommendations on shared stocks.

**(c) Regional harmonization of policies**

The IGCC (later the GCC) shall promote the harmonization of policies and the legal framework for fisheries legislation and fisheries management plans. It shall promote regional cooperation and build capacities of Member Countries in negotiating joint fisheries partnership agreements for the mutual benefit of the region.

**(d) Assessment of non-target resources**

The IGCC will ensure joint surveys for assessment of non-target species both inshore and offshore which are common to two or more countries to encourage their optimal utilization. This will involve the gathering and validation of baseline information on these species, and the assessment of any future exploitation on the ecosystem. The national focal institutions, regulatory agencies and the Activity Centres for fisheries and Productivity will collaborate in these activities.

**(e) Regional mariculture policy**

Mariculture has attracted considerable interest from policy makers as having the potential to provide alternative sources to supplement fish food from wild harvest, thus contributing to the national and regional economy in addition to improving the living conditions of coastal fisher communities. There is considerable potential for the expansion of mariculture regionally, especially targeting such favored species as shrimps, tilapia, mullet and catfish. The political interest will certainly cause mariculture efforts to increase. However, it is essential to properly understand the negative impacts of premature development. The IGCC shall promote a policy framework to assure proper development of mariculture and harmonize national policies of Member Countries to ensure positive economic and environmental impacts.

**(f) Regional economic valuation**

In order to achieve the objectives of recovering and sustaining depleted fisheries; restoring degraded habitats; and reducing land and ship-based pollution, it will be important to understand the total value of the ecosystem's contribution to the society. Economic valuation would help to demonstrate and quantify its economic value in terms of raw materials, protection of natural and human systems, and maintenance of options for future economic

production and growth, as well as the costs associated with the loss of these benefits through resource degradation. In addition, it will be important to know the value/effect of the impact of different management approaches; the change in the value of the ecosystem if conservation action is undertaken, including opportunity cost of conservation; how the change will affect different stakeholders (that is who are the beneficiaries and the losers); and how beneficiaries could be made to pay for the services they receive to ensure that the GCLME is conserved and its services sustained.

In this regard, the IGCC and later the GCC will promote and facilitate the economic valuation of goods and services of the GCLME. It shall ensure the development of common valuation methodology to be used by countries in the GCLME. Countries will be encouraged to institute and implement economic valuation practice in the management of natural resources and damage assessment especially in the marine area.

Furthermore, joint assessment and evaluation of socio-economic consequences of various harvesting methods, the improved utilization of living coastal and marine resources and the economic value of the GCLME as a veritable ecosystem and assessment for joint management / co-management will be undertaken. This is with a view to appropriate intervention within the framework of improving sustainable ecosystem utilization and management for regional and global benefits. This activity will be coordinated by the IGCC.

**(g) Environmental Accounting**

To facilitate the conservation of the GCLME, the inclusion of ecosystem value estimates in national accounting is imperative. Although some of the countries already include environmental account issues as satellite accounts in their national accounts, it is important to integrate environmental accounts in the national accounts especially as most of the GCLME countries have their economies largely dependent on natural resources from the GCLME areas for their survival. Therefore, the IGCC and later the GCC shall initiate the environmental accounting process and ensure that GCLME countries incorporate environmental accounting frameworks in their national accounts.

**(h) Conservation measures**

The IGCC will encourage the creation of Marine Protected Areas (MPAs) and implementation of national policies on designated protected areas and other conservation measures. These will also be harmonized within the region for common achievable goals.

**(i) FAO Code of Conduct for Responsible Fisheries (CCFR)**

The Member Countries of the GCLME commit themselves to compliance with the FAO Code of Conduct for Responsible Fisheries and its national enforcement in each of their territorial waters.

**(j) Monitoring Control and Surveillance**

The IGCC (later the GCC) shall strengthen regional monitoring, control and surveillance in the GCLME region and the reporting system for cases of illegal, unreported and unregulated fishing in the region in order to eliminate the depletion of the fish stocks and huge economic losses caused by this illegal practice including trans-shipment. The IGCC shall further coordinate and facilitate action by the member countries to engage in dialogue with partner organizations or countries associated with these illegal practices.

**(k) Physical Alteration and Destruction of Habitats (PADH)**

The types of Physical Alteration and Destruction of Habitats common in the region are those associated with shoreline, inter-tidal and sub-tidal, mineral exploitation, and sediment extraction, oil and gas production, brackish waters and coastal watershed alterations. The least common is biological alteration, which includes accidental or deliberate introduction of alien invasive species.

The immediate causes of PADH in the region include improper and unplanned construction along the coast; uncontrolled mangrove cutting and conversion for agricultural purposes; coastal sand and gravel mining; salt extraction; port and harbor construction; oil and gas exploration and production; deforestation and removal of vegetation cover and sedimentation / siltation processes. The IGCC will promote ICARM, which is a comprehensive integrated framework for policy, coordinated planning and holistic and multi-sector programme and development management in the coastal areas. This will emphasize the involvement of all stakeholders (public and private) and community support to sustain the functional integrity of coastal resource systems that generate goods and services for human welfare.

**(l) Ocean governance**

In order to ensure sustainable management and financing of the GCLME, the IGCC and later the GCC will promote and facilitate the evolving of innovative governance mechanisms and institutional framework. Participatory management arrangements, for example, joint management initiatives will be explored.

### 3.1.2 Management of Minerals and Extractive Resources

Oil, gas and mineral exploration are expanding throughout the GCLME. Already Angola, Benin, Cameroon, Congo DRC, Congo, Côte d'ivoire, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sierra Leone, and Sao Tome and Principe have deposits and proven reserves that are exploited or will eventually be exploited. The region is endowed in other extractive resources such as Iron and Steel, Bauxite, Aluminum, Phosphate, Gold, etc. These developments call for increased attention to be placed on environmental awareness and protection and sustainable development. The main objective of management at national and regional

level is to minimize environmental impacts and to identify negative impacts on the environment including socio-economic issues.

In order to further the aims and objectives of responsible multi-sectoral utilization of the GCLME and to mitigate any negative impacts on the ecosystem of mining, drilling activities and oil and gas production, the following policy actions will be undertaken.

**(a) Regional consultation framework**

The IGCC shall develop a regional framework for enhanced consultation, with the objective of reducing and controlling the negative impacts of mining and oil and gas exploration, exploitation and production, in an effort to reduce inter-sectoral conflicts and maximize socio-economic benefits. The IGCC shall also develop, through a broad-based participation of the public and private sectors, a code of conduct for responsible mining of extractive resources including actions for remediation and rehabilitation and restoration of affected areas.

**(b) Harmonization of policy**

The governments of the region will collaborate to harmonize mining and oil and gas exploration and production policies relating to shared resources (such as exemplified by Nigeria-Sao Tome and Principe Joint Development Zone), cumulative environmental impacts and their mitigation including those relating to safe environmentally friendly and efficient decommissioning and abandonment program.

**(c) Strategic environmental assessment**

Impacts assessment of the cumulative effects of mining of extractive resources including oil and gas exploration and production activities on the GCLME will be undertaken in collaboration with industry and interested stakeholders with a view to mitigating and minimizing physical alteration, destruction or degradation of habitats. This will include explicit integration of social and economic indicators and analyses with all other scientific assessments, to assure that prospective management measures are both scientifically credible and cost-effective with regard to the use of ecosystem goods and services.

**(d) Co-ordination of interventions relating to offshore exploration and production of oil and gas.**

The IGCC will promote environmental policies and in particular, those relating to Environmental Impact Assessment, for prediction and mitigation of negative impacts of oil and gas exploration and production on the ecosystem in order to ensure their environmental sustainability.

### 3.1.3 Effective Assessment of Environmental Variability, Ecosystem Impacts and Development of Early Warning System for Ecosystem Change.

Coastal upwelling occurs seasonally along the northern and eastern coasts of the Gulf of Guinea. Unlike the eastern boundary upwelling systems in other parts of the world, the most remarkable characteristic of the GCLME upwelling is the absence of correlation between local wind stress and coastal temperature especially during the boreal summer season. The seasonal shoaling of the thermocline is partly induced by Kelvin waves or remote forcing that is supported by numerical models and data analyses and probably modified by local forcing mechanisms. In addition, environmental changes manifesting a periodic variability in coastal upwelling intensities play a role in coastal pelagic fish abundance fluctuations. For instance, the east and west flows and position of the Guinea current may contribute to these population fluctuations. Shifts in biomass also appear to be connected to a shift in the boundary of the Guinea current. These alterations have been linked to oceanographic changes including the southward displacement of the Intertropical Convergence Zone (ITCZ) during Atlantic El Niño's. Human activities are further superimposed on this inherent natural variability. There is fragmentary but important evidence of increasing instability and variability as well as considerable uncertainty regarding ecosystem status, integrity and yields. Inadequate knowledge and poor information on ecosystem status and lack of regional coordination in studies of biodiversity, habitats and ecotones hinder effective management on the national and regional levels.

In order to assess environmental variability, ecosystem impacts and improve predictability in support of sustainable integrated management of the GCLME, the following policy actions are agreed to:

**(a) Development of environmental early warning system**

A cost effective regional early warning system for monitoring major environmental events within the GCLME will be developed. This will include linkage of existing national environmental monitoring systems, when they exist and cross-linking with suitable international monitoring systems for relevant data and information on the state of the environment. Participation of Member Countries in international ocean monitoring activities of UNESCO-IOC and particularly ODINAFRICA, GOOS and GEOSS, will be encouraged as well as collaboration with IMO on oil pollution and disaster contingency planning. Information on the state of the environment which is vital for improved environmental assessment and networking will be incorporated into the various decision- making support systems that underpin living marine resource, coastal area and pollution management. An Activity Centre will coordinate the development of the Early Warning System, its application and requisite networking and dissemination of information to permit socioeconomic benefits in the Member Countries and region at large.

**(b) Environmental baseline establishment**

Analysis of past data series and available material archives will be jointly undertaken by national focal institutions to ascertain and provide a baseline against which to measure future ecosystem transboundary variability and changes, especially decadal changes and to ascertain the extent and trends in variability (inter and intra annual) in the 20th century. This exercise will be facilitated by the IGCC (and later the GCC).

**(c) Enhancing predictability of extreme events**

Analysis and reassessment of past data and information, wherever available, augmented with new information will be undertaken to determine the source and large-scale impact on the GCLME of variations in sea surface temperature and anomalies, dissolved oxygen levels, productivity, precipitation and precipitation cycles, tropical storms depression, thermal fields as well as other extreme episodes of inter annual variability, with a view to improving predictability of their occurrence, extent and ecosystem consequences. The improved predictability of major transboundary perturbations will complement resource assessment, modeling, resource and coastal area management and marine pollution contingency planning. It shall be used to enhance forecasting of regional rainfall which largely determine the seasons and hence provide better forestry and agricultural planning.

**(d) Harmful Algal Blooms (HABs)**

A regional HAB monitoring and reporting network will be developed with a view to its implementation. This will also include a regional plan for assessing the transboundary effects of HABs. Data on HABs will be a valuable input for the sustainable development of mariculture. International collaboration will be promoted with UNESCO-IOC HAB programme, in particular for data requirements for a plan for regional mariculture policy harmonization.

**(e) Global climate change.**

The natural climate system and human systems interact in complex and increasingly numerous ways. The world oceans play a key role in the climate system on both long and short term scales through their absorption and transport of heat and carbon. Understanding the ocean's role in the climate system is pertinent to understanding and predicting sea level rise, ocean acidification, coupled modes of climate variability on interannual to decadal time scales such as El Nino, the possibility of abrupt climate changes, and the strength and frequency of tropical cyclones. Climate variability and change also will have impacts on the oceans through interactions with ocean ecosystems, biodiversity and fisheries – a resource that currently provides food for 3.5 billion people.

The GCLME is believed to play a significant role in global ocean and climate processes and is an important site for the early detection of global climate

change. Sustained large scale environmental events such as ENSO, flooding, algal blooms, Benguela and Canary current intrusions and changes in winds and local reversal of currents affect the ecosystem as a whole. These events and changes generally have their origin and cause outside of the GCLME and propagate across external GCLME and internal geopolitical boundaries. Impacts on ecosystems, agriculture, water supplies, coastal areas and human health from climate variability are expected to grow. The inability to predict events and changes limits the capacity to manage effectively system wide. Addressing the threats faced by ecosystems and human society requires regional and international policy cooperation and a strong research effort to underpin policy directions. The IGCC (and later GCC) will promote collaboration with the international community to assess the potential impacts of climate processes, adjustments and adaptive responses imperative for the GCLME region, and the protection of its goods and services.

Data from initial national communications submitted by African countries under the climate change Convention and most of the V&A assessments by UNEP, IPCC, UNDP, UNIDO, and the World Bank clearly show that Africa is one of the most vulnerable continents to climate change and climate variability. Floods and droughts, which have caused major disruptions in the economies of many West and Central African countries, continue to aggravate the vulnerability in the GCLME region.

Vulnerability and adaptive capacity requires greater research and attention. Member countries will be encouraged to formulate National Action Plan for Adaptation (NAPA). It is a necessity to twin adaptive capacity and development for Africa in general and GCLME countries in particular, to enhance resilience to such multifarious changes. A range of factors including wealth, technology, education, information, skill, and infrastructure, access to resources and management capabilities and political will may enhance adaptive capacity to climate change.

Therefore, in addition to developing a project on adaptation to expected impacts of climate change for consideration by GEF, a parallel yet complementary project will be designed to specifically address adaptation issues relevant to this SAP.

### 3.1.4 Assessment, reduction and control of pollution

Coastal industrial development and intense rate of urbanization of coastal cities much of which are poorly planned or unplanned have created pollution “hot spots” in most of the GCLME countries with resultant deterioration in surface and ground water quality. The industrial areas are predominantly sited in major catchments that drain into coastal wetlands, especially mangroves, lagoons and estuaries. The problem is aggravated by an increase in marine litter (marine debris and tar balls) from land and shipping activities and particularly by oil and gas exploration and the potential for accidental spills by the major oil producers in the GCLME. There is a high risk of

transboundary contamination of environmentally sensitive areas with damage to coastal infrastructure and to straddling/shared fish stocks. Until recently, gas flaring has been a major source of carbon dioxide emission from the oil fields, which is in the process of being reduced by a mandate for zero flaring within this decade.

The following joint policy action to manage marine pollution in the GCLME and minimize ecosystem impacts is agreed.

**(a) Oil pollution contingency plans and regional policy.**

The IGCC (and later GCC) will encourage effective implementation of the Abidjan Convention and its Protocol Concerning Co-operation in Combating Pollution, in Cases of Emergency. The IGCC will endeavor to provide effective regional communication to coordinate efforts to control marine pollution, minimize impacts and promote cost-effective solutions.

The IGCC will promote the preparation and implementation of national marine pollution contingency and other hazardous substances plans by all Member Countries of the GCLME in collaboration with IMO as provider of technical assistance and the oil shipping companies as partners. The IGCC will encourage harmonization of plans and develop mechanisms for sharing technology and expertise including assistance during actual spill event for sharing of clean-up equipment and provision of expert advice. IGCC will collaborate with IMO for promoting a common strategy for the implementation of MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships), and with IPIECA on the International Convention on Oil Pollution, Preparedness and Co-operation (OPRC 90), and other marine pollution prevention instruments in the GCLME region.

In addition, a regional policy will be developed to minimize transboundary impacts of oil pollution from activities in the EEZs of Member Countries, in partnership with the organized oil operators (including multinationals) in the region.

**(b) Waste minimization and cleaner technology policy**

The IGCC (and later the GCC) will promote the adoption of the concept of cleaner technologies and waste minimization for industrial processes for reduction of discharges of wastes/effluents into receiving waters. Emphasis will be on reduce, reuse, and recycle (3Rs) and application of low cost technology options including the Waste Stock Exchange Management System (WSEMS) and adoption of Best Environmental Practice and Best Available Technology.

The countries will also develop, adapt, implement and enforce common / appropriate water quality standards/guidelines in collaboration with the organized private sector as well as implement appropriate point and non-point source pollution reduction measures. For non-point sources, Member Countries will harmonize policies, legislation and regulations and ensure

their effective application to regulate agro-chemicals (fertilizers, pesticides, etc) to control especially excessive nutrient input leading to eutrophication and persistent organic pollution.

**(c) Marine debris, tar balls and beach litter**

The problem of marine debris, tar balls and beach litter will be addressed by national and regional public awareness and clean-up campaigns similar to those organized yearly for "Coast week" and focused on sanitation for favored recreational beaches. This sensitization shall be followed by legislation and implementation of standards and their harmonization at a regional level. Tar ball loading on beaches will be addressed within the context of MARPOL 73/78 as a trans-boundary impact of oil transportation and dumping. Tar balls can also be the result of oil exploration and exploitation. Activities will be facilitated by local and national focal point institutions and coordinated by the IGCC

**(d) Prevention of toxic waste dumping in the GCLME region**

IGCC (and later the GCC) will collaborate with all Member Countries, international partners and watchdog organizations in enforcing the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (1972); the International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 relating thereto; and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Bamako 1991) in order to combat illegal transfer and dumping of wastes in the region. Member countries will be assisted in ensuring effective surveillance and monitoring mechanisms including participation by local populace through awareness and enlightenment campaigns for the protection of human health and the environment. In the event of any illegal dumping in any of the Member Countries, IGCC (and later GCC) will provide assistance through Partners, Donors, and Collaborators including, if need be, prosecution of the ship/ ship owners responsible for such act.

**(e) Ratification of the Protocol on Land-based Sources and Activities (LBSA) and Development of a Regional Programme of Action (RPA)**

The IGCC (and later the GCC) will facilitate ratification and accession to the Protocol on LBSA to the Abidjan Convention and the development of a Regional Programme of Action (RPA).

### 3.1.5 Maintenance of ecosystem health and protection of biodiversity.

The GCLME is impacted by human activities such as fishing, urbanization, and coastal development. These activities generate huge amounts of waste and have

profound negative impacts on components of the ecosystem manifested as depletion or decline of fisheries, loss of marine resources, biodiversity and biomass erosion, loss of critical habitats particularly fragile mangroves and wetlands that sustain biological diversity and provide spawning grounds for marine fish and other fauna of commercial importance as well as endangered or threatened species. In addition to contamination of marine life and serious threats to human life, there have been losses of biotic integrity with changes in community composition, species biodiversity and introduction of invasive alien species. These have trans-boundary consequences and may be of global importance.

With the goal of reversing and retarding habitat alteration and destruction and to protect vulnerable species and biological diversity, the following regional policy actions are agreed to:

**(a) LME-wide assessment of vulnerable species and critical habitats**

A regional assessment of the status of critical habitats and nurseries e.g. mangroves, coastlines, wetlands and coral reefs in the GCLME will be undertaken collaboratively. Member Countries will prepare the necessary baseline data and information on such habitats including their location for easy geo-reference in a data base using Geographic Information System (GIS). This will allow comparison of various attributes both at spatial and temporal scales and contribute to the description of sites/ecosystems that require specific attention either as problem sites or lessons learned regarding the recovery of altered or damaged habitats. The protection of vulnerable species will be achieved within the context of conserving whole ecotones that encompass habitats of a variety of species. A regional marine and coastal early warning system will be developed and incorporated into an action plan that will specify environmental quality criteria and promote the most appropriate regional structure to address the problems.

**(b) LME-wide policy on invasive species from ballast water and other sources**

A regional policy on marine invasive species from ballast water and other sources will be developed in tandem with existing IMO, GEF and Glo-Ballast framework and management plan. IMO will take the lead in this collaboration and promote awareness on the problems associated with ballast water, as well as assist Member Countries in the implementation of existing international regulations.

**(c) LME-wide protection and conservation of marine biodiversity**

A regional marine biodiversity protection and conservation management plan will be developed in tandem with the International Convention on Biological Diversity (CBO). The plan shall focus amongst others on the establishment of the network for Marine Protected Areas (MPAs) which can be for natural heritage, cultural heritage or sustainable production; this will include a project to determine their potential for eco-tourism in Member Countries. Other aspects of the plan should include assessment of genetic diversity

implications for marine resource management, access to benefit-sharing of genetic resources, and identification of priority areas for Integrated Coastal Area Management. The IGCC (and later GCC) will facilitate this process.

## 3.2 Cross – Cutting Issues

This SAP recognizes a concern to address cross-cutting issues and inter-linkages identifiable as priorities for action for its successful implementation. Highlights of the commonality stronglysuggest the following needs;

- To strengthen the existing institutional and legal framework for sustainable integrated management of coastal and marine areas;
- To ensure the acceptability and sustainability of interventions by involving all relevant stakeholders;
- To build confidence and trust and ensure support for the successful implementation of integrated management of coastal areas and the resources they provide;
- To strengthen the collection and dissemination of scientific information as a basis for effective sustainable management;
- To improve/enhance cooperation at regional and international levels in order to resolve present and future challenges facing the LME and its coastal and marine areas; and
- To ensure sustainable financing mechanisms.

Some of the key factors are further elaborated as follows:

### 3.2.1 Capacity building and institutional strengthening

Building and strengthening of human, institutional and infrastructure capacity and maintenance of developed capacity have been identified as a high priority in the region. Actions are needed to address, *inter alia*, Policy development, development and harmonization of legislation, transfer of environmentally sound technologies and development of regional collaboration or networking in respect of survey and assessment of ecosystem status. This has to include development of institutional capacities of key agencies and institutions in the region, which contribute to the integrated sustainable management of the GCLME. There is however inadequate capacity in member countries to address the priority trans-boundary concerns identified in the TDA and highlighted in this SAP.

Policy Action proposed is development of Strategic Plan for training and capacity building. A thorough review of human and institutional capacity and training needs, particularly those related to analysis of priority transboundary concerns of the region, will be carried out. This study should take into account the concerns expressed in the capacity building component of NEPAD concerning the management of the marine

environment and coastal areas. Such a study will harmonize various areas of existing and planned activities into a strategic and realistic plan of action for capacity building and training. Member Countries will cooperate and share experience to strengthen and assist each other wherever possible to implement this plan. It is equally a priority for the GCLME to liaise with River Basin Authorities, Coastal Aquifer Projects and other LMEs to identify common training requirements.

It is anticipated that after the strategic plan for capacity building and training is adopted, capacity building and training activities will be firmly agreed and decided with the following actions scheduled as part of the implementation of this SAP: community-based demonstration projects, exchange programmes for sharing best practices and lessons learned from similar projects, regular targeted training programmes, establishment of relevant networks including organized urban and rural fishermen cooperatives, alternative vocational training for livelihood/enterprise diversification, enhanced public awareness and information dissemination, and capacity building for the development and implementation of action plans.

### 3.2.2 Stakeholder participation

The Stakeholder Participation Plan will be reviewed and updated for the purpose of the implementation of this SAP. Main stakeholders in the SAP are: Government Ministries and Agencies (Fishery, Environment, Finance, Planning, Agriculture, Mining, other relevant ministries), decentralized authorities, the academia, NGOs (local, regional and international) active in the GCLME region, CBOs involved in specific community based activities, Private sector engaged in fishery, mining, oil and gas, forestry, tourism and agro-based industries, etc. relevant to the scope of the SAP, bilateral and multilateral Donors, UN organizations and agencies.

IGCC will facilitate organization of Stakeholder consultation meetings once in a year for the purpose of effectively reporting and monitoring the progress of the SAP implementation.

Of particular importance is the involvement of the private sector in the SAP implementation. Currently some activities are ongoing to demonstrate public-private partnership on the issues identified in the transboundary diagnostic analysis. Public-private partnership would be further expanded.

### 3.2.3 Public participation

The SAP provides for a sufficient level of consultation and dissemination of information, and encourages the active involvement of the public in the decision-making process through *inter-alia* the participation of representatives of citizen groups in the Steering Committee and support of identified Regional NGO network. The public and non-governmental organizations will be an important part of the process of environmental rehabilitation and restoration at the regional,, national, and local levels. At the regional level focus will be on coordination of actions across the Guinea Current LME. At the national level, this shall cover the process of enhancing

the legislative framework and strengthening the institutional capacity for wider stakeholder involvement in the monitoring and public control of the SAP / NAP implementation. At the local level, the active participation of the public and especially local communities in management decision-making process will be a prerequisite to the successful implementation of practical environmental actions.

### 3.2.4 Communication, Information, Education and Awareness

.In order to ensure maximum benefits to society from the implementation of this SAP, the IGCC (and later GCC) will facilitate the following:

- Identification of common methodologies and harmonizing activities in information collection and dissemination;
- Use of appropriate information delivery mechanisms – integrated and interactive communication and education, use of local languages where necessary in grassroots communication and instruction, etc.
- Data and information exchange on sustainable integrated coastal and marine areas management;
- Collection, sharing and protection of sustainable cultural education and experience which can be useful for planning development in coastal and marine areas;
- Effective involvement of non-governmental and community-based organizations in order to reach the grass-root and facilitate the management processes of coastal and marine areas;
- Ensuring gender-balanced participation at the policy formulation process in the design and management of development information and communication initiatives in coastal and marine areas;
- Training of trainers in the development of awareness materials in different formats and languages of participating Member Countries;
- Timely public access to the widest possible extent, to relevant information and documentation on the outcome of successful implementation of interventions in this SAP.
- Regular information and documentation to governments, senior level decision-makers, development partners, collaborating UN agencies, non-governmental organizations, and stakeholders in the private sector, etc.

## 3.3 Investment Actions

Investment actions are identified interventions whose collective implementation should change or reduce the deleterious human activities and practices resulting in environmental concerns and ensure sustainable development. The net effect is an integrated approach toward the sustainable use of renewable resources in an environmentally sound yet economically-viable manner. The actions seek to address primarily the “problem at hand” (i.e. restore fish stock, repair damage resulting from pollution, and implement new technologies and cleaner production process, etc).

However, investment actions may go beyond solving the immediate problem. They include projects/programmes that deal with ancillary environmental risks as well as addressing the efficacy and success of mitigating the main cause(s) of environmental problems. They present opportunities for the development of downstream or upstream activities and associated businesses which should be investigated as their integration can add a valuable element to the financial viability of the overall undertaking. For sustainability, a legislative framework must be established through the enactment of legislation to protect and reinforce the objectives of such remedial actions. In addition, public and community education initiatives should be undertaken to reinforce the benefits of the investment actions.

In order to ensure the ultimate sustainability of the investment actions, funds and financial mechanisms need to be established and allocated to re-invest in the projects and maintain the benefits of the initial integrated actions. Thus, monitoring and enforcement to assess performance is a key element of investment interventions in this SAP.

While Public-Private-Partnerships are not the focus of the investment actions identified, their principles are generally favored and have been considered in their development. This should ensure and support the creation of new enterprises, pool the best features of the private and public sectors - the dynamism, access to finance, knowledge of technologies, managerial efficiency, and entrepreneurism of the private sector with social responsibility, environmental awareness, local knowledge, and job creation concerns of the public. The Private – sector partners must however meet well defined criteria to qualify for involvement in projects. These will include:

- Willingness to contribute to the cost of the projects feasibility studies from the outset;
- Willingness to invest in the new ventures when established;
- Experience in operating cleaner technologies to be used in the project;
- Experience in operating in a developing country;
- Support of its own government development agency, if foreign;
- Strong support and advocate of eco-efficiency and local participation;

The overall intention in the actions and interventions is that they should be replicable as they address problems of common concern in the region and the solutions that they offer should be easy to transplant as vital and positive examples of “how to”. The listing of priority investment actions in this SAP shall include the following:

### 3.3.1 Achieve sustainable *fisheries*

- Conduct regular joint stock assessment surveys;
- Initiate management actions to restore and sustain depleted fish stocks,including application of the precautionary approach;
- conduct feasibility assessments for recovery and sustainability of species at risk from over fishing and/or climate change within the GCLME, for ensuring recovery and sustainability of artisanal and industrial fishing;

- Integrate a fisheries recovery and sustainability management plan;
- Promote various technologies on extensive, semi-intensive and intensive aquaculture in the region;
- Promote and demonstrate mechanisms to reduce by-catch;
- In collaboration with the fishing industry, promote innovative designs, and fabrication of by-catch reduction devices for use by industrial shrimping vessels;
- Implement demonstration projects for nypa palm utilization and mangrove products involving local communities and entrepreneurs;
- Promote eco-tourism through livelihood generation from eco-services and appropriate ecological products.
- Promote and support alternative livelihood activities for coastal and artisanal fishermen;
- Promote the establishment of environmentally sustainable estuarine and coastal shrimp farming in line with FAO, UNEP, NACA, WB, WWF, guidelines.

### 3.3.2 High quality water to sustain balanced ecosystem

- Implement a first periodic assessment (3-year interval) of the water quality and trends;
- Develop and implement simple primary treatment infrastructure for the management of domestic wastewater;
- Provide secondary sewage treatment to targeted coastal urban populations;
- Promote tertiary waste treatment technology, where appropriate, in highly industrialized coastal cities;
- Promote cooperative waste stock exchange centers in industrialized coastal cities;
- Work with the organized private sector on business plans for waste management through informal recycling and reuse of industrial waste with viability as small-scale commercial enterprises;
- Work with the private sector to leverage financing for implementing wastewater discharge controls in targeted areas;
- Implement demonstration projects to bring best available technology and practice to industrial discharges (e.g. pre-treatment, source control, process control);
- Promote construction of reception facilities for marine debris / wastewater at ports.

### 3.3.3 Balanced habitats for sustainable ecology and environment

- Develop and implement action plans for the ecologically sensitive areas which are vulnerable to human activities;

- Promote Best Environmental Practices / Best Available Technologies for agriculture to reduce discharge of nutrients;
- Implement demonstration projects for phosphate reduction in phosphate effluent;
- Promote soft engineering options suitable for rehabilitation of eroded coastlines and coastal areas within the region;
- Encourage and ensure participation of private sector, communities and non-governmental organizations in the rehabilitation and restoration for PADH hotspots;
- Work with the private sector for alternative local building materials, particularly low-cost options (e.g. clay, laterite, etc,), to reduce coastal sand mining.

# 4 NATIONAL ACTION PLANS

Each member country will review and update the National Action Plan (NAP) which will form an integral part of this SAP. Each NAP shall identify a suite of measures and present details of national actions for environmental protection and sustainable use of natural resources that will be taken to effectively address strategic transboundary issues and the most urgent environmental concerns at the national level.

Each NAP will include cost data to take full account of the cost estimates of financing the implementation of actions required in the short, medium and long-term and any additional funding to strengthen the financial sustainability and ensure the prompt and adequate provision of funding for priority environmental actions identified in the NAP/SAP.

The NAP as the overarching framework for coastal and marine environmental management at the country level, will incorporate pertinent proposed policy reforms and investment actions already identified in the various action plans (National Biodiversity Strategy Action Plan (NBSAP), NPAs, POPs / NIPs, ICARM), for the avoidance of duplication. Each NAP is to be adopted and endorsed by the relevant by-laws to be enacted by each member country of the GCLME and therefore represent the major tool that shall facilitate the implementation of the SAP at the national level. The successful implementation of the NAPs will therefore enable the achievement of the objectives of the SAP.

IGCC will support Member Countries to formulate and implement NAPs for the successful national level implementation of the SAP, and where necessary provide national and regional training for achieving same.

# 5 FINANCE AND REVIEW

## 5.1 Financing the Strategic Action Programme for the Next Five Years

The total investment cost of financing the implementation of actions required to recover and sustain the goods and services of the GCLME as identified in this SAP (Annexes IV and V) will include cost data to be provided from the NAPs to take full account of cost estimates made from the perspective of the long-term objectives of the SAP. This will be achieved through:

**(a) Domestic Resource Mobilization**

In continuation of the on-going efforts by member countries to seek additional funding for sustainable implementation of identified priority actions within the NAPs, member countries shall strengthen their commitment by providing or increasing their national budget allocations.

**(b) Contributions from Partner Organizations**

To support/secure matching funds, member countries will equally seek the necessary funding for the actions agreed upon in this SAP and NAPs from national, regional and international sources and mobilize resources from private and general public funding for sustainable financing or through the application of appropriate economic incentives/ instruments where possible.

Donor conferences for assisting in this process shall be held for commitments to the SAP implementation. Specific funding arrangements for national policies and measures agreed on in this Strategic Action Programme shall be presented in the NAPs to be endorsed by each of the Member countries. Donor financing including loans, and export credits is envisaged where appropriate.

Self-sustaining financing at the national level shall include economic incentives (ecosystem services, taxes, debt swap, etc); self-sustaining activities (e.g. sewage plants, waste oil recycling, etc); private sector financing; trust funds (ecological, environmental education, etc); revolving funds from industries and governments; user fees; counterpart funds from fisheries agreement; access penalties; and polluter pays principle. Innovative community based financial instruments will be devised and tested to enhance community participation and financing of SAP activities. This shall include innovative financing and user fees for goods and services (e.g. wells, fishing terminals, etc) for improving the health and sustainability of the GCLME

The strengthening of public-private partnership arrangements designed to encourage the active involvement of governance bodies, business community and civil society is seen as a potential option for improving the existing situation. Financial sustainability of the SAP will be ensured through the

introduction of new specific economic instruments designed to encourage environmental investments. In all cases the magnitude of financial need will be determined by appropriate costing / valuation. The demonstration activities will also be used to test the financing mechanisms.

### *5.2 Monitoring, Review and Reporting on the Implementation of the SAP*

It is recognized that the provision of adequate arrangements for monitoring and evaluation is a key to ensuring the successful implementation of this SAP. The IGCC (and later the GCC) through the technical advisory groups and /or any other Experts or bodies to be appointed as recommended by the Executive Secretary, shall be responsible for monitoring and reviewing the progress of the SAP implementation every five years, and updating it in line with reality as found necessary.

The monitoring and evaluation process shall be to ensure that the objectives of the project are met, to ascertain the extent of achievement of the objectives, and identify areas where the projects did not meet its objectives, reasons for not meeting the objectives so as to proffer alternative ways of meeting the objectives. To this end, the IGCC and later the GCC will initiate socioeconomic impact assessments of the components of the SAP actions. Thus anticipatory or ex-ante (before the projects) analysis or ex-post (after the projects) procedures will be adopted by the IGCC and later the GCC in the assessment of the GCLME projects.

In addition, as the SAP implementation is projected for a period of 10 years, a mid term review after 5 years) will be conducted by the IGCC (and later GCC) in conjunction with member countries and partners to assess the progress in SAP implementation and the need for updating the SAP.

At the national level, the governmental bodies responsible for the formulation and implementation of national environmental policies and coordination of national environmental monitoring efforts will play a major role in the SAP monitoring and control of the SAP/NAP implementation on the basis of relevant measurable and quantifiable performance indicators (Annex III).

The National governments and IGCC (later GCC) will use the monitoring results/data to publish the ‘State of Coast” (SOC) Report on annual basis based on a uniform reporting template.

### *5.3 Replication and Up scaling mechanism for demonstration projects*

The six national and three regional demonstration projects being implemented at an early stage in Project execution are the following:

1) Marine Protected Area Management (Benin)

2) Integrated Coastal Area and River Basin Management (ICARM) for Kribi-Limbe Region (Cameroon)
3) Low-cost protection from coastal erosion (Côte d'ivoire)
4) Waste Stock Exchange Management System (Ghana)
5) Nipa Palm Utilization and Mangrove Restoration (Nigeria)
6) Reduction of Nutrient Discharges (Togo)
7) Sustainable Management of Fisheries in the GCLME Region
8) Marine Productivity Assessment
9) Information and Data Management System

The demonstration projects above will be replicated in other areas of the region as they address problems of common concern in the region and offer solutions that are easy to transplant as vital and positive examples of "how to" and lessons learned in project implementation. Such lessons learned and best practice examples will take advantage of mechanism such as IW: LEARN for maximum benefits. In order to ensure the effective replication of these demonstration projects, the approved projects were guided and met the following clear and specific criteria:

- Be demand-driven and address a priority problem;
- Fully involve the public/community and private sectors from the outset;
- Demonstrate a strong potential for attracting private-sector participation, including the possibility of reasonable profitability;
- Provide opportunity for improving local social conditions through job creation, training and overall improvement of living conditions;
- Respect local cultural and traditional values;
- Involve local stakeholders, non-governmental organizations (NGOs), and community groups in its development; and fully inform the community of the implications and constraints in terms of quality of service, cost of investment (community contribution), tariffs and user fees, and management complexity;
- Encourage technology, process and knowledge transfer to enable the ability to adapt learning from projects within the investment action to similar or other projects;
- Establish a lead agency / institution for the execution and implementation with clear mandate to oversee the deployment and accountability of funds for the project;
- Obtain commitment for replication within the country and region as positive proof of success / performance.

# 6 ARRANGEMENT FOR FUTURE CO-OPERATION

Member countries are committed to the implementation of this SAP over the next five to ten year period to its continuation beyond the GEF intervention for the programme to lead to long-term measures to sustain and protect the GCLME. They will jointly adopt appropriate legislation, implement economic incentives and /or instruments and establish a permanent Guinea Current Commission (GCC) with a fully–functional secretariat. A financial plan that will ensure sustainable funding will be prepared and finalized for commitments to the programme.

The GCLME programme will promote strong links with pertinent institutions, non-governmental organizations and the organized private sectors within Member Countries to promote the overall objective of the maintenance of optimum sustainable use and long-term protection of the marine and coastal areas in both the economic and social context for economic development and poverty reduction within the region

# ANNEXES

## ANNEX I: THE STRUCTURE OF THE INTERIM GUINEA CURRENT COMMISSION

The Interim Guinea Current Commission (IGCC) will subsume the present GCLME Project and in accordance with the recommendations of the First Ministerial meeting (21-22 September 2006) held in Abuja, comprise of three key organs, namely:

a) the Council of Ministers,
b) the Steering Committee, and
c) the Executive Secretariat

The Council of Ministers is composed of Ministers designated by their respective Countries to serve on the IGCC/GCC. The Council of Ministers will *inter alia* supervise the implementation of this SAP, establish such bodies as required to support activities and processes related to its implementation, and mandate any other organ of the Commission to carryout specific tasks.

The Steering Committee, consists of one high-level official country representative from each of the sixteen countries (not below the rank of a Director), one representative each from AU (STRC) and AfDB, US-NOAA, FAO, IMO, the Centre for Environment and Development in Africa (CEDA) in Benin, and the Foundation for Environmental Development and Education in Nigeria (FEDEN) (representing NGO's, CBO's and the Civil Society), and representatives of the GEF Agencies (UNDP, UNEP, UNIDO) and representatives from the Private sector. The representative of the FAO will be included on the Steering Committee during the full project implementation to coordinate regional fisheries and environmental management efforts and with other regional fisheries commissions and programmes.

The Steering Committee will oversee the implementation of the full project, reviewing annual progress, the following year's work plan and budget, and providing overall strategic and policy guidance. The Steering Committee will meet once a year to, *inter alia*, constitute and define TOR's for regional and national Scientific/Technical Advisory Committees, define modalities for setting up the country Inter-ministerial Committees, and formulate a Work Plan and Timetable for the Activities scheduled during the year.

The country Inter-ministerial Committees, whose main task is to promote and give validity to the cross-sectoral approach implied in the LME concept at the national level will meet on an as-needed basis to be informed of the work of the Steering Committee, to review the progress of national Scientific/Technical Advisory Committees charged with the implementation of project activities at the country level and to facilitate important country political level commitment to the implementation of the project including sourcing for donor support.

The composition and functioning of the regional and national Scientific/Technical Advisory Committees is crucial to the success of the project. The demonstration projects for national execution in the six pilot phase countries will be placed under the supervision of the national Inter-Ministerial Committees while the three regional demonstration projects will be ecosystem-wide, embracing all sixteen GCLME countries and guided by the Steering Committee. The Steering Committee will also maintain oversight of the implementation of the national demonstration projects.

The former GCLME Project Regional Coordination Unit (RCU) with its complement of staff have been absorbed by the Executive Secretariat of the IGCC which is now headed by the present Regional Director with a new designation as Executive Secretary of the IGCC.

The Executive Secretary will perform all such tasks as delegated by the Council of Ministers and Steering Committee and in particular:

(i) Co-ordinate and administer the Commission's activity including work schedule, contract preparations, financial management, auditing and preparation of annual reviews;

(ii) Assume responsibility for the operation and maintenance of an electronic communication system for the purposes of facilitating interactions between the components of the GCLME institutional network;

(iii) Liaise with Activity Centres / Centres of Excellence to provide information on bibliography, data sources, status of the ecosystem, environmental variability, assessment and monitoring activities;

(iv) Organize at least once a year, scientific conference based on the results of work programme and assessment of the status of the GCLME.

(v) Report on the progress on SAP implementation to the Steering Committee and Council of Ministers at their yearly meeting.

(vi) Responsible for the day to day running of the Secretariat.

# ANNEX II : RECOMMENDATIONS TO THE INTERIM GUINEA CURRENT COMMISSION

## ACTIVITY CENTRES ASSOCIATED WITH THE GUINEA CURRENT LARGE MARINE ECOSYSTEM STRATEGIC ACTION PROGRAMME (GCLME-SAP)

A major part of the GCLME SAP activities will be implemented by a network of specialist institutions coordinated by Centers of Excellence. Five Member Countries have agreed to host at least one of each of these centers. These Centers are based in national institutions with adequate capacity to host the type of activities to be assigned. These Centres will continue to work closely with the Executive Secretariat of the IGCC (later GCC) in order to establish links with the national focal points i.e. specialized institutions in each country appointed by governments to participate in each of the networks. With the support of the Executive Secretariat, the Activity Centers shall organize Working Parties, conduct relevant training and present recommendations to the Programme Steering Committee.

The Six Centers are as follows;

Activity Center 1: Environmental Information Management and Decision Support System (based in Lagos, Nigeria)

Activity Center 2: Marine Productivity and Biodiversity (based in Accra, Ghana)

Activity Center 3: Fisheries and Other Living Resources (based in Luanda, Angola)

Activity Center 4: Regional Center of Excellence for Pollution Management (based in Owerri, Nigeria)

Activity Center 5: Risk Assessment and Early Warning System (based in Libreville, Gabon).

Activity Centre 6: Oil Spill Contingency and Emergency Response

# ANNEX III : MEASURABLE AND QUANTIFIABLE INDICATORS FOR THE GCLME

Environmental Indicators are a tool used to assure precise evaluation of achievement or satisfaction of the target, demonstrating which metric will be used in the evaluation. Environmental indicators may be of three types, according to GEF terminology: Process Indicator, Stress Reduction Indicator, or Environmental Status Indicator. The timeframe for the targets has been set within a five-to-fifteen year period to ensure that SAP activities fulfill the objectives and targets of the Johannesburg Plan of Implementation (JPOI), and the Millennium Development Goals (MDG).

## 1) Achieve Sustainable Fisheries

Targets

- Populations of threatened species stabilized and/or recovered by 2015
- Fish populations restored to levels of mid-1970s by 2020 (based on the quality of data)
- All commercially important fish species being fished sustainably with minimum by-catch and habitat impacts by 2020

**MEASURABLE AND QUANTIFIABLE INDICATORS:**

- Provision of current stock assessment data and updated data from periodic assessment;
- Provision of data on status of vulnerable species and habitats;
- Provision of access to reliable monitoring information on stock level including transboundary straddling stock;
- Increase in abundance of native and endemic fish species;
- Increased harvesting and utilization of under-utilized species;
- Reduction of by-catch of commercially important fish species;
- Reduction of habitat impacts;
- Reduction in the number of threatened / endangered species;
- Increased fish production from mariculture;
- Increased proportion of population with access to fish and fisheries products from the region or increased per capita consumption of fish;
- Increased opportunities for alternative sustainable livelihoods for fisher folks;
- Ratification of a multilateral agreement by the countries on enforcement of quotas, size limits, seasons, etc. including existing Fisheries Acts and Regulations of FAO Code of Practice.

## 2) High Quality Water to Sustain Balanced Ecosystem

Targets

- Reduce annual inputs of all priority land and sea-based pollutants to the marine environment by at least 10% by 2015

- Measurably improve water quality in two priority coastal hotspots in each country by 2015

**MEASURABLE AND QUANTIFIABLE INDICATORS:**

- Reduction in chemical pollution of anthropogenic origin;
- Reduction in solid and hazardous wastes entering coastal waters through dumping;
- Reduction in pollution load from diffuse (non-point) sources;
- Reduction in damage caused by the harmful effects of wastewaters;
- Availability of objective monitoring information on water quality and ecological status of water bodies in the region;
- Reduction in sea-based pollution;
- Sustainable cross-border cooperation / partnership on ballast water management based on multilateral agreements signed under the Glo-ballast Partnership and Programmes.

**3) Balanced Habitats for Sustainable Ecology and Environment**

Targets

- Zero net loss of mangroves by 2015
- Reduced aerial coverage of eutrophied lagoons by 50% by 2015
- Measurably reduced coastal erosion at five sites by 2015

**MEASURABLE AND QUANTIFIABLE INDICATORS:**

Increase in :
- mangrove cover along the coast, deltas, lagoons and estuaries;
- area of restored mangrove forest /swamps;
- area of restored wetlands;
- number and area of protected sites;
- abundance in native and endemic fish species.

Increases in innovative utilization of Nypa palm;
Successes recorded in mangrove restoration;
Reduction in the number of endangered / threatened species;
Reduction in area coverage of eutrophied lagoons;
Reduction in nutrient discharge;
Measurable reduction of coastal erosion at priority sites within the region;
Incorporation of integrated Coastal Area and River Basin Management (ICARM) principles into environmental legislation;
Increased level of participation of local authorities, local communities, and the wider public for conservation and protection of critical habitats, preparation and implementation of environmental programmes.

## ANNEX IV : MAJOR ISSUES, TARGETS, AND INTERVENTIONS

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| Sustainable Fisheries | Populations of threatened species stabilized and/or recovering by 2010 | Fill gaps in knowledge | Complete assessment of status of vulnerable species and habitats | Scientific Investigation |
| | | Develop and agree on management plans for all major fisheries by 2010, including urgent measures for threatened species by 2008 | Develop management plans, and implement and monitor them with local communities and user groups | Legislative/ Regulatory |
| | | Designate, conserve/ protect habitats critical to the fisheries by 2008 | Establish marine protected areas for critical spawning grounds and habitats of threatened or endangered species | Policy |
| | | Develop and implement regional biodiversity strategy | Prepare a regional biodiversity strategy document, including a gap analysis, and obtain endorsement by riparian states | Policy |
| | | | Implement biodiversity strategy, including species specific action plans | Scientific Investigation/ Investment |
| | Fish populations restored to levels of mid-1970s by 2020 (based on the quality of data) | Reduce uncertainty regarding ecosystem status and yields | Assess feasibility of using information from the PIRATA moored buoy array in the tropical Atlantic to enhance understanding of the links between weather, climate and fish | Scientific Investigation |
| | | | Develop community projects for cost effective environmental information gathering and environmental education | Capacity Building |
| | | | Analyse plankton archives and other (oceanographic) data collections for baseline information to measure decadal change | Scientific Investigation |
| | | | Develop links with CLIVAR (Climate Variability and Predictability Project of the World Climate Research Programme) and CLIVAR Africa and with | Institutional Strengthening |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | | GOOS (Global Ocean Observing System of the Intergovernmental Oceanographic Commission of UNESCO) and GOOS-Africa | |
| | | | Adapt/develop predictive mathematical models applicable to the region | Scientific Investigation |
| | | | Establish regional advisory groups and networking centres | Institutional Strengthening |
| | | | Establish links with the Canary and Benguela Current LMEs | Capacity Building |
| | | Complete effective regional stock assessment by 2007 and repeat every five years thereafter | Establish an annual regional forum for stock assessment, ecosystem assessment and information sharing on harmonization of management actions and co-management | Scientific Investigation |
| | | Exchange environmental data and information | Develop agreements and technology basis for the free and regular exchange of environmental data and information within the region | Data Management |
| | | Improve ability to respond to ecosystem fluctuations | Develop regional early warning system, assessment and prediction capability | Scientific Investigation |
| | | | Establish joint response policies | Policy |
| | | Strengthen legal basis for fisheries management | Assure that legislation regulating fishing gear, quotas, size limits, seasons and allowed fishing areas are in place | Legislative/ Regulatory |
| | | | Help harmonize fishing regulations amongst GCLME countries | Policy |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | | Establish “no take zones” either geographically or seasonally | Legislative/ Regulatory |
| | | Develop and initiate implementation of monitoring and enforcement plan (MEP) by 2010 and achieve effective monitoring and enforcement by 2012 | Strengthen enforcement of quotas, size limits, seasons, etc., relying on community-based fishery management activities, including existing Fisheries Acts and/or regulation of FAO Code of Practice to reduce overharvesting | Policy |
| | | Develop site-specific or species-specific management plans that promote sustainable utilization and protect nursery or reproduction areas | Develop management plans, and implement and monitor them with local communities and user groups | Legislative/ Regulatory |
| | | | Strengthen capacity of local communities to implement and monitor management plans | Institutional Strengthening |
| | All commercially important fish species being fished sustainably with minimum by-catch and habitat impacts by 2020 | Fill gaps in knowledge | Establish current levels and patterns of trade of selected species | Scientific Investigation |
| | | | Establish distribution and abundance | Scientific Investigation |
| | | | Identify areas where species are and are not threatened by over-exploitation | Scientific Investigation |
| | | | Establish criteria for “healthy” situation | Scientific Investigation |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | Enhance food security by using alternative sources such as aquaculture/mariculture by 2015 | Conduct a feasibility assessment for particular species in certain areas of the region | Investment |
| | | | Formulate harmonized regional mariculture policy | Policy |
| | | | Conduct training in sustainable community-based mariculture | Capacity Building |
| | | | Promote establishment of extensive, semi-intensive and intensive fish culture and shrimp farming | Investment |
| | | Improve fisheries management | Establish regional fisheries commission | Policy |
| | | Provide alternative technologies | Develop and demonstrate mechanisms to reduce by-catch | Investment |
| | | | Promote innovative designs and fabrication of by-catch reduction devices for use by industrial shrimping vessels. | Investment |
| | | | Implement demonstration projects for nipa palm utilization and mangrove products involving local communities and entrepreneurs. | Investment |
| | | | Promote eco-tourism through livelihood generation from eco-services, and ecological products. | Investment |
| High quality water to sustain balanced ecosystem | Reduce annual inputs of all priority land and sea-based pollutants to the marine environment by at least 10% by 2015 | Develop effective regional monitoring, database reporting and appropriate networking | Develop common regional guidelines for periodic assessment of water quality | Legislative/ Regulatory |
| | | | Estimate the carrying capacity of the coastal waters using an ecosystem-based approach | Scientific Investigation |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | | Implement a first periodic assessment (3-year interval) of the water quality and trends | Investment |
| | | Fill gaps in knowledge of priority pollutants (contaminant levels) and major sources of pollutants (contaminant inputs) | Conduct regional assessment of priority land-based activities, sources of contaminants and pollutant levels | Scientific Investigation |
| | | Provide training in monitoring and assessment | Assess regional training needs | Capacity Building |
| | | | Devise and implement appropriate training courses appropriate for the needs of the region | Capacity Building |
| | | | Improve networking among professionals in the region through for a and exchanges | Capacity Building |
| | | Establish regional environmental quality standards (REQSs) | Establish regional working group to decide upon environmental quality standards | Policy |
| | | Harmonize national legislation into regional framework for implementation to support water quality objectives | Conduct national review of policy, legal and regulatory frameworks and institutional structure for addressing land-based activities | Legislative/ Regulatory |
| | | | Develop common regional guidelines containing appropriate recommendations for decision makers for management of land-based point and non-point pollutant sources | Scientific Investigation |
| | | | Develop realistic National Plans of Action for land-based sources and activities | Capacity Building |
| | | | Develop and obtain approval for Protocol to the Abidjan Convention on Land-Based Activities and Sources of Pollution | Policy |
| | | | Develop and enforce regulations on the disposal of industrial and mining effluents | Legislative/ Regulatory |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | Facilitate exchange of data and information on water quality in the GCLME | Develop data and information network and management system | Data Management |
| | | Provide investments in sewage treatment, environmentally sound technologies and cleaner production options for minimization of industrial discharges to reduce inputs of heavy metals, POPs, excessive nutrients and other priority pollutants | Develop and implement simple primary treatment infrastructure for use by homesteads | Investment |
| | | | Provide secondary sewage treatment to targeted coastal urban populations | Investment |
| | | | Work with private sector to leverage financing for implementing wastewater discharge controls in targeted areas | Investment |
| | | | Promote tertiary waste treatment technology where appropriate in highly industrialized coastal cities | Investment |
| | | | Promote cooperative waste stock exchange centres in industrialized coastal cities | Investment |
| | | | Undertake awareness programme involving government and the organized private sector on waste management through informal recycling and reuse of industrial products with viability as small-scale commercial enterprises. | Investment |
| | | | Implement demonstration projects to bring best technology and practice to industrial discharges (e.g., pre-treatment, source control, process control) | Investment |
| | | | Strengthen the capacity of institutions to enforce mining and industry regulations | Institutional Strengthening |
| | | Implement actions to reduce sea-based pollution inputs | Coordinate with GEF international ballast water management project to mitigate the impacts of ballast water in the GCLME | Capacity Building |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | | Develop regional policy for addressing sea-based pollution | Policy |
| | | | Promote construction of reception facilities for marine debris/wastewater at ports | Investment |
| | | Determine and satisfy training needs in region for land-based activities and sources | Conduct survey on training needs and conduct training in land-based activities and sources (for high officials, mid-level government, community, experts, industry, etc.) | Capacity Building |
| | | Develop educational programs at all levels on land-based activities and sources | Conduct survey on educational needs to support reduction of land-based activities and sources and implement the activities to address three top priority regional educational needs, in appropriate languages | Capacity Building |
| | | Develop Regional/ Governmental/ Private Sector/ Public Sector partnerships on land-based activities and sources | Integrate private sector into activities of this project as appropriate as sub-contractor, consultant or co-sponsor of specific activities | Policy |
| | | | Working with private sector, identify and secure financing to replicate the demonstration projects in other areas of the region | Policy |
| | | Identify, strengthen and involve stakeholders in land-based sources issues in the region | Develop a public participation and awareness (PPA) workplan for the Project | Capacity Building |
| | Measurably improve water quality in two priority coastal hotspots in each country by 2010 | Fill gaps in knowledge of coastal water quality hotspots | Undertake assessment of coastal areas in order to determine priority coastal hotspots | Scientific Investigation |
| | | Develop site-specific management plans through a participatory process which includes local communities | Undertake a participatory planning process for each hotspot to identify challenges and locally acceptable management mechanisms | Capacity Building |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| Balanced habitats for sustainable ecology and environment | Zero net loss of mangroves by 2015 | Fill gaps in knowledge of priority for protection of mangrove forests | Collect and/or verify baseline data on extent, diversity, local uses of mangrove products and management challenges | Scientific Investigation |
| | | Inventory, replant and monitor the rate of restoration (e.g., mangroves) | Develop national mangrove management strategies/ plans/ frameworks (including community participation and empowerment) | Policy |
| | | | Undertake a participatory planning process for each selected mangrove site of global and ecoregional importance to identify challenges and locally acceptable management mechanisms | Capacity Building |
| | | | Link with international mangrove conservation initiatives | Capacity Building |
| | | Harmonize national legislation into regional framework for implementation to protect critical habitat such as mangroves | Conduct national review of policy, legal and regulatory frameworks, and institutional structure for addressing protection of critical habitats | Legislative/ Regulatory |
| | | | Draft Regional EIA process review in a regional workshop; adopt regional EIA | Legislative/ Regulatory |
| | | Strengthen local capacity to protect habitats | Strengthen the capacity of NGO's and CBO's for community-based conservation measures | Capacity Building |
| | | Promote alternatives to mangrove harvesting | Implement local training programs through agricultural extension offices promoting alternatives to harvesting and cutting of mangroves | Capacity Building |
| | | Prevention of adverse human activity on sensitive areas | Evaluate sensitivity of areas and habitats in the GCLME and evaluate levels of human impacts on them | Scientific Investigation |
| | | | If necessary, develop legislation for the protection of areas not currently covered or included in protected zones | Legislative/ Regulatory |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | | Develop and implement action plans for those sensitive areas where human impact is adverse | Investment |
| | Reduced areal coverage of eutrophied lagoons by 50% by 2015 | Quantify the levels of eutrophication of lagoons and initiate effective monitoring | Undertake assessment of eutrophication in GCLME lagoons | Scientific Investigation |
| | | Develop concrete management plans with supporting legislation for priority eutrophic sites, including investment activities | Develop national lagoon management strategies/plans/ frameworks (including community participation and empowerment) | Policy |
| | | Reduce agricultural inputs to eutrophic sites | Develop Best Environmental Practices/Best Available Technologies for agriculture to reduce discharge of nutrients | Investment |
| | | | Work through agricultural extension offices to ensure that farmers are implementing practices to reduce nutrient discharge | Capacity Building |
| | | | Implement demonstration projects for phosphate reduction. | Investment |
| | | Implement actions to reduce impacts of HABs | Develop HAB reporting system for the GCLME region | Data Management |
| | | | Conduct community awareness projects linked to national ministries of health to alert the public to the dangers associated with HABs | Capacity Building |
| | | | Develop national/regional HAB contingency plans which include early warning systems and guidelines for medical practitioners to deal with HAB-associated problems | Institutional Strengthening |
| | | | Improve national capacity to analyze for toxins and identify harmful species by sharing expertise between countries | Capacity Building |

| Major Issues | Targets | Activities | Interventions | Type of Intervention |
|---|---|---|---|---|
| | | Halt the spread of aquatic weeds | Develop national and regional aquatic weed management strategies/ plans/ frameworks combined with monitoring and GIS capabilities | Policy |
| | Measurably reduced coastal erosion at five sites by 2010 | Fill gaps in knowledge | Conduct assessment of the effects of infrastructure on coastal erosion on the Guinea Current coast | Scientific Investigation |
| | | Develop regional agreement on co-management of sediment transport | Through regional fora, agree upon regional policies for sediment sharing and its restoration | Policy |
| | | Develop coastal erosion management plan through a participatory process | Devise national management structure/ framework/ plan for addressing coastal erosion | Capacity Building |
| | | | Promote soft engineering options suitable for rehabilitation of eroded coastlines and coastal areas within the region. | Investment |
| | | | Encourage community participation in coastal habitat rehabilitation and restoration for hot spots of PADH involving, NGOs and CBOs. | Investment |
| | | | Work with private sector for alternative local building materials particularly low-cost options to reduce coastal sand mining (e.g. Clay, laterite, etc). | Investment |
| | | | Promote environmental and community-based tourism | Capacity Building |
| | | Strengthen legal basis for protection of coastline | Review, harmonize and strengthen relevant local and national policies and legislation regarding coastal zone and river basin management | Legislative/ Regulatory |

# ANNEX V: PRIORITY ACTIONS WITHIN EACH CATEGORY OF INTERVENTION

| Category | Major Issues | Interventions |
|---|---|---|
| Policy Actions | I. Sustainable Fisheries | Establish Marine Protected Areas for critical spawning grounds and habitats of threatened or endangered species |
| | | Prepare a regional biodiversity strategy document, including a gap analysis, and obtain endorsement by riparian states |
| | | Establish joint response policies |
| | | Strengthen enforcement of quotas, size limits, seasons, etc., relying on community-based fishery management activities, including existing Fisheries Acts and/or regulation of FAO Code of Conduct to reduce over harvesting |
| | | Help harmonize fishing Policies amongst GCLME countries |
| | | Formulate harmonized regional mariculture policy |
| | | Establish regional fisheries commission |
| | II. High quality water to sustain balanced ecosystem | Establish regional working group to decide upon environmental quality standards |
| | | Ratify and accede to the Protocol on Land-Based Activities and Sources of Pollution of the Abidjan Convention |
| | | Develop regional policy for addressing sea-based pollution |
| | | Integrate private sector into activities of this project as appropriate as sub-contractor, consultant or co-sponsor of specific activities |
| | | Working with private sector, identify and secure financing to replicate the demonstration projects in other areas of the region |
| | III. Balanced habitats for sustainable ecology and environments | Develop national mangrove management strategies/ plans/ frameworks (including community participation and empowerment) |
| | | Develop national lagoon management strategies/plans/ frameworks (including community participation and empowerment) |
| | | Develop national and regional aquatic weed management strategies/ plans/ frameworks combined with monitoring and GIS capabilities |
| | | Through regional meetings, agree upon regional policies for sediment sharing and its restoration |
| Legislative / Regulatory Actions | I. Sustainable Fisheries | Develop management plans, and implement and monitor them with local communities and user groups |
| | | Assure that legislation regulating fishing gear, quotas, size limits, seasons and allowed fishing areas are in place |
| | | Establish “no take zones” either geographically or seasonally |
| | | Develop management plans, and implement and monitor them with local communities and user groups |
| | II. High quality water to sustain balanced ecosystem | Develop common regional guidelines for periodic assessment of water quality |
| | | Conduct national review of policy, legal and regulatory frameworks and institutional structure for addressing land-based activities |

| Category | Major Issues | Interventions |
|---|---|---|
| | | Develop and enforce regulations on the disposal of industrial and mining effluents |
| | III. Balanced habitats for sustainable ecology and environments | Conduct national review of policy, legal and regulatory frameworks, and institutional structure for addressing protection of critical habitats |
| | | Draft Regional EIA process review in a regional workshop; adopt regional EIA procedure |
| | | If necessary, develop legislation for the protection of areas not currently covered or included in protected zones |
| | | Review, harmonize and strengthen relevant local and national policies and legislation regarding Integrated Coastal Area and River basin Management (ICARM) |
| Institutional Strengthening Actions | I. Sustainable Fisheries | Develop links with CLIVAR (Climate Variability and Predictability Project of the World Climate Research Programme) and CLIVAR Africa and with GOOS (Global Ocean Observing System of the Intergovernmental Oceanographic Commission of UNESCO) and GOOS-Africa |
| | | Establish regional advisory groups and networking centres |
| | | Strengthen capacity of local communities to implement and monitor management plans |
| | II. High quality water to sustain balanced ecosystem | Strengthen the capacity of institutions to enforce mining and industry regulations |
| | III. Balanced habitats for sustainable ecology and environments | Develop national/regional HAB contingency plans which include early warning systems and guidelines for medical practitioners to deal with HAB-associated problems |
| Capacity Building Actions | I. Sustainable Fisheries | Develop community projects for cost effective environmental information gathering and environmental education |
| | | Conduct training in sustainable community-based mariculture |
| | II. High quality water to sustain balanced ecosystem | Assess regional training needs |
| | | Devise and implement appropriate training courses appropriate for the needs of the region |
| | | Improve networking among professionals in the region through meetings and exchanges |
| | | Develop realistic National Plans of Action for land-based sources and activities |
| | | Conduct survey on training needs and conduct training in land-based activities and sources (for high officials, mid-level government, community, experts, industry, etc.) |
| | | Conduct survey on educational needs to support reduction of land-based activities and sources and implement the activities to address three top priority regional educational needs, in appropriate languages |
| | | Develop a public participation and awareness (PPA) workplan for the Project |
| | | Undertake a participatory planning process for each hotspot to identify challenges and locally acceptable management mechanisms |

| Category | Major Issues | Interventions |
|---|---|---|
| | III. Balanced habitats for sustainable ecology and environments | Undertake a participatory planning process for each selected mangrove site of global and ecoregional importance to identify challenges and locally acceptable management mechanisms |
| | | Link with international mangrove conservation initiatives |
| | | Strengthen the capacity of NGO's and CBO's for community-based conservation measures |
| | | Implement local training programs through agricultural extension offices promoting alternatives to harvesting and cutting of mangroves |
| | | Work through agricultural extension offices to ensure that farmers are implementing practices to reduce nutrient discharge |
| | | Conduct community awareness projects linked to national ministries of health to alert the public to the dangers associated with HABs |
| | | Improve national capacity to analyze for toxins and identify harmful species by sharing expertise between countries |
| | | Devise national management structure/ framework/ plan for addressing coastal erosion |
| | | Promote environmentally sound community-based tourism development programme |
| Investment Actions | I. Sustainable Fisheries | Conduct a feasibility assessment for particular species in certain areas of the region |
| | | Promote establishment of extensive, semi-intensive and intensive fish culture and shrimp farming |
| | | Develop and demonstrate mechanisms to reduce by-catch |
| | II. High quality water to sustain balanced ecosystem | Implement a first periodic assessment (3-year interval) of the water quality and trends |
| | | Develop and implement simple primary treatment to manage domestic wastewater |
| | | Provide secondary sewage treatment to targeted coastal urban populations |
| | | Work with private sector to leverage financing for implementing wastewater discharge controls in targeted areas |
| | | Implement demonstration projects to bring best technology and practice to industrial discharges (e.g., pre-treatment, source control, process control) |
| | | Promote construction of reception facilities for marine debris/wastewater at ports |
| | III. Balanced habitats for sustainable ecology and environment | Develop and implement action plans for those sensitive areas where human impact is adverse |
| | | Develop Best Environmental Practices/Best Available Technologies for agriculture to reduce discharge of nutrients |
| Scientific Investigation Actions | I. Sustainable Fisheries | Complete assessment of status of vulnerable species and habitats |
| | | Implement biodiversity strategy, including species specific action plans |

| Category | Major Issues | Interventions |
|---|---|---|
| | | Assess feasibility of using information from the PIRATA moored buoy array in the tropical Atlantic to enhance understanding of the links between weather, climate and fish |
| | | Analyse plankton archives and other (oceanographic) data collections for baseline information to measure decadal change |
| | | Adapt/develop predictive mathematical models applicable to the region |
| | | Establish an annual regional forum for stock assessment, ecosystem assessment and information sharing on harmonization of management actions and co-management |
| | | Develop regional early warning system, assessment and prediction capability |
| | | Establish current levels and patterns of trade of selected species |
| | | Establish distribution and abundance of species |
| | | Identify areas where species are and are not threatened by over-exploitation |
| | | Establish criteria for "healthy" situation |
| | II. High quality water to sustain balanced ecosystem | Estimate the carrying capacity of the coastal waters using an ecosystem-based approach |
| | | Conduct regional assessment of priority land-based activities, sources of contaminants and pollutant levels |
| | | Develop common regional guidelines containing appropriate recommendations for decision makers for management of land-based point and non-point pollutant sources |
| | | Undertake assessment of coastal areas in order to determine priority coastal hotspots |
| | III. Balanced habitats for sustainable ecology and environment | Collect and/or verify baseline data on extent, diversity, local uses of mangrove products and management challenges |
| | | Evaluate sensitivity of areas and habitats in the GCLME and evaluate levels of human impacts on them |
| | | Undertake assessment of eutrophication in GCLME lagoons |
| | | Conduct assessment of the effects of infrastructure on coastal erosion on the Guinea Current coast |
| Data Management Actions | I. Sustainable Fisheries | Develop agreements and technology basis for the free and regular exchange of environmental data and information within the region |
| | | Promote innovative designs and fabrication of by-catch reduction devices for use by industrial shrimping vessels. |
| | | Implement demonstration projects for nipa palm utilization and mangrove restoration involving local communities and entrepreneurs. |
| | | Promote eco-tourism through livelihood generation from eco-services, and ecological products. |
| | II. High quality water to sustain balanced ecosystem | Develop data and information network and management system |
| | | Promote tertiary waste treatment technology where appropriate in highly industrialized coastal cities |

| Category | Major Issues | Interventions |
|---|---|---|
| | | Promote cooperative waste stock exchange centres in industrialized coastal cities |
| | | Undertake awareness programme involving government and the organized private sector on waste management through informal recycling and reuse of industrial products with viability as small-scale commercial enterprises. |
| | III. Balanced habitats for sustainable ecology and environment | Develop HAB reporting system for the GCLME region<br><br>Implement demonstration projects for nutrient reduction in effluent<br>Promote soft engineering options suitable for rehabilitation of eroded coastlines and coastal areas within the region.<br>Encourage community participation in coastal habitat rehabilitation and restoration for hot spots of PADH involving, NGOs and CBOs.<br>Work with private sector for alternative local building materials particularly low-cost options to reduce coastal sand mining (e.g. clay, laterite, etc). |

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