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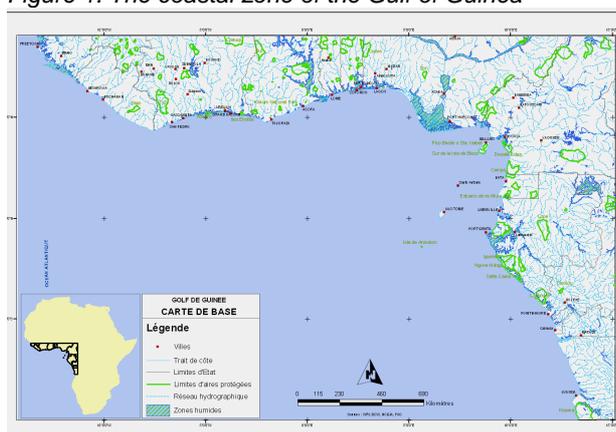
Introduction

Background Information to Coastal Wetlands of the Gulf of Guinea

Area of Intervention

The Gulf of Guinea falls in the tropical zone of West and Central Africa, stretching from Guinea to Angola (Figure 1). The coastal area is variable, comprising tropical forest, sandy beaches, mangroves, estuaries and coastal lagoons. It includes the extensive Niger Delta, which holds the largest tract of mangroves in Africa. The area has altered much in the last 100 years, witnessing significant economic development and the growth of major cities, including Abidjan, Accra, Cotonou, Lagos, Port Harcourt, Douala and Libreville. Some parts of the Gulf of Guinea are characterised by coastal lagoons, such as Lake Piso (Liberia), Ebrié and Aby Lagoons (Côte d'Ivoire), Keta and Songhor Lagoons (Ghana), Lac Togo (Togo), Lacs Ahémé and Nokoué (Benin), Lagos Lagoon (Nigeria), Nkomi and Ndogo Lagoons (Gabon), Lac Tchimpa (Congo) and Lago Chissambe (Cabinda, Angola).

Figure 1. The coastal zone of the Gulf of Guinea



Economic Importance of Coastal Wetlands

The coastal wetlands of the Gulf of Guinea are of significant importance to economic development. Many of the major cities are built on and/or around the coastal lagoons, such as Abidjan and Lagos. The lagoons provide natural harbours and excellent means for transport. Further, they support productive fisheries and provide other exploitable resources. Some lagoons are commercially important for salt production, whilst others are used for harvesting reeds and other natural resources, and for local irrigation and gardening. Many are also important for tourism and recreation, whilst some are managed primarily for nature conservation. The mangrove systems are of great importance; mangroves have multiple uses, and contribute significantly to the coastal integrity of the Gulf of Guinea. Estuaries of the region, such as the Estuaire du Cameroun, are also highly productive.

This coastal area is characterised by its global importance for oil. There are major oilfields in the region, notably in Nigeria, Cameroon, Gabon and, recently, Equatorial Guinea. Many of the oil wells, pipes and channels occur within coastal wetlands. These industrial developments have clearly affected the character and ecological integrity of the coastal zone. Some areas of this zone also support very high populations; several million people live in the

Niger Delta for instance. The rate of deforestation in some areas has been particularly high. Overall, there is a picture of widespread over-exploitation of natural resources and a need for sustainable management systems.

Importance of Coastal Wetlands for Biodiversity

The coastal wetlands of the Gulf of Guinea are of great importance for nature, supporting a diverse fish fauna, with high levels of endemism, and populations of West African manatee and Atlantic humpbacked dolphin, whilst the warm coastal waters are of international importance for breeding humpbacked whale. The globally endangered pygmy hippopotamus survives in coastal forests of Liberia. The threatened Pennant's red colobus is restricted to isolated forests in the Niger Delta and Bioko. Dwarf crocodile and slender-snouted crocodile are also found in this zone, as well as freshwater turtles, whilst the extensive beaches provide nesting habitat for up to five species of marine turtle. All depend on coastal wetlands.

The Gulf of Guinea is important for resident and migratory birds. Several coastal lagoons are of international importance for waterbirds; the coastal lagoons of Ghana regularly support significant numbers of birds, including the black tern and globally threatened roseate tern. There are globally important bird colonies in the Gulf of Guinea islands, notably at Annobón. There are also critically endangered birds in the islands of São Tomé and Príncipe, e.g. Rothschild's olive ibis and dwarf olive ibis. The estuarine and mangrove systems also support high numbers of waterbirds. The Anambra waxbill and Loango weaver are restricted species of the coastal zone.

The tropical forests of this zone are among the most diverse in Africa; this is one of the few areas where tropical forests reach the sea. Despite considerable threats, the Gulf of Guinea still supports significant biodiversity, and the coastal wetland habitats are an integral component of this ecosystem, from coastal swamp forests to coastal floodplains, estuaries, shallow lagoons and mangroves.

Threats to the System

There are diverse threats to the ecological integrity, natural productivity and biodiversity of coastal wetlands, including:

- Impacts of industrialisation, including pollution, especially from the oil industry
- Canalisation for transport and dredging of rivers
- Deforestation and habitat loss
- Draining of swamps, e.g. for irrigation, building, land development and timber extraction canals
- Loss of silt deposition, caused by dams upriver (e.g. Kainji Dam on the Niger River)
- Aquatic weeds, especially nypa palm and water hyacinth
- Bushmeat trade.

Although these threats are reasonably well known, they are not well documented on an ecoregional scale. Further, many threats are not reducing, and continued negative impacts will lead to species loss, traditional community systems being eroded and coastal zone destruction.

Gaps in knowledge, and the need for integrated research

Whilst the ecology of some wetlands is quite well known, there are widespread information gaps in the basic functioning of coastal wetlands throughout the zone. In

order to achieve long-term conservation goals and for wise use planning, it is important to document the baseline situation, which will enable the sub-regional and national importance of coastal wetlands to be ascertained. This will also aid prioritisation of conservation resources. Given the intense demographic pressures in this region, national policies also need to be reviewed and conservation measures intensified, in order to reverse current levels of over-exploitation of coastal wetlands.

Whilst threats to coastal wetlands are broadly known, they are neither well documented nor assessed. Threat analyses are required in order to identify the most vulnerable sites. Some threats need to be minimised as a matter of urgency. Coastal wetlands of the Gulf of Guinea provide livelihoods for many thousands of people. Economic valuations of these wetlands are required in order to gauge their contributions to local economies and the values of natural functions, such as prevention of coastal erosion. An integrated research programme is needed to make clear the links between natural functions and biodiversity and the economic values of wetlands.

These issues also need to be broadcast widely to increase a sense of ownership and value of coastal wetlands. Capacity of local agencies needs to be developed to enable wetland wise use programmes and policies to be managed effectively and locally. Lessons may be learned especially from the integrated ecological and wetland use surveys of Ghana and Benin.

Wetlands International and conservation networks of the Gulf of Guinea

At the national level, there is a wide range of government agencies and NGOs involved in managing coastal wetlands. There are also several sub-regional organisations, including the Centre for African Wetlands (CAW) in Ghana and ECOFAC (regional base in Gabon). Existing sub-regional networks include the West African Mangrove Network (WAMNET), the Network of African NGO's for the integrated Coastal Zone Management (Douala, Cameroon) and the West African Fish and Fisheries Association (WAFFA). A number of international conservation agencies have active support programmes in the region, including IUCN, WWF, BirdLife International, the Wildlife Conservation Society and Conservation International. Wetlands International has been actively engaged in the sub-region since 1998, mainly through support for capacity-building, wetland and waterbird surveys, development of fish biodiversity actions and a pilot project on radar remote sensing of wetlands.

Wetlands International Programme for Coastal Wetlands of the Gulf of Guinea

Integrating Research and Wise Use in four 'Wetland Ecoregions' of West Africa: Coastal Wetlands of the Gulf of Guinea: Preliminary steps towards an ecoregional programme

Wetlands, their biodiversity and natural productivity in the Gulf of Guinea are under high threat. In this region, natural ecosystems are subject to ever-increasing pressures from economic developments and population pressure. Wetlands International thus launched a three-year programme focused on this region, entitled *Coastal Wetlands of the Gulf of Guinea: Preliminary steps towards an ecoregional programme*. This programme is one of four components of a wider ecoregional programme funded by

The Netherlands government entitled *Integrating Research and Wise Use in four 'Wetland Ecoregions' of West Africa*. The programme in the Gulf of Guinea aimed to document the status of and threats to coastal wetlands in this region, and to identify and recommend wise use actions, with a special focus on coastal lagoons.

Partnerships were forged and/or strengthened for the identification of future conservation action and programme development. Further, the programme included active promotion of environmental conventions, especially the Convention on Wetlands (Ramsar, Iran, 1971) and the African Eurasian Migratory Waterbird Agreement (AEWA).

Programme Goal

To draw up integrated wise use and conservation recommendations for coastal wetlands of the Gulf of Guinea, based on a review of their extent, ecological functioning, biodiversity and socio-economic importance.

Ecoregional Workshop, Pointe-Noire, Congo, 19-22 April 2005

A key activity under the programme was an ecoregional workshop, which was held in Pointe-Noire, Congo in April 2005, in collaboration with the government of The Congo. The main objectives of the workshop were to:

1. Develop a sub-regional network of focal points for conservation of coastal wetlands of the Gulf of Guinea.
2. Develop a draft applied Wetland Inventory of the coastal area of the Gulf of Guinea.
3. Identify priority sites for conservation, monitoring and wise use initiatives.
4. Select habitat restoration demonstration projects for integrated conservation and wise use of coastal wetlands.
5. Develop the framework for a sub-regional programme proposal to raise alternative funds for:
 - a. Improving capacity in the Gulf of Guinea for planning and implementing wetland conservation and wise use.
 - b. Conservation and wise use action at selected sites.
 - c. Increasing wetland policy adoption through a broadened support for and membership to international environmental conventions.
6. Set up an expert group to develop draft guidelines for bioindicators for coastal lagoons.

Between 2004 and 2006, Wetlands International supported a wide range of targeted coastal wetland inventories throughout the Gulf of Guinea, whilst other initiatives have also taken place in several countries within the last ten years. In order to develop an applied wetland inventory of the Gulf of Guinea, up-to-date information has been compiled from each country. Workshop participants were asked to present information about the coastal wetlands in their country, focusing especially on current land use practices, constraints and threats, with recommendations for conservation and wise use of sites. Information on requirements for improving national capacity and resource needs was also included. During the workshop, sub-regional analyses were made to prioritise site conservation action throughout the region, to identify links between sites and to recommend conservation initiatives at the sub-regional and national level.

Workshop Report

Opening Ceremony and Introductions

The workshop was opened by the Minister of Forest Economy and the Environment of The Congo, Mr. Henri Djomba, who was happy that Pointe-Noire was chosen as the workshop venue. The Minister also hoped that Wetlands International would open a Central Africa office in Congo. Presentations followed from Seydina Issa Sylla, Wetlands International Africa Programme Director, Abou Bamba, Africa Programme Officer of the Ramsar Bureau and Jérôme Mokoko Ikonga, Deputy Director of WCS-Congo. Immediately afterwards, all participants introduced themselves and a number of expectations were collected by Abdoulaye Ndiaye, Africa Programme Deputy Director of Wetlands International. These are presented below:

Workshop Expectations	
1.	Improved knowledge of the coastal zone and its conservation priorities, with plans outlined for research and inventory.
2.	Conduct inventories; support research programmes.
3.	Priority areas for freshwater taxa identified.
4.	Valuation of natural resources for poverty alleviation.
5.	A better understanding of the Gulf of Guinea ecoregion, and an action plan for valuation.
6.	Valuation of wetlands and their potential uses, especially mangroves and coastal lagoons.
7.	Evaluation of impacts of developments and conservation programmes in the coastal zone.
8.	Analysis of threats: review and propose solutions to the degradation of coastal habitats, such as coastal lagoons and lakes, and mangrove destruction.
9.	Data collected to elaborate conservation strategy.
10.	Central Africa Programme for coastal wetlands.
11.	Sub-regional Conservation Action plan and the means to implement it; concrete programmes for networking and conservation action.
12.	A systematic management plan for the coastal wetlands, including socio-economic factors.
13.	Mechanisms and strategies developed for restoring aquatic ecosystems, and rehabilitation of habitats integrated into programme.
14.	Resulting concrete community actions, involving youth and local populations.
15.	Improved conservation of coastal and marine ecosystems.
16.	Plans developed for protection of fragile habitats.
17.	Design viable and cost-effective strategies for sharing experiences and knowledge.
18.	Practical actions identified, with 'continuity in action' and demonstration projects developed.
19.	Implement proposed actions that directly contribute to the NEPAD Action Plan.
20.	Exchange of experiences.
21.	Discover and develop synergy with partners.
22.	Strengthen capacities; strategies for CEPA.
23.	Establish a Wetlands International presence in the sub-region and a coherent Central Africa Programme and coordination role.

Tim Dodman (Wetlands International Associate Expert) provided information on the background, aims and objectives of the workshop (see Introduction above).

Status of Coastal Wetlands of the Gulf of Guinea

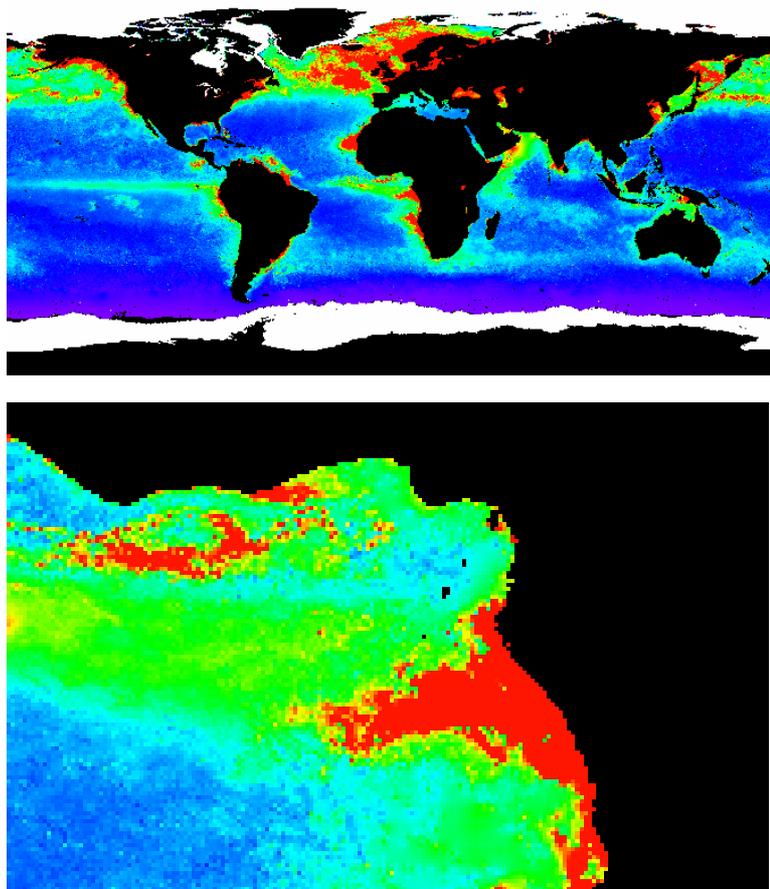
The first session of the workshop aimed to provide all participants with an overview of the current status of wetlands in the coastal zone of the Gulf of Guinea. There were two sub-regional and 13 national presentations.

Coastal wetlands of the Gulf of Guinea: Priority zones for Central Africa (Andre Kamden Toham, WWF)

The coastal zone of the Gulf of Guinea is of great sub-regional importance for fisheries and supports a rich reservoir of aquatic diversity. It also has a high potential for ecotourism.

The marine waters of the Gulf of Guinea are heavily influenced by the discharges from a number of rivers into the Atlantic Ocean, notably the Congo and Ogooué rivers, which contribute to create one of the most productive marine environments in the tropics (Figure 2). The outflow from the Congo River in particular has a significant impact on two large marine ecosystems, namely the Guinea and Benguela Currents.

Figure 2. Global (top) and regional (below) primary marine productivity during August 1997, based on data from satellite imagery of sea surface temperature and chlorophyll content. Red indicates a high productivity area (WWF).



Freshwater ecoregions of Congo Basin

The Congo Basin itself is extremely rich in biodiversity, and several aquatic ecoregions have been identified under WWF's Global 200 Initiative. There is also a high level of endemism, and approximately half of the more than 1,000 species of fish in the basin are endemic. However, the basin is very vulnerable to impacts, and since about 1900

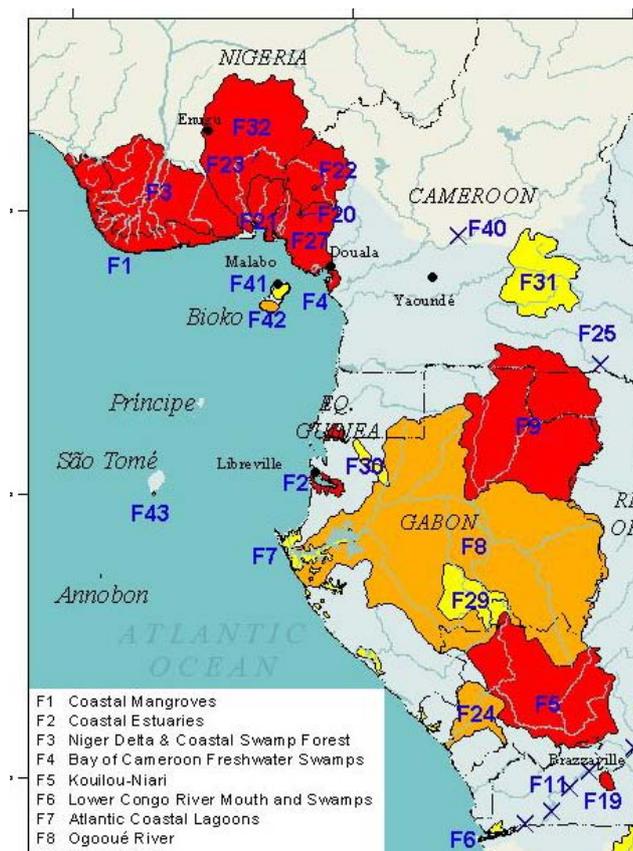
around half of its wetlands have been destroyed. In the Gulf of Guinea, the moist tropical forest zone has become one of the new frontiers for development, notably for oil production and timber extraction.

In order to identify solutions to combat further loss of habitat in the region, WWF organised an ecoregional workshop for the Congo Basin in Libreville in 2000, which yielded a long-term vision for the basin based on sound scientific and socio-economic data. The overall aim of this assessment was to build the foundation for a regional conservation strategy, which would:

- Ensure conservation of representative examples of biodiversity;
- Ensure conservation of areas large enough to allow the most sensitive species and ecological processes to persist;
- Focus attention to take advantage of opportunities and to address threats.

During the workshop, 50 freshwater priority sites for conservation action and ecological integrity were identified in the Guinean-Congolian Freshwater Region. Within the coastal zone, several habitats and sites were highlighted. Figure 3 illustrates sites for the coastal zone area.

Figure 3. Freshwater Priorities for Conservation Action in the Congo Basin: extract of coastal sites (WWF)



The main coastal areas identified were:

- F1. Coastal mangroves, including the Niger Delta, the Rio del Rey, the Baie du Cameroun and the zone from Port Gentil to Kouliou.
- F2. Coastal estuaries, including the Ogooué Delta and Rio Muni: important for their high productivity and support of migratory birds (mudflats) and marine

turtles (beaches). The beaches south of Mayumba in Gabon and the island of Corsico are of high importance for turtles.

- F3. Niger Delta and coastal swamp forest.
- F4. Bay of Cameroon Freshwater Swamps.
- F6. Lower Congo River mouth and swamps
- F7. Atlantic Coastal Lagoons, including the lagoons of south Gabon and Congo, often surrounded by mangroves and swamp forest.
- F8. Ogooué River: The Ogooué delta is one of the largest, most intact and least well-known mangrove and freshwater swamp systems in Africa, containing a unique assemblage of plants and animals.
- F24. Lower Kouliou to Sunda.
- F43. Mangroves / Lagoon near Porto Alegre (São Tomé).

Priority survey areas were identified in the coastal zone in the Niger Delta, and at coastal wetlands of Cameroon, Equatorial Guinea, Gabon and Congo.

Coastal wetlands of the Gulf of Guinea : Priority zones for West Africa (Mame Dagou Diop Ndiaye)

The coastal zone of West Africa comprises the western seaboard from Mauritania to Sierra Leone and the Gulf of Guinea from Liberia to Nigeria and Cameroon. There are some ecoregional conservation, development and strategic planning initiatives for the western seaboard. One pioneering initiative for coastal zone conservation in this zone is the PRCM (Regional Programme for the Conservation of Marine and Coastal Resources). This framework groups together international NGOs and national partners and acts as a vehicle for coordination, fund-raising and strategic planning. Such a framework could be very useful for the Gulf of Guinea coastal zone.

The coastal wetlands between Liberia and Cameroon are of great economic importance to West Africa. Many of the major cities of the region are built around or near coastal wetlands, such as Abidjan, Accra, Lagos and Douala. The coastal zone accounts for about 60% of the industries of the region, including textiles, food and mineral exploitation. Offshore and inshore fisheries are vital for local economies and provide protein to growing populations. Other products are also harvested in coastal wetlands, including salt, reeds and firewood, whilst irrigation and gardening are widespread. Some sites are important for tourism and recreation, especially due to their proximities to major cities. A number of coastal wetlands are of high cultural value, these waterways being integral to the formation of some of the region's great empires.

Some of the main threats to coastal wetlands in the Gulf of Guinea between Liberia and Cameroon are :

- Drainage for land reclamation, canalisation, irrigation and other developments
- Pollution, especially from the oil industry
- Overfishing
- Deforestation and habitat loss
- Aquatic weeds, e.g. nypa palm and water hyacinth
- Over-exploitation of natural resources, including bushmeat
- Weaknesses in legislation, e.g. in land tenure.

It is important to monitor the state of these wetlands and to plan better for their conservation and wise use as functional, productive and valued sites.

National Presentations

There were national presentations on the status of coastal wetlands from each of the 13 countries of the Gulf of Guinea coastal wetland zone, as given in the table below:

Country	Presenter	Title of Presentation
Liberia	Moses Massah	Status of coastal wetlands of Liberia
Côte d'Ivoire	Germain Bomisso	Les zones humides ivoiriennes:potentialites, defis et perspectives
Ghana	Edward Koomson	Conservation and management of coastal wetlands in Ghana
Togo	Koffi Hounkpe	Quelques donnees sur l'etat actuel des zones humides cotieres au Togo
Benin	Iro Hachimou / J. Adjakpa	Statut des zones humides cōtières du Benin
Nigeria	Mrs Christiana Oshunsanya	Coastal wetlands of Nigeria
Cameroon	Gordon Ajonina	Status of Cameroon coastal wetlands
Equatorial Guinea	Crisantos Obama	Caractérisation des principales zones humides protégées de Guinée Equatoriale
Gabon	Dieu-Donné Kumbaht Mouloungui	Atelier ecoregional sur les zones humides cōtières du Golfe de Guinée : Situation du Gabon
Congo	Bockandza-Paco	Zones humides cōtières du Congo
Democratic Republic of Congo	Robert Shutchosungu	Cas de Parc Marin des Mangroves
Angola	Ms Ana Paula dos Santos Correa Vitor	Programa de Monitoramento de Aves Aquáticas em Zona Húmida da Lagoa de S. Brás (Namibe)
São Tomé and Príncipe	Victor Manuel do Sacramento Bonfim	Atelier ecoregional sur les zones humides cōtières du Golfe de Guinée : Republique de São Tomé et Príncipe

These national presentations are not reproduced in this report. However, all of them contribute directly to the sub-regional inventory of coastal wetlands of the Gulf of Guinea published by Wetlands International in 2006.

Conclusions from national presentations

There were fruitful discussions and debates arising from the national presentations, and a number of conclusions and observations were drawn up.

Firstly, participants agreed that there were many similar coastal wetlands in the Gulf of Guinea between Liberia and Angola, which are confronted with similar problems and conservation issues throughout the sub-region. There was thus wide endorsement for the formation of a sub-regional network that should develop a long-term strategy for the wise use of these fragile habitats, which are heavily utilised across the region.

The coastal wetlands of the Gulf of Guinea are generally open systems with continental (rivers) and marine (Atlantic Ocean) influences. There is widespread degradation of coastal wetlands, mostly caused by human activities. Climate change impacts may also result in changes to the coastal wetlands in future years.

There is a wide lack of quantitative and qualitative knowledge about the biodiversity and functioning of the wetland ecosystems of the Gulf of Guinea.

There are some conservation efforts underway, including policy development, inventory, research, and awareness, but there are high expectations and strong needs for further concerted conservation action.



Participants listen to a presentation (Tim Dodman)

Sub-regional actions for the conservation and monitoring of biodiversity

Victor Mamonekene (Université Marien Ngouabi, Congo) presented an overview of aquatic biodiversity in the coastal zone of the Gulf of Guinea. The mangrove-dominated habitats are particularly important, with key plants represented being species of *Rhizophora*, *Avicennia*, *Phoenix* and *Raphia* and *Pandanus candelabrum*. Freshwater plants include *Cyperus papyrus*, *Vossia cuspidata*, *Crinum natans*, *Nymphaea sp.*, *Echinochloa spp.* and *Naja sp.*, although some invasive weeds are also prevalent, notably *Salvinia nymphetulla* and *Pistia stratiotes*.

Faunal groups of high economic importance and biodiversity include crustaceans (crabs, shrimps etc.), molluscs and fish. There are many fish of commercial interest, as well as others that are not widely harvested, such as cichlids and pipefish.

Amphibians are not so widely known, despite the occurrence of many species. Reptiles include crocodiles, monitor lizards and freshwater and marine turtles. The zone is used widely by resident and migratory waterbirds, whilst other types of birds are also typical of the coastal zone. Aquatic (and semi-aquatic) mammals include the West African manatee, dolphins, common and pygmy hippopotamus and otters. Many other mammals of adjacent habitats also depend on the availability of water sources, and frequent coastal lagoons.

Sub-regional Recommendations

- a. Build knowledge of biodiversity into the objectives of projects affecting biological resources of wetlands.
- b. Undertake an inventory of faunal groups not yet studied in the coastal zone (e.g. molluscs, crustaceans, insects, reptiles, amphibians).
- c. Continue to monitor floral and faunal groups already inventoried to better understand their potential.

Working groups were then set up to address biodiversity conservation issues and actions for flora, fish, aquatic mammals, waterbirds and other taxa, yielding the results below.

Working Group Results

1. Flora: Actions, research needs and habitats

a. Problems

- Insufficient qualitative and quantitative information.
- Lack of diffusion of knowledge in the countries.

b. Proposed Actions

- Build public awareness of the importance of plants.
- Inventory and monitoring of plants and plant communities.
- Capacity building in plant and ecosystem studies.
- Identify and restore degraded zones.
- Controlled exploitation of invasive plants.
- Document and valorise traditional knowledge of flora.
- Set up conservation policies for sustainable management.



Raphia, Conkouati, Congo (Tim Dodman)

c. Research needs

- Sylvicultural studies.
- Studies of the dynamics of plant communities.
- Impact assessments: ethnobotany, degradation, pollution.
- Flora-fauna interactions.
- Research into indicator and invasive plants of certain zones.

d. Identification of priority wetland habitats

- Mangroves.
- Flooded forests and flooded savannas.
- Swamp forests.
- Gallery forests.
- Rivers, lagoons and lakes invaded by floating aquatic plants.

2. Fish: Priority actions

a. Short-term Actions

- Inventory of fish in all river basins emptying into the Atlantic Ocean.
- Prepare and disseminate information materials of the fish of the sub-region.
- Identify spawning grounds and areas of strong potential for production.
- Create a sub-regional database.
- Environmental education on the management of aquatic habitats.
- Promote research in ichthyology.
- Encourage university training modules in ichthyology.
- Promote the need for and execution of environmental impact assessments before all management projects or before the introduction of exotic species.
- Document the impacts on aquatic ecosystems due to petroleum exploitation or extractive industries.
- Analyse needs and inadequacies for the implementation of fish conservation actions.

b. Mid-term Actions

- Research the biology of fish, notably aspects important for management, such as reproduction and migration.
- Collate information on all fish species on the IUCN Red List.
- Identify indicator and declining fish species, especially fish in danger of extinction.



Triggerfish, São Tomé (Tim Dodman)

c. Long-term Actions for Coastal Wetland Habitats

- Develop and implement monitoring programmes.
- Create mechanisms for financing the promotion, sustainable management and conservation of aquatic resources.
- Develop appropriate mechanisms for the conservation of lagoons (Ramsar, field projects, creation of interest groups etc.).
- Promote demonstration sites where conservation and wise use are combined for the benefit of local people.
- Study the productivity and resilience of lagoons, notably of brackish waters.
- Study the water cycle at coastal sites.
- Study the impact of forest cover on the functioning of lagoons.
- Study the impact of exotic introduced species on native species.
- Ecological study of the role of flooded forests.
- Study the significance of native plant species on the maintenance of ecological processes.

3. Birds

a. Problems

There is a general lack of knowledge about birds across much of the coastal zone.

b. Proposed actions

- Coordinate and carry out systematic annual waterbird counts under the African Waterbird Census in coastal wetlands of the Gulf of Guinea.
- Research the biology, reproduction and migration of waterbirds of the Gulf of Guinea coastal zone, in particular terns and African skimmer.
- Extend the study programme of otoliths into the coastal zone of the Gulf of Guinea in order to establish a practical research programme investigating the feeding behaviour of colonial birds and to consider their potential role as indicators of fish availability.
- Enhance the status of targeted training centres and strengthen their role and capacity.
- Identify threatened and indicator species.
- Study the habitats of waterbirds.
- Ring trans-equatorial and Palearctic migrants in the estuaries and river mouths of the Gulf of Guinea.
- Promote affiliations to AFRING, and endeavour to equip West and Central African countries with their own bird rings.
- Educate and sensitise local populations to birds, bird conservation and bird rings.
- Train journalists working with wetland specialists of the Gulf of Guinea in issues concerning birds.

- Produce educational and awareness materials such as posters, atlases and teaching aids.
- Study seabirds.
- Enhance the status of Important Bird Areas and other sites of interest for birds in the Gulf of Guinea.

c. Provisional list of coastal sites important for birds

- Liberia: Lofa River Mouth & Lake Piso
- Côte d'Ivoire: Parc National d'Azagny
- Ghana: Amansuri, Muni-Pomadze, Densu Delta, Sakumo, Songor & Keta Lagoon
- Togo: Lac Togo
- Benin: Lac Nokoue & Boucle du Roy (non-breeding terns present).
- Nigeria: Niger Delta, Calabar estuary
- Cameroon: Estuaire du Cameroun, Sanaga River, Rio del Rey
- Equatorial Guinea: Annobón
- Gabon: Baie de Corsico, Estuaire du Gabon, Ogooué Delta (and lacs Anengué & Ogonié)
- Congo: Conkouati-Douli
- DR Congo: Parc Marin des Mangroves
- Angola: Mussolo Bay, Namibie coastline
- São Tomé & Príncipe: Ilhas Tinhósas



Little Egret, Rio Cuanza, Angola (Tim Dodman)

4. Mammals

a. West African Manatee case study

In addition to the working group on mammals, there was a fascinating presentation on findings from a West African manatee research programme in the Fresco Lagoon of Côte d'Ivoire by Dr. Akoi Kwadio (WCS, Côte d'Ivoire). At this site, the density of manatees is around 1.6/km. The average length of the animals is 2.6m. Most sightings were of 1-2 animals, so group sizes are characteristically low. Manatees have high site fidelity; their mean territory in the dry season is 4.8km² and in the wet season 11km². The most frequent 'activity' is resting, accounting for around 50% of the observations. Manatees tend to rest by day and feed by night. Manatee activity also changes with tidal stages. The most popular food item is the grass seashore paspalm *Paspalum vaginatum*. The presence of people significantly affects the manatee's behaviour. However, most people do not consider the manatee to be a problem, though there are incidents of damage to fishing nets by manatees.



West African Manatee on sign for Conkouati-Douli, Congo (Tim Dodman)

Key recommendations for the survival of manatees at this site include:

- environmental education and public awareness;
- control of the number of people fishing in the lagoon;
- marking out and controlling access to areas of high manatee density; and
- wise use of forests that protect freshwater sources for the lagoon, and their biodiversity.

b. Recommendations for Aquatic and Wetland-dependent Mammals of the Gulf of Guinea

- Draw up a list of aquatic, semi-aquatic and wetland-dependent mammals of the region
- Assess the status of these mammals in the region and determine conservation priorities
- Develop a working conservation action plan for aquatic / wetland-dependent mammals of the Gulf of Guinea
- Recognise the role of wetlands in supporting other terrestrial mammals
- Advocate and promote targeted research programmes of aquatic mammals, and extend the manatee research of Côte d'Ivoire to other appropriate sites, such as Conkouati, Congo.
- Form an informal network of people interested in mammal conservation in the coastal zone of the Gulf of Guinea
- Note the particular need for research and conservation of the West African manatee, Atlantic hump-backed dolphin, pygmy hippopotamus, common hippopotamus and monkeys of the coastal swamp forests
- Set aside conservation areas (or consolidate existing protected areas) for these species in the coastal zone
- Recognise the importance of coastal lagoons, estuaries and swamp forests for mammals
- Build widespread awareness about conservation needs of aquatic mammals of the Gulf of Guinea, especially amongst fishing and wetland communities
- Lobby for conservation of species in an unfavourable status in the Gulf of Guinea.

5. Less well-known taxa (crustaceans, molluscs, reptiles and amphibians): Proposed actions

- a. Create a regional network for the identification of species.
- b. Capacity building.
- c. Inventory for a better understanding of sites and species.
- d. Appreciate the economic values of species, in monetary terms, for their importance for local communities and for their potential, for instance for aquaculture.
- e. Put in place legal instruments and institutions to protect species, which clearly define mechanisms for involving local people in their implementation.
- f. Establish appropriate communication mechanisms for local populations, including training of media if needed in local languages, in order to build awareness of the need for wise use of species.



Crabs, Embouchure du Conkouati, Congo (Tim Dodman)

Sub-regional actions for an improved appreciation of the values of coastal wetlands

Iro Hachimou presented a case study of the economic and cultural values of wetlands in Benin. This was followed by group discussions, which aimed to rank the uses and economic values of coastal wetlands, as well as examining the most important attributes of cultural significance.

Economic and cultural values of wetlands: example from Benin (Iro Hachimou)

Economic values of coastal wetlands in Benin

1. Fishing: Around 300,000 people are involved in artisanal and maritime fisheries in Benin. A common method of fishing is *akadja* - the use of traditional fish barrages constructed within lagoons.
2. Agriculture: Market gardening, including growing vegetables at lagoon edges when water levels recede, and rice cultivation.
3. Livestock farming: both conventional and unconventional, through rearing of a race of 'lagoon cattle', which has become adapted to lakes and has high resistance to water-borne diseases.
4. Provision of water: for direct use by people and animals, also for building and industry etc.
5. Coastal mangroves and swamp forests provide important services and resources, including fuelwood, medicinal plants, wild fruits, areas cleared for plantations (notably palms), bushmeat (e.g. cane-rats).
6. Energy: Hydropower (upriver) and petroleum developments (offshore and onshore).
7. Mining: Salt is extracted by heating water of salty soils in the mangrove zone.
8. Artisanal crafts: Wooden sculptures and other products.
9. Tourism: cultural tourism and ecotourism are both important in the coastal zone, with the floating village of Ganvié being a major attraction.



Coastal lagoon, Benin (Jacques Adjakpa)

Cultural values of coastal wetlands in Benin

1. 'Eco-cultural' zone: The coastal zone of Benin was an important area during the heinous period of the slave trade, and the town of Ouidah was the major exit point for slaves destined for the Americas.
2. Sacred sites: There are sacred lagoons for the preservation of biodiversity.
3. Totem species: Certain animals have cultural significance in some beliefs, particularly snakes and crocodiles, which are protected in some areas through sanctuaries.
4. Symbolisation of 'man and water'. There is widespread significance of water and the coastal lagoons in local beliefs and traditions. An example is the unique traditional practice of *akadja*.

Ranking the uses of coastal wetlands

A working group addressing the different uses of coastal wetlands developed the list below of important uses of wetlands for different habitats.

Utilisation / Importance	Habitat Types
Support of biodiversity: Sites for habitation, migration and reproduction of different taxa of economic importance (crustaceans, fish, reptiles, birds and mammals)	Lagoons, marshes, lakes, estuaries, marine waters, mangroves, sandbanks
Provision of shelter and feeding areas for fish	Mangroves, marshes
Diversity of coastal habitats for multiple uses	Lagoons, marshes, lakes, estuaries, marine waters, mangroves
Fishing / fisheries	Lagoons, marshes, lakes, estuaries, marine waters, mangroves
Communication / transport routes	Lagoons, lakes, estuaries, marine waters
Hunting and harvesting of plants / vegetables (for food, wrapping materials, crafts, energy, ornaments etc.)	Mangroves, marshes
Agriculture	Mangroves
Salt production	Mangroves, marshes, saline lakes / lagoons
Protection from erosion (wave erosion of banks, wind erosion)	Mangroves
Habitation	Mangroves
Sand extraction	Sandbanks, beaches
Collection of turtle eggs	Sandbanks, beaches
Tourism	Sandbanks, beaches, mangroves, lagoons, lakes
Dumping rubbish	Mangroves, beaches, marine water
Construction of large works (barrages, ports, installation of pipelines etc.)	Mangroves

Economic values of coastal wetlands

a. Principal values

- Transport
- Food production
- Ecotourism
- Salt production
- Fuelwood harvesting.

b. Actions recommended for improving knowledge and appreciation of the economic values of wetlands

1. Identify institutions and individuals with capacity and experience to conduct evaluations in the region.
2. Carry out an inventory of, and document, economic valuations carried out so far in the sub-region.
3. Carry out a gap analysis of information and capacity pertaining to economic valuation.
4. Develop a programme and Terms of Reference for performing a valuation of coastal wetland resources in the Gulf of Guinea, which should include capacity building and a standardisation of approaches.
5. Establish a sub-regional database on coastal wetland resources.
6. Identify two demonstration sites on the basis of accessibility, revision studies carried out and sub-regional balance.
7. Conduct a programme of integrated research for the economic valuation of coastal wetlands in the sub-region.
8. Disseminate results to decision makers, communities, researchers and other stakeholders.



Collecting shellfish in Mussulo Bay, Angola (Tim Dodman)

Cultural values of coastal wetlands

a. Cultural uses of wetlands

1. Wetlands as sacred sites for biodiversity conservation

- Sacred coastal forests, including mangroves and semi-deciduous dense forests
- Sacred lakes and lagoons, as spawning grounds for aquatic fauna.

2. Wetlands as bastions of civilisation of coastal peoples of the Gulf of Guinea

- Lake and lagoon settlements
- Fishing practices
- Habits and customs of wetland communities
- Dietary customs.

3. Historic monuments of the coast as sites for remembrance and tourism

- Slave routes and monuments
- Coastal forts (built by Europeans, e.g. French, Portuguese, Dutch, British, Danish)
- Colonial architecture of old buildings.

b. Priority sites of cultural significance along the Gulf of Guinea coast

1. Côte d'Ivoire

- Grand Bassam: Fête de l'Abissa

2. Ghana

- Coastal forts, such as Elmina Castle

3. Togo

- Lake Togo / Togoville: cultural and historical centre

4. Benin

- Vodounto at Ouidah – sacred lagoon traditionally inhabited by deities (acts as a fish refuge)
- Mitogbodji – ancient fishing village and sacred mangrove (*Avicennia*) island in Lac Ahémé
- Ganvié and the floating villages of Lac Nokoué
- Slave route and Port of No Return memorial at Ouidah

5. Nigeria

- Niger Delta: Traditional villages, festivals, regattas
- Calabar

6. Equatorial Guinea

- Island of Annobon / Pagalu

7. Congo

- Slave route at Matombi

c. Recommendations

It is recommended to make an inventory of the priority cultural sites of the coastal zone of the Gulf of Guinea. The threats at these sites should be documented, and steps taken to restore threatened sites. At all sites of cultural significance, it is recommended to promote their cultural values for national heritage and tourism.

Ranking of threats and prioritisation of sites

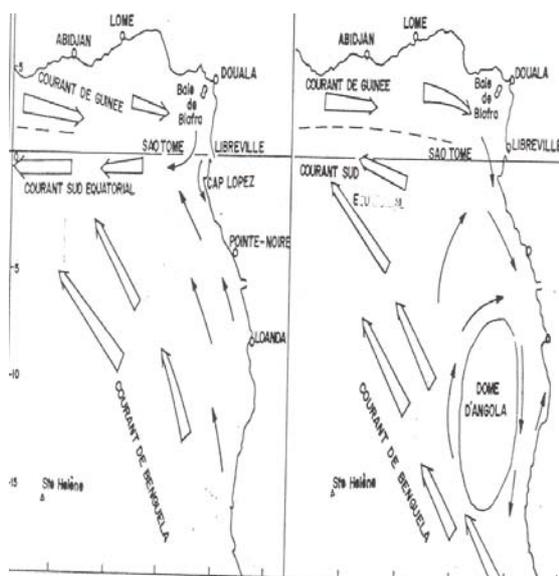
A presentation was given on oil pollution in the coastal zone of the Gulf of Guinea, after which working groups were formed to rank threats and prioritise sites for conservation and wise use action.

Petroleum pollution in the coastal zone (Marius Issanga-Ngamissimi, Director General, Environment Plus)

The petroleum industry presents a significant source of pollution risk, both onshore and offshore. Offshore pollution impacts are influenced by four main currents affecting the Gulf of Guinea (Figure 4):

- Benguela Current from Namibia in the south, moving towards Angola
- Angola Current
- Guinea Current, moving east and south-east along the coast towards Equatorial Guinea; sources from the North Atlantic Counter Current and Canary Current
- South Equatorial Current

Figure 4: Currents affecting the Gulf of Guinea

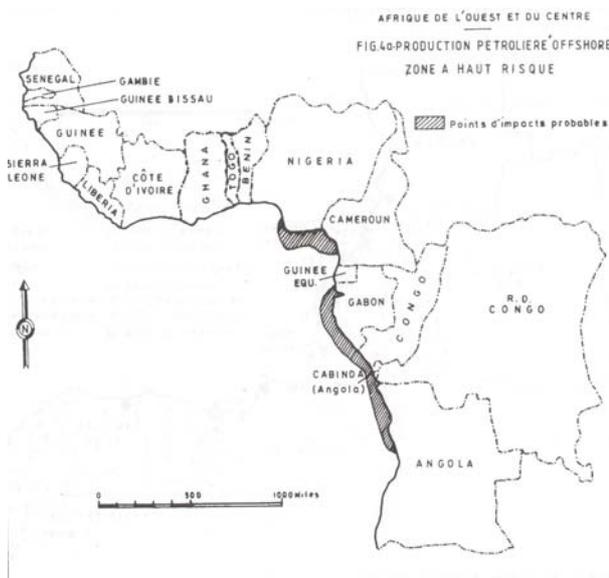


These currents and the discharges from major rivers affect the movements of oil spills within the marine waters of the Gulf of Guinea. The most likely zone of impact from offshore petroleum pollution and oil spills are along the coastline from Nigeria to Angola (Figure 5).

Oil spills are most likely to occur close to the main petroleum ports of the region, which include Abidjan, Lomé, Lagos, Port Harcourt, Bata, Kribi, Cap Lopez, Port Gentil, Pointe-Noire, Cabinda and Luanda.

With a level of production surpassing 4 million barrels per day, the petroleum industry in West and Central Africa constitutes a major source of pollution from operational and accidental spills.

Figure 5: High risk impact zones from offshore oil spills



- Operational Spills
 - Drilling (exploration and exploitation)
 - Discharge of fluids and gaseous effluents
 - Discharge of chemical products
 - Harbour discharges
 - Telluric discharges
- Accidental Spills
 - Uncontrolled irruption from wells
 - Collision of boats / ships
 - Rupture of marine or land-based pipelines
 - Explosion of boats / ships.

Coastal Impacts

Oil pollution can negatively affect fragile coastal ecosystems, especially mangroves, estuaries and beaches, and can directly impact fish and fisheries, aquatic biodiversity and spawning grounds of fish and turtles. A preliminary indicator of pollution is the presence of plants washed up (dead) on beaches.

Legal instruments for cooperation

a. Abidjan Convention

One instrument for sub-regional cooperation in relation to oil pollution is the Abidjan Convention. This is an international agreement that provides a legal framework for national and sub-regional cooperation for the protection and development of the marine and coastal environments of the West and Central African region. Contracting Parties are obliged to combat rapidly and effectively both major and minor instances of pollution, and must work together to control oil pollution in the region.

Objectives of the Abidjan Convention

- Evaluate environmental state, especially impacts on marine and coastal habitats.
- Promote socio-economic activities that favour environmental sustainability.
- Elaborate regional agreements and improve national legislation with respect to the environment and sustainable development.
- Establish inter-institutional mechanisms and provide necessary funds for the execution of programmes.

b. OPRC: International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990

This is a legal framework for international cooperation for the preparation for and combating oil pollution incidents. It aims to reduce the impacts of major oil spills, to encourage states to develop appropriate means to tackle such events and to facilitate international cooperation and mutual assistance.

Sub-regional agreements, such as guiding papers of the Communauté Economique et Monetaire d'Afrique Centrale (CEMAC) also provide opportunities for sub-regional cooperation.

Implementation of agreements

A key step required by all countries is the elaboration of national Emergency Response Plans, which should aim to encourage efficient planning in the case of an emergency, and which provides a framework for cooperation between government and the petroleum industry. Training is also required in relation to environmental impacts and their assessments.

However, several countries have not yet elaborated Emergency Response Plans, nor harmonised their legislation under the Convention, whilst sub-regional cooperation is in need of further strengthening. Cooperation for combating pollution also needs to be strengthened between oil companies and governments. Most countries lack maps of the coastal zone, which should indicate clearly the most sensitive coastal areas to the effects of oil pollution. Another issue is that international and national laws are not always respected.

Recommendations for APPA

In the framework of its integration vision the Association of African Oil Producing Countries (APPA) should:

- Contribute to the set-up of networks for the circulation of environmental information,
- Establish a network of national environmental focal points for APPA in order to facilitate the use and transfer of technical information,
- Contribute to implementing an alert system.

It was noted that many countries do not take the Abidjan Convention seriously, that pollution incidents have led to some serious cases of conflicts in the region, and that the principle of 'who pollutes should pay' should be adopted. It was widely agreed that regional cooperation is essential for meeting the risks of pollution, as pollution in one country can adversely affect other countries.



Oil pollution near Pointe-Noire, Congo (Environment Plus)

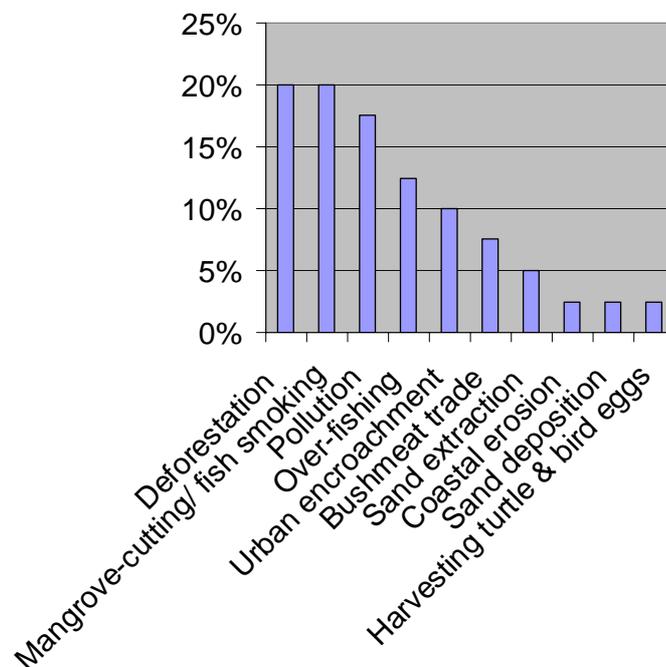
Direct threats to Coastal Wetlands and Biodiversity

A number of direct threats to coastal wetlands and their biodiversity were identified during the workshop, including:

1. Deforestation
2. Mangrove cutting, especially for fish-smoking
3. Pollution
4. Over Fishing or Unsustainable fishing
5. Urban Encroachment
6. Bushmeat trade
7. Sand extraction
8. Coastal erosion and sand deposition
9. Harvesting of turtle and bird eggs
10. Canal Dredging
11. Mining

These were ranked by participants in the order presented above and in Figure 6, noting however that the ranking may be somewhat biased as some countries were under-represented.

Figure 6. Ranking of threats to coastal wetlands by workshop participants



Nevertheless, it is clear that deforestation, mangrove loss and pollution are widely considered as the main threats to coastal wetlands in the Gulf of Guinea. Some threats are directly linked. For instance, canal dredging may be perceived as a low threat now, but canals cut in the Niger Delta in the past have contributed to improving access to remote parts of the delta and now directly contribute to the highest threat, deforestation.

The bushmeat trade is a major threat to biodiversity in West and Central Africa, but is more of an issue in tropical forests than in wetlands.

Priority Sites for conservation and wise use action

Workshop participants were asked to identify priority sites for conservation and wise use action, considering results of the biodiversity, socio-economic and threat analyses. The following sites were proposed:

Country	Priority Sites for Conservation
Liberia	1. Lake Piso 2. Marshall Wetlands
Côte d'Ivoire	3. Cavaly-Sassandra Complex 4. Parc National d'Azagny / Grand Lahou 5. Parc National Îles Ehotilé / Aby Lagoons
Ghana	6. Amansuri Wetland 7. Keta Lagoon
Togo	8. Lagoons and natural mangrove areas
Benin	9. Boucle du Roy 10. Lac Nokoué
Nigeria	11. Niger Delta 12. Cross River Estuary
Cameroon	13. Rio del Rey 14. Douala-Edea
Equatorial Guinea	15. Campo 16. Rio Muni 17. Annobon
Gabon	18. Akanda 19. Pongara 20. Lower Ogooué River & wetlands
Congo	21. Conkouati-Douli 22. Loufoualeba-Malonda 23. Cayo Complex
D R Congo	24. Parc Marin des Mangroves
Angola	25. Mussolo Bay 26. Coastal zone and lagoons of Namibie
São Tomé & Príncipe	27. Ilhas Tinhosas 28. Coastline of São Tome island

Figure 7. Priority sites for Conservation in the Coastal Region of the Gulf of Guinea



Sub-regional network needs for the conservation of coastal wetlands

This session focused primarily on the practical needs of and for emerging networks, notably in capacity-building and CEPA (Communication, Education and Public Awareness). Abdoulaye Ndiaye (Deputy Director, Wetlands International Africa Programme) presented a potential framework for strengthening network capacity focused on training, awareness and education.



Transboundary training course for protected areas staff of Senegal and The Gambia (Abdoulaye Ndiaye)

This was based on lessons learned from a major sub-regional capacity-building programme for West Africa, which operated from 1998-2001. These lessons and recommendations were constructive in guiding working group sessions, which addressed the identification of actions needed for building capacity, and the ranking of training needs. They also developed proposed awareness actions and draft Terms of Reference for a sub-regional network for wetland conservation.

Sub-regional Network needs

A working group session was planned to identify existing frameworks and perform an analysis of the strengths and weaknesses of these networks, but this was not carried out, largely due to the limited number of sub-regional networks actively engaged in wetlands conservation in this region. However, a few networks were identified and some guiding principles developed during the plenary session.

Networks that should be included in subsequent developments are the West African Fish and Fisheries Association (WAFFA), the African Mangrove Network (AMN) and the African Waterbird Census (AfWC) network. It is also important to link in with sub-regional projects, such as the Gulf of Guinea Large Marine Ecosystem Project. Other important networks are those formed under regional groupings of international agreements, such as the Abidjan Convention and the Convention on Wetlands.

There are certainly advantages for sub-regional level training, which contributes directly to the strengthening of sub-regional exchange, mutual development and the formation and/or support of networks.

Effective sub-regional networks are essential for wetlands conservation in the Gulf of Guinea, for several reasons:

- The presence of trans-boundary wetlands
- The benefits of Integrated River Basin Management and Integrated Coastal Zone Management
- The migratory nature of many wetland species (fish, turtles, aquatic mammals, waterbirds)
- The sub-regional nature of wetland threats, e.g. fisheries, pollution, bushmeat trade, spread of aquatic weeds
- Common coastal wetland habitats and issues relating to wetland conservation
- Added strength to the conservation movement in facing sub-regional threats and developments
- Benefits of sharing experiences and working out joint solutions to sub-regional issues
- Cost-effectiveness for capacity-building, i.e. training of trainers.

It is important for networks to acknowledge each other and work together. Maintaining networks can be expensive, and requires commitment. Networks are most likely to succeed if they are supported by a dedicated coordination office based in the sub-region. Communication is essential to success.

Training needs and capacity-building actions

a. Specific Training Needs

- Inventory and monitoring
- Policy and legal frameworks
- Impact assessment
- Education and Awareness
- Restoration and rehabilitation of wetlands
- Development and management of databases
- Project development and management
- Wetland management

b. Capacity-building Actions (ranked)

1. Training of trainers
2. Sub-regional Workshops
3. Sharing experience through site visits
4. Training environmental journalists
5. Formal university training
6. Policy development workshops



Mangrove awareness campaign, Congo (Placide Kaya)

Awareness Actions

Awareness should take place at different levels, though both formal and informal means. Formal targeted awareness may take the form of specific seminars and targeted awareness campaigns. Informal awareness may include more general actions focused on a wider audience.

a. Target Groups

- Political and other decision-makers
- General public
- Youth groups
- Women's groups
- Other groups according to situation (e.g. military groups, religious groups, senior citizens).

b. Awareness channels

- Audio-visual means (radio, TV)
- Press releases
- Publicity campaigns
- Debating conferences / seminars
- Theatre, competitions, thematic songs
- Films and documentaries.

c. Implementation

Implementing awareness actions requires the involvement of different actors. These include institutional actors, such as NGOs, churches, schools, government administration bodies and museums. Individual actors include artists, opinion leaders, scientists, journalists, teachers, religious leaders and traditional chiefs.

Draft Terms of Reference for a potential sub-regional wetlands network for the Gulf of Guinea

a. Objectives of the Network

- Coordination: Coordinate joint sub-regional actions of participating partners in the Gulf of Guinea
- Communication: Facilitate the exchange of information at the sub-regional level, especially concerning threats, actions and their outcomes and results (of surveys etc.)
- Direction: Orient the network's expertise as the 'Gulf of Guinea coastal wetlands wise use network'
- Partnership: Promote partnership with other networks.

b. Network Actions

- Harmonise national wetland (management) policies in relation to coastal wetlands of the Gulf of Guinea
- Create and manage a database for coastal wetlands of the Gulf of Guinea
- Identify experts and training needs in the sub-region
- Create and maintain a website for exchange of information
- Diffuse and publish information relating to coastal wetlands of the Gulf of Guinea.

The Convention on Wetlands: Towards improved adherence to the Convention and its implementation in the sub-region

Abou Bamba (Africa Officer, Ramsar Convention Bureau) made a presentation about the convention. The main justifications for a special Convention focused on wetlands are on account of the key international roles and values of wetlands, namely:

- Most productive environments
- Cradle of biological diversity
- Ecological services: water storage, flood protection, water regime regulation etc
- Economic benefits: water supply, fisheries, agriculture, recreation, navigation, etc
- Scientific and cultural value
- Amongst the most threatened ecosystems.

Contracting Parties to the Convention are expected to commit themselves to the three main pillars of action of the Convention, which are:

- Wise use of all wetlands
- Wetlands of International Importance
- International cooperation.

The wise use of wetlands as defined by the Convention is 'their sustainable utilisation for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem.' Wetlands of International Importance, or Ramsar Sites, are designated according to specific criteria.

The key features of the Convention are that it:

- recognises wetlands (goods and services) as vital for human wellbeing (food and water security) and poverty alleviation;
- supports practical wetland sustainable utilisation by countries;
- has open, collaborative and flexible mechanisms
- supports implementation - not a 'compliance-based' convention;
- provides practical guidance on many topics.

The Ramsar Bureau manages a small grants fund which can assist Contracting Parties with specific activities, or which can help other countries in putting together their applications. The Bureau also provides an important service in lobbying for support for wetlands from donor agencies and other partners.

Within the Gulf of Guinea region, the Ramsar Bureau has supported or is supporting a number of initiatives. This includes support to Ghana's national wetlands conservation strategy.

All participants urged Cameroon and São Tomé and Príncipe to join the Ramsar Convention.

Field Excursion

Four sites were chosen for a full day of field visits in the coastal zone. Placide Kaya led the field visit.

1. Songolo

This site is a mangrove-fringed creek north of Pointe-Noire. Given its proximity to the city, it is rather threatened; the mangroves are in a serious state of degradation, with relatively few trees remaining of *Rhizophora racemosa* and *Avicennia germinans*. There are two principal problems at this site: water pollution and the displacement of mangrove areas for building houses and developments of the Mazaria Club. Nevertheless, environmental education here could have positive results, and the area could be included in some wider CEPA activities focused on mangroves and conservation in the coastal zone. The club itself might benefit from encouraging mangrove restoration and building up its ecotourism potential. Mudskippers *Periophthalmus papilio* were seen 'walking' along the mud, as well as some molluscs and small crabs.



Mangroves and children at Songolo (Wetlands International)

2. Chemin des esclaves à Matombi

A short cultural stop was made at the old slave route at Matombi, where a new building is under construction to house offices of the prefecture. A line of mango trees marks the slave route, and a basic plaque on a broken monument marks the site of the former port. Efforts are underway to build a more fitting memorial to the 2 million or more slaves who were exported from this site.



Memorial plaque to slaves, Matombi (Tim Dodman)

3. Gorges de Diosso

The gorges at Diosso are natural formations caused by erosion, a process that still occurs, as evidenced by streams bordered by shifting sands. There are some small pools formed at the foot of the escarpments and deposition of materials. Some mining activities have taken place in these areas.



Diosso Gorges (Tim Dodman)

4. Kouliou River

A stop on the Kouliou River permitted participants to appreciate the size and breath of this important river and to note the vegetation of the river and its estuary. Local fishing activities take place, and a small market was operating at the foot of the impressive bridge over the river. On route, we passed through a large area of coastal savanna in between the mangrove and forest belts.



The Kouliou River (Tim Dodman)

Round Table Discussion: Sources of finance for a sub-regional programme for the conservation of coastal wetlands of the Gulf of Guinea

Issa Sylla (Wetlands International Africa Programme Director) led this evening discussion focused on potential funding options for a coastal wetlands conservation programme.

The current Wetlands International programme for the Gulf of Guinea is part of a sub-regional project financed by the BBI fund of the government of The Netherlands. Wetlands International works in cooperation with other international organisations, for instance with WWF and IUCN in partnerships such as the Niger Basin Initiative and the PRCM. Such partnerships and joint commitments can help to raise the profile of conservation initiatives and open new funding opportunities. Dr Atanga Ekobo (WWF-Cameroon) considered that such partnership would be very welcome for the Gulf of Guinea.

Robert Shutchusongo (RDC) proposed that Wetlands International lead the development of regional programme for coastal wetlands. Partnerships should be developed and tasks divided appropriately. Tim Dodman (Wetlands International) considered that a sub-regional programme was very important for the region, given the common problems and issues identified during the workshop, and the need to tackle them together. There are some particular funding opportunities for sub-regional programmes, but other potential sources (such as embassies) may be excluded. The private sector in the Gulf of Guinea, notably oil companies, should be approached for potential funding of such a programme.

Jérôme Mokoko (Congo) considered that the sub-regional projects coordinated by Wetlands International under the PIN and BBI funds of The Netherlands are already excellent models as sub-regional initiatives, comprising monitoring, capacity-building, policy and other issues. A sub-regional initiative would be much more effective than national projects, and presents the only real opportunity to ensure that all countries of the region are involved in coastal zone conservation.

André Toham (WWF) would like to see a replication of the PRCM model in the Gulf of Guinea region. WWF is developing a large proposal under the Global Environment Facility (GEF) for management of the Congo Basin watershed. There is merit in linking a coastal zone programme to this Congo Basin initiative.

Jacques Adjakpa (Benin) has undertaken some integrated water management initiatives with support of The Netherlands, with which Benin has a special relationship. However, wetlands are not always the priorities of funding agencies, and Benin does not meet all the criteria for some funding agencies. A sub-regional programme is thus welcomed; any resulting proposals should be endorsed by the Convention on Wetlands, and should include components on poverty alleviation.

Issa Sylla reminded the group that matching funds are often important for many projects, especially GEF projects; Abdoulaye Ndiaye (Wetlands International) praised the level of exchange at the meeting, noting that any resulting future project must avoid overlapping with ongoing initiatives.

Abou Bamba (Ramsar Bureau) thought that Wetlands International should present such a proposal to The Netherlands government and/or the GEF, and certainly there would be merit in linking the project to WWF's developments for the Congo Basin. The European Union (EU) is another potential source of funds. The World Bank appears to be interested in mangrove conservation; there is a draft code of conduct for mangroves under development. It is certainly advisable to approach oil companies.

André Toham indicated that we would need to link such a programme to the GEF project for the Guinea Current Large Marine Ecosystem. There are likely to be some funds under the planned WWF GEF Congo Basin project for some coastal areas, such as Gamba and Conkouati. However, funds should also be directed to some of the huge inland wetlands, such as Lac Itumba in RDC.

Gordon Ajonina (Cameroon) questioned if we could adopt a 'global' project in which key sites are identified, or if countries can present projects in a bottom-up fashion, which can then be harmonised. Gilbert Madouka (Congo) recommended that a team should be established to work on a proposal. Moses Massah (Liberia) reminded the group about a BirdLife GEF project, which includes some countries of this region.

Crisantos Obama (Equatorial Guinea) strongly favoured a sub-regional project, as many of the problems along the coast are similar in each country, such as pollution. Funding from oil companies is definitely an option. We must congratulate Wetlands International for bringing together all the countries of the Gulf of Guinea, as we all need to be involved in this initiative. A good start to developing the programme is to establish a list of threats in the coastal zone and how to address them.

Germain Bomisso (Côte d'Ivoire) considered that regional initiatives were very much favoured by funding agencies. However, donors also have their own priorities, which need to be known and taken into account.

Issa Sylla concluded the meeting by noting the unanimous support for a sub-regional programme proposal for the Gulf of Guinea. The ecoregional approach enables partnerships to cut through political barriers and to eliminate the problems of eligibility of some countries under certain funding mechanisms. Wetlands International is committed to taking these ideas and recommendations forward, and we would welcome the support of the Convention on Wetlands in such a development and the engagement of the other international Ramsar partners. Nevertheless, this does not prevent countries in developing their own specific projects for coastal wetlands. Finally, taking into account the heightened concern of the (potential) impacts of the oil industry on coastal wetlands, national representatives are encouraged to consider this issue in the future implementation of a sub-regional programme.

Workshop Evaluation

Workshop evaluation sheets were distributed and completed by participants. Overall, participants were very satisfied with the technical content and sub-regional nature of the workshop. Presentations were generally of a high quality, and discussions and working group sessions were productive. Some considered that the workshop was not quite long enough.

The field trip was considered to be useful and enjoyable, and enabled participants to exchange ideas and spend some time together, though the transport was not of great comfort. Overall, there was a very positive camaraderie throughout the workshop.

The workshop venue was good, with reliable power supply, space and facilities. The lunches and coffee breaks were excellent, and the accommodation fine, though a few participants were obliged to share rooms.

The only genuine downside to the workshop was the difficulty some participants experienced in arriving in Pointe-Noire due to cancelled flights, especially for those participants who travelled via Douala. A few participants also lost their luggage, though some were able to recover it later.

Overall, it can be said that the workshop was successful in bringing together a good range of participants with all countries of the Gulf of Guinea represented, and the issues addressed during the workshop were very pertinent and important. It is necessary to follow through with the recommendations and in particular to take steps to develop a sub-regional programme for conservation of coastal wetlands of the Gulf of Guinea.

Closing Ceremony

The closing ceremony was presided by the Cabinet Director of the Ministry of Forest Economy and the Environment, Mr. Valère Gabriel Eteka-Yemet.



Mr. Valère Gabriel Eteka-Yemet, Cabinet Director (Tim Dodman)

The Cabinet Director's closing speech was preceded by two presentations:

- A synthesis of the workshop, presented by Abdoulaye Ndiaye (Wetlands International), which included a summary of the workshop activities and results, and an overview of the final recommendations (below);
- Words of thanks by Mrs Ana Paula dos Santos Correia Victor (Natural History Museum, Angola). Particular gratitude was expressed to the Government of the Republic of Congo for hosting the workshop, notably the Minister of Forest Economy and Environment for his personal presence in opening the workshop and the Cabinet Director for closing the workshop.

Thanks were also expressed to the following:

- Wetlands International for organising the workshop;
- TOTAL for availing their conference room in Pointe-Noire for the workshop;
- the participants for their positive contributions (noting also that some had experienced tiring journeys to come to the workshop);
- the government of The Netherlands for financing the workshop;
- WCS-Congo for their logistical support;
- Congo Navy for provision of a minibus;
- technicians, translator and caterers.

Workshop Recommendations

1. Establish a sub-regional network for the conservation of coastal wetlands of the Gulf of Guinea, with the active support of the partner organisations of the Convention on Wetlands (WWF, Wetlands International, IUCN, BirdLife International).
2. Wetlands International should publish and disseminate an applied inventory of the coastal wetlands of the Gulf of Guinea, based on information provided by the 13 participating countries of the Ecoregional Workshop.
3. Wetlands International should develop, with national and international partners, a sub-regional programme proposal for the conservation of coastal wetlands of the Gulf of Guinea. This programme should include components of:
 - a. Capacity-building, especially for wetland inventory and monitoring, wetland policy and impact assessment;
 - b. Awareness-raising, especially for decision-makers, youth and women's groups;
 - c. Exchange programmes and sub-regional workshops;
 - d. Assessments of the economic and cultural values of wetlands, especially of mangroves and coastal lagoons;
 - e. Biodiversity conservation and monitoring;
 - f. Demonstration site projects in each of the 13 participating countries, as identified by workshop participants.
4. The workshop participants urged Angola, Cameroon and São Tome & Príncipe to ratify the Convention on Wetlands (Ramsar) and identify at least one Ramsar Site per country.
5. The sub-regional network should actively promote the recognition of the immense economic and cultural values of wetlands, and their role in coastal zone protection, especially mangroves.
6. All partners should work together on a sub-regional level to combat pollution of the coastal wetlands of the Gulf of Guinea.
7. Improve knowledge of the coastal habitats of the Gulf of Guinea, especially mangroves and coastal lagoons.
8. Promote research and improve knowledge of the biodiversity of coastal wetlands, especially of fish, aquatic mammals, waterbirds, reptiles, molluscs and crustaceans.

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Annex 2. Workshop Agenda

Ecoregional workshop on coastal wetlands of the Gulf of Guinea, Pointe-Noire, Congo, 19-22 April 2005

Tuesday 19 April 2005		
Session 1 – Introduction		
9:00	Welcome	Jérôme Mokoko
9:10	Word from the Regional Director of Wetlands International Africa Programme	Seydina Issa Sylla
9:20	Word from the Africa Programme Officer, Ramsar Bureau	Abou Bamba
9:30	Opening	Minister of the Environment
9:40	Levée de séance	
9:50	Introduction to coastal wetlands of the Gulf of Guinea	Mame Dagou & Tim Dodman
10:00	<i>Coffee break / Cocktail</i>	
10:30	Presentation of participants and their expectations	Facilitator
11:30	Introduction to the workshop Workshop start-up	Tim Dodman Facilitator
Session 2 – Status of coastal wetlands		
12:00	Status of coastal wetlands of the Gulf of Guinea	André Kamden Toham
12:30	National Situation West Africa <ul style="list-style-type: none"> • Liberia • Côte d'Ivoire • Ghana • Togo • Benin • Nigeria 	Participants
13:30	Lunch break	
15:00	National Situation <ul style="list-style-type: none"> • Cameroon • Equatorial Guinea • Gabon • Congo Republic • Democratic Republic of Congo 	Participants
16:30	<i>Coffee break</i>	
17:00	National Situation <ul style="list-style-type: none"> • Angola • São Tomé & Príncipe 	Participants
18:00	Lessons learned on the status of coastal wetlands	Facilitator

Wednesday 20 April 2005		
09:00	Welcome; resume of the first day of the workshop	Facilitator
Session 3 – Sub-regional actions for the conservation and monitoring of biodiversity		
09:15	Importance of the zone for biodiversity	Victor Mamonékéné
09:30	Introduction & TORs for working groups	Tim Dodman
09:40	Working groups: flora; fish; aquatic mammals (manatee, dolphins etc); waterbirds; reptiles (marine turtles, crocodiles)	Participants
10:45	<i>Coffee break (in groups)</i>	
Session 4 – Sub-regional actions for an improved valuation of coastal wetlands		
11:15	Importance of coastal wetlands for local communities (economic and cultural values)	Iro Hachimou
11:30	Introduction & TORs for working groups	Mame Dagou
11:40	Working groups: ranking the uses of coastal wetlands; the needs for valuation of coastal wetlands; cultural importance of wetlands	Participants
13:00	Lunch break	
Session 5 – Ranking of threats and prioritisation of sites		
14:30	Threats facing coastal wetlands	Tim Dodman
14:40	Coastal pollution	Marius Issanga-Ngamissimi
14:50	Introduction & TORs for working groups	Tim Dodman
15:00	Working groups: Ranking of threats; Prioritisation of sites for conservation and wise use	Participants
16:15	<i>Coffee break (in groups)</i>	
16:30	Working groups: Identification of existing projects concerning the conservation of coastal wetlands; Identification of demonstration projects	Participants
17:30	Resume ; close	Facilitator

Thursday 21 April 2005		
09:00 - 18:00	Excursion: Visit to coastal wetlands	
19:00 - 20:00	Optional round-table: Sources of finance for a sub-regional programme for the conservation of coastal wetlands of the Gulf of Guinea	Seydina Issa Sylla

Friday 22 April 2005		
09:00	Welcome; resume of the first day of the workshop	Facilitator
Session 6 – Sub-regional network needs for the conservation of coastal wetlands		
09:15	Potential framework for strengthening network capacity: training, awareness and education. Identification of existing frameworks; analysis of the strengths and weaknesses of these networks	Abdoulaye Ndiaye Facilitator
09:50	Introduction & TORs for working groups	Abdoulaye Ndiaye
10:00	Working groups: identification of actions needed for building capacity; ranking of training needs; proposed awareness actions; TORs of a sub-regional network for wetland conservation	Participants
11:30	<i>Coffee break</i>	
Session 7 – The Convention on Wetlands : Towards improved adhesion to the Convention and its implementation in the sub-region		
11:45	The Convention on Wetlands (Ramsar, Iran, 1971)	Abou Bamba
12:00	Discussion : Identification of priorities for implementation of the Convention in the coastal zone of the Gulf of Guinea	Facilitator / Abou Bamba
13:00	Lunch break	
Session 8 – Conclusions et Recommendations		
14:30	Workshop Synthesis	Mame Dagou Diop
15:00	Evaluation	Facilitator
15:30	<i>Coffee break</i>	
15:50	Conclusions & recommendations	Participants
16:45	Closing ceremony & Cocktail	Ministry of the Environment