

CHAPTER VI

SECTORAL MANAGEMENT PLANS/OR PROGRAMMES WITHIN THE KRIBI CAMPO COSTAL AREA IN CAMEROON

6.1. INTRODUCTION

During the stakeholder consultation workshop held in Kribi from 11 to 12 March 2010 the following sectoral and cross sectoral issues were identified:

- **Sectoral issues:** i) degradation of coastal habitats, in particular coastal erosion; ii) Overexploitation of fisheries resources; iii) Overexploitation of wildlife resources and timber forest products; iv) Inadequate land use and planning and v) Poor organization of a growing tourism sector

- **Cross sectoral issues:** i) limited capacity of institutions and human resource; ii) Inoperational legal framework; iii) Weak support to association sector such as NGOs; iv) Poor development of rural activities; v) Marginalization of local communities; vi) Lack of coordination between sectors; vii) Low priority for coastal development ; viii) Climate change and ix) Conflicts

Integrated Coastal Zone Management is a process where we define many types of integration, e.g. integration across sector interests comprising utilization and protection, commercial and recreative interests (horizontal integration). The sectoral interests do often conflict and an integrated management approach supports the integration of various sectors driven interests into an overall development plan, which might require accepting trade-offs and make compromises. It is therefore necessary during this process to identify the development goals of each sector, with aim to bring the key stakeholders together to jointly discuss and agree the various development plans, and also jointly assess where sectoral development plan might have detrimental impacts on other sectors. The following paragraphs develop management plan or programme for the key sector or cross sector identified.

6.2. GOVERNANCE AND CAPACITY BUILDING: INSTITUTIONAL AND LEGAL DEVELOPMENT, AWARENESS, EDUCATION AND TRAINING WITHIN THE CONTEXT OF ICAM KRIBI-CAMPO ZONE

6.2.1. Introduction and context

The Rio de Janeiro World Summit on Environment and Sustainable Development of 1992 considered the issue of environmental governance as a base for the protection and sustainable use of natural and biological resources. In this light, one of the soft agreements adopted during that Conference was the Rio Principle 10 on “Public Participation” in Environmental Issues. The Access Initiative which was espoused by the Cameroon government aims at promoting the right of the public to effective participation in decision making in the environment sector, access by the public to information and access to justice in the environment field. The Ministry of the Environment and Nature Protection in collaboration with a coalition of national NGOs initiated a project of entitled TAI project, through which an evaluation of the existing system of public participation was carried out and the capacity of actors notably local communities and the civil society was built to enhance effective public participation in environmental issues.

The coastal zone of Cameroon harbours the richest part of the country in matters of natural resources endowment. Fisheries, minerals, forestry and wildlife, land and water resources are some of the numerous natural resources whose exploitation can either contribute to economic growth or create social conflicts which if not well manage, can create crisis and hindrance to economic development. Good governance can ensure effective participation by the population or public, access to information ,equitable benefit sharing, access to justice and capacity building, amongst the actors involved, thus instituting a sense of belonging and creating awareness for the sustainable management and use of the said resource. It has been noted that several practices which run contrary to good governance such as lack of accountability, transparency, democracy and effective justice, corruption are highly present in the natural resources management sector.

The African Forest Law and Governance Initiative (AFLEG) organised a conference in Cameroon in 2003 and the findings were that most of the local populations in areas where natural resources are highly exploited in African countries, always do not benefit fully from the profits made from the exploitation of such resources.

In the Kribi-Campo area, governance issues can be detected in the forest/wildlife sectors where forest exploitation concessionaries do not respect the rules stated in their exploitation licences of providing social amenities to the population. The payment of forestry Returns and their distribution to the local populations is not done in an equitable manner. There is also considerable illegal logging going on due to poor law enforcement. There is high poaching in the protected areas as the local populations were not consulted and effectively involved in the creation and management of these areas. The *Pygmies* population (baka) is marginalised and not involved in effective decision making process or implementation in the natural resource sector whereas this population and the other local communities have played a key role as custodians of the forestry resources in this zone. Women and youth groups in the area have constantly complained of being marginalised or not being consulted during the conception and implementation of various projects.

Important genetic resources are being collected from the area and the traditional knowledge of the local communities is pirated by bio prospecting companies who develop such genetic and traditional knowledge into new foods, feeds, medicine, etc while those who contributed in safeguarding these resources from time immemorial get nothing in return. The fact that there is no specific legislation on ***Access to genetic resources and how benefits from such access and exploitation should be shared*** constitutes a loophole which is highly exploited by bio-pirates. The unsustainable harvesting of mangroves goes unabated. Bribery and corruption are very present in this sector while the lack of capacity for law enforcement is equally flagged as a weakness.

In the fishery sector, several factors including the lack of monitoring which allows foreign fishing vessels to carry out without fear, their activities in the Cameroon's territorial waters, lack of data on fishery landings and the illegal use of fishing nets which do not respect the legal dimensions are some of the factors which good governance has to reckon with.

Pollution by ships and from other land based sources has not been controlled and this has a serious impact on marine and aquatic life in the region. The quality and quantity of fishes and other marine and aquatic species in the region is a reflection of the types of activities undertaken in the sea or rivers.

In land use matters, elements of poor governance are found in the lack of planning and poor land attribution which leads to anarchy in the development of the area. The multiple purpose uses and high economic returns on coastal land use in the zone (agriculture, oil, sand and gravel extraction, Tourism/hotel industries, beaches and urbanisation) compete in land grabbing. An effective land use

policy will ensure that adequate planning and attribution of land are done and that environmental impact assessments should be carried out before any development project is carried out on land in the area. Landfills for waste management and treatment should be well protected to avoid pollution of surface and underground water sources.

There is no specific legal and policy framework for the management of coastal zones in Cameroon. Such a framework should be adopted with the active participation of all stakeholders, especially the pygmies, women and youth groups within the area. Implementation and law enforcement should be carried out without discrimination to ensure the coastal and marine environment is protected.

The creation of an Integrated Coastal Area Management Committee and the involvement of all the key stakeholders' elected Representatives (for decision making and implementing) will contribute to good governance. The Committee should hold regular meetings and provide guidance for development in all sectors within the area.

6.2.2. Capacity Building Areas Needs

6.2.2.1. Research

Improving on the research in coastal/marine resources is a key element in building the capacity for efficient management of the said resources. Several areas do lack scientific data such as species endemism, rate of depletion of key fishery resources, endangered species, migration and general inventory of the living resources within the zone, etc. Studying the impact of oil spills on the quality and quantity of fishery and other marine and aquatic species, the quality and quantity of aquatic/marine water, should be an important area for coastal and marine research.

6.2.2.2. Law Enforcement

The lack of specific legislation on ICAM as well the weak enforcement of related legislation has contributed to several ills plaguing the coastal zone. Legal vacuums should also be filled by adopting new legislation in areas which lacked such measures. Adopting new laws or revising existing ones should be done through extensive involvement of all actors in the process.

There is also a dire need for training of trainers in addressing each sector specific needs. Special emphasis should be laid on the principles of good governance and the respect of human rights by law

enforcement agents in sectors such as environmental control and inspections, forestry and wildlife officials, customs and marine control, fishery inspectors, etc.

6.2.2.3. Education and Information sharing

Capacity building in coastal area management can be done through environmental education, and information of various stakeholders. Various tool kits could be produced by the competent administrations (MINSEC and MINEP), radio and tv, target group discussions and brochures. These could be distributed to schools, communities and other actors with the aim of sensitizing them on their rights to information, to participate in decision making and the access to justice in the environmental field. A website on integrated coastal area management where all pertinent information and activities are found should be instituted and persons trained in various field for data collection and management. This training should be short term and on the spot training.

Programmes involving Exchange of Experts between GCLME member countries to foster transfer of knowledge and experience should be encouraged through funding.

6.2.2.4. Public awareness

Public awareness creation in the coastal area is aimed at drawing the interest and support of various actors into coastal area management issues. There is need to build the capacity of policy makers, law makers, land developers, industrialists, local communities in understanding the importance of coastal ecosystems and the need to adopt and implement relevant policies, laws and programmes which can protect the degradation of coastal environment. Capacity building for awareness creation could be provided through workshops, short term training of trainers from both government and civil society groups. Simple information in brochures and books on coastal area resources and their importance can be produced and distributed to interested members of the public.

6.2.2.5. Monitoring

Instituting an adequate monitoring and control system can contribute to the prevention and protection of the coastal and marine ecosystem from the impacts of certain phenomena. To enable the gathering of information on oil spills, illegal fishing by foreign fishing vessels, dumping of waste, sea level and wave rise, landslides and other dangerous activities in the coastal area, an efficient monitoring mechanism set in place can detect and enable actions to be taken in time to save life and biodiversity. The National Observatory for Climate Change created by the government needs to become operational. The local Councils, administrative Units and community groups should be trained and

equipped in physical observation methods and sharing information which can be used as early warning by the government and the local populations to prevent or attenuate the impacts of disasters in coastal towns and villages.

6.2.2.6. Empowerment (through alternative income generating projects)

Since poverty has been underlined as the primordial cause of environmental degradation in coastal areas, this can only be addressed through the institution and implementation of concrete actions geared towards contributing to improving on the livelihoods of local communities and marginalised groups. This will through projects which generate alternative income, thus deterring the focus on the unsustainable exploitation of coastal/marine resources. Such projects can include empowerment through aquaculture and mariculture activities, community cooperatives, recruitment of local youths as park game guards, eco-guards, community police, etc.

6.2.2.7. Funding

The government should place as a priority funding on coastal ecosystem management and allocate state budgets to the relevant ministries and the Coordinating Committee instituted on ICAM. In fact, bilateral and multilateral funding in this area will depend on the attention the government places on counterpart funding. Local Councils and Industries located or likely to locate in the area should also be sensitized to avail funding for coastal area management as the advantages of their act will be ripened in the long run. Funding Mechanisms such as the GEF, the Multilateral Funds and others should be sought through projects which illustrate the participatory aspects of key stakeholders in management of various aspects of the coastal ecosystem. Funding should also include training of youth in coastal and marine sciences and support to research in coastal/marine ecosystems disciplines. Funding sources should include the following areas : mangrove protection, protected area management, pollution control and awareness creation, alternative income generating activities to local communities, preserving traditional and indigenous knowledge of local communities in coastal management; educational workshops on coastal management; involving youth in beach cleaning campaigns, etc.

A donor's conference could be organised to showcase the activities, needs and projects tailored towards addressing the concerns of the local communities, youth, women, scientists and preserving the living resources of the coastal area in order to kindle donors' interests and attract corresponding funding.

6.3. CAMPO MA'AN NATIONAL PARK MANAGEMENT PROGRAMME

6.3.1. Introduction

The National Park is an uninterrupted area whose fauna, flora, soil, subsoil, atmosphere, water and natural environments as a whole, are of special interest and should be preserved from any natural deterioration and protected against any human interference likely to alter their outlook, composition and evolution. Therefore, the park should benefit from an integral protection and only some conservation or research activities will only be authorized within the framework of the management plan in accordance to the law. At the closed vicinity of the national park, a protected belt made of other land uses such as forest managements units will be established to mark a transition between the park and the peripheral zone where hunting, agricultural and others activities are freely carried out.

An integral coastal protected area should be created within the Kribi-Campo zone for the protection of endangered marine turtles and the remaining mangrove community. This protected area should include all those areas of utmost importance in maintaining the ecological integrity, the essential natural attributes and qualities of the environment over the long term. This zone should be free of human interference and should protect the coastal biodiversity and their unique habitats.

A peripheral land use zone will be established around villages which are largely dependent on resources within this area for their income and livelihood, and which have been adversely affected by the creation of the CMNP. This area should include farming, agro forestry, hunting, fishing, timber and NTFPs exploitation zones. In these areas, sound sustainable land use management practices should be promoted, sustainable rural development of the zone facilitated, local hunters provided with alternative livelihoods, sustainable exploitation of forest and wildlife resources promoted, all major new development subject to an EIA, and all existing development closely monitored.

Other land uses include:

- A *research area* set aside specifically for purposes of scientific research and monitoring (biodiversity, ecological and environmental monitoring).

- *Tourism and ecotourism zones* that include all those areas used primarily for the purposes of tourism, education and recreation. It should provide opportunities for public enjoyment through recreation and tourism, and promote environmental education and improve public awareness.
- A *community forestry zones* should be identified at the vicinity of some villages as an alternative for the creation of the CMNP and the integral coastal protected zone. In accordance to the forestry law, a forest of the non-permanent state forest can allocated to a village (or a group of villages) as a community forest under a management agreement between a village community and the service in charge of forestry. The management of such forest is based on its simple management plan and shall be the responsibility of the village community concerned, with the technical assistance of the service in charge of forestry. Incomes generated from the exploitation of such forest should be used for the development of the community concerned.

6.3.2. Management Programme

These specific objectives will be achieved through the following programmes:

- *Protection and surveillance*: establish an effective control system to protect the integrity of the CMNP, the coastal area and its peripheral zone;
- *Participative management and community development*: develop opportunities, capacities and institutions for local participation in the management of the CMNP, the coastal area and its surroundings;
- *Research and monitoring*: establish a management-oriented research and monitoring system so that the CMNP, the coastal area and surrounding areas are properly managed;
- *Administration and finance*: provide essential financial and administrative support for the effective management of the CMNP, the coastal area and its peripheral zones.

6.3.2.1 Protection and Surveillance

The main goal of this program is to establish an effective control system to protect the biodiversity integrity of the Park, the coastal area and their surroundings. The protection programme will also involve the surveillance of the park and its support zone, and the sensitisation of all stakeholders.

- a) Surveillance of the CMNP, the coastal area and their surroundings

The protection of the park, the coastal area and their surroundings will be done through regular and effective controls carried out by conservation game guards and the local MINFOF staff. During these

controls, illegal forest and wildlife products will be seized and auctioned in accordance to the law. Poachers and illegal forest exploiters will be arrested, and the equipment used for hunting, fishing or exploitation seized. Some of the serious cases will be transferred to court for judgement. Specifically, this programme will help to:

- Organize and carry out regular effective forest controls on the field;
- Develop and implement an effective supervision strategy to verify patrol efforts and their effectiveness;
- Motivate and ameliorate the outputs of the game guards through the instauration of risk and encouragement incentives;
- Strengthen the human (recruitment, training) and logistic (equipment) capacities of the park conservation service;
- Promote and ensure the participation of all stakeholders concerned (local populations, NGOS, economic operators, local administration, elites, traditional and religious institutions, etc.);
- Provide support to Village Vigilante Groups. To improve levels of local participation in the management of the CMNP, provide local benefits and exploit local knowledge, it is recommended that game guards work closely with existing Village Vigilante Groups. After some basic training members of these groups could assist with anti-poaching patrols by game guards. The Village Vigilante Group would qualify for a proportion of bonuses paid for successful arrests/seizures;
- Demarcate the boundary of the national park on the field, as well as that of all other identified protected area in the Kribi-Campo coastal zone with the full involvement and participation of the local communities concerned;
- Survey and monitor all existing encroachment areas. To monitor these areas effectively a baseline survey is required to assess their size, location, activities and “ownership”. All current encroachment areas should be mapped. Regular monitoring patrols of all existing encroachment sites and all park and peripheral one villages are required.

b) Sensitization of all stakeholders

The success of the protection programme cannot be achieved without the full involvement and participation of the local populations and other stakeholders concerned. They include: local administration (MINIFOF, MINEP, territorial administration, justice, arm forces, mine, etc.), timber companies (WIJMA, SCIEB), agro industrial companies (HEVECAM, SOCAPALM); transport union, public decentralized institutions; community-based institutions and organization, small scale

producers, private economic operators, universities and research centers, national non-governmental organizations and international institutions.

Sensitisation and conservation-education programmes are badly needed in the area to ease the way for immediate actions and to insure the long-term future of the CMNP and the coastal zone. It is required to create awareness among local people, to sensitize them on the far-reaching implication of ecological degradation, to explain the purpose of conservation and the reasons for creating reserve, and to encourage and secure their active and full participation in conservation activities. Local people need to learn more about the importance of plants as sources of useful products, about the serious threat of deforestation of the lowland rainforest and about the importance of preserving the park's genetic resources. In order to fulfil their educational role, the conservation service should carry out sensitization activities at all levels. Different approaches from signs, tours, exhibitions, video and slide shows, demonstrations, workshops, information and sensitisation campaigns can be adopted.

6.3.2.2 Participative management and community development

The forestry policy is a testimony of the willingness of Cameroon government to enhance the involvement and participation of local populations in the sustainable management of forest and wildlife resources. These populations consequently should therefore be considered as unavoidable partners in this process. This innovation is intended to encourage the local populations to better manage and protect their forests. This policy is in addition reinforced by current governmental directives that stress on new political stakes such as the fight against poverty, decentralization and good governance, advocates the involvement of the populations in forest management and the sharing of revenue.

The participative management and community development programme will contribute to:

- To put in place mechanisms for the participative management of the park, the coastal area and their surroundings;
- To develop ecotourism, sustainable viable alternatives socioeconomic incomes generating activities with minimum impact on the environment;
- To promote the creation and sustainable management of community forests, as a compensation to the conservation of the national park.

The participation of Bakola/Bagyéli population (pygmy) to conservation initiatives and activities is a major task for the park management. They estranged from mainstream society due to weak institutional integration policies are involved in an unbalanced relationship with Bantu communities

that do not recognize their rights on the forests, its resources and agricultural land. Around the agro industrial plantations, they are threatened by immigrants who have occupied their territories. Also there is a conflict with Campo Ma'an National Park because of misunderstanding on the definition of subsistence hunting (tolerated) and commercial hunting (forbidden). The predominance of community forest under the control of Bantu groups will accentuate insecurity of land tenure for the Bagyeli and consequently increase their vulnerability.

- a) Development and implementation of mechanisms for the participative management of the CMNP, the coastal area and their surroundings

Many stakeholders can be considered as key stakeholders for the participative management of the CMNP and its peripheral zone. They include:

- Representatives of the MINFOF administration in charge of protected area management including the Park Conservation Service (Wildlife Direction, South Regional Delegation of Forestry and Wildlife and many other local MINFOF administration located at the vicinity of the park);
- Representatives of MINEP (South Regional Delegation, Divisional Delegation of Ocean, vallée du Ntem and many other local MINEP administration located at the vicinity of the park);
- Representatives of other local administrations (MINTOUR, MINEPAT, MINRESI, MINADER, MINEPIA, IRAD, MEAO, polices and gendarmes, military naval bases that are located at the vicinity of the park);
- Administrative, council, religious and political representatives (Governor, SDO, DO, Chief of District, mayors, members of parliament, etc.) found in the area;
- Community based organisation and NGOs located in the area;
- Representatives of the local populations (chiefs, notables, elites, etc.);
- Representatives of economic operators (HEVECAM, SOCAPALM, WIJMA, SCIEB);
- Representation of national and international conservation organisation acting in the area (WWF, SNV, FEDEC, PROTOMAC, GEM-CG, etc.).

Several measures should be taken to ensure the participation of all key stakeholders. They include:

- The creation of a joint Park Management Committee with representatives of all key stakeholders including the local populations and the Bakola/Bagyeli pygmy community;
- The negotiation of collaborative conventions with agro industrial, timber, mining and petroleum companies in order to ameliorate the compatibility between their activities and conservation imperatives;

- The creation of local natural resource management committee in order to promote the sustainable management of village lands;
 - The development and implementation of communication strategy with the various stakeholders.
- b) Development of ecotourism and sustainable viable incomes generating activities

The promotion of ecotourism and eco-development activities in the coastal area and the peripheral zone of the CMNP will contribute to the amelioration of living conditions and welfare of the local communities concerned. It will also help to increase the income generated from ecotourism by developing appropriate tourism infrastructure and actions in an ecologically sensitive and financially viable manner. Key actions will focus on:

- The inventory and management of principal tourist attractions in the national park, the coastal area and their surroundings;
- The identification and creation of guided nature ecotourism paths, the construction of an information centre and the training local guides;
- Financial and technical supports to local community development initiatives (creation of community forests, community hunting zones, community fishing zones, etc.);
- Financial and technical supports to community-based incomes generating activities;
- Financial and technical supports for the establishment of community-based infrastructures.

c) Creation and sustainable management of community forests

The development of community forestry deals with facilitating access to forestry resources and their management by adapting the legal and institutional framework to the requirements of community management, by facilitating the acquisition and sustainable management of community forest, by supporting the communities in the management of their forest and wildlife resources with the technical assistance local authorities in charge of forestry.

6.3.3 Research and monitoring

6.3.3.1 Priority axes of research and monitoring

As far as biological aspects is concerned, it is necessary to put in place permanent plots to follow up and monitor high conservation value species, and some resources of ecological and socioeconomic interests. These permanent plots will help to collect baseline scientific information that will be used for management orientations and decision taking.

With regards to socioeconomic aspects, the programme will focus on the study of population dynamics in villages found in the area, and the use of forest resources by the local communities. A particular attention will be paid to damages caused by wildlife on farm lands and the identification of realistic solutions.

The collection and analysis of physical and environmental data will be done with the technical assistance and collaboration of specialised national and international scientific institutions. Most of the physical, environmental and biological data will be collected by forest guards with the participation of resource persons from the local community.

6.3.3.2 Coordination of research and monitoring activities

A scientific committee will be created for the coordination of research and monitoring activities. Its terms of reference will be as follow:

- Validate research and monitoring priorities;
- Control the scientific quality and the methods used for research;
- Ensure a better analysis, interpretation and implementation of research results;
- Organise the development of data bases.

With reference to articles 13 of the 1994 forestry law and 65 of the 1996 environmental law, the scientific committee will be made of 7 members of which 04 permanent representatives (MINFOF, MINEP, MINRESI and MINESUP), 02 experts (national and international per session depending of the issues) and the Conservator who is the secretary of the committee. Selection criteria for the member's designation should be based on academic and technical knowledge, experience and good mastery of the research topics. The research and monitoring unit is in charged for the preparation of the documents that will be treated by the committee and will assist the conservator to implement the scientific committee recommendations.

6.3.3.3 Trans-frontier management

The commitments taken by the Heads of State during the Yaoundé Summit were translated into action through the Plan d'Action d'Urgence, then later by the creation of COMIFAC. In order to promote this regional initiative, the creation of a Trans-Frontier Protected Area between the CMNP in Cameroon and the Rio de Campo National Park in Equatorial Guinea would significantly enhance the

international status of the area, attract and secure international funding, improve the likelihood and provide better levels of mutual protection. The trans-frontier management programme will contribute to the conservation of biodiversity, the environmental protection and the sustainable management of the Campo-Ma'an/Rio del Campo Atlantic Equatorial Forest Eco-region. Efforts and means will be put together to:

- Have a good mastery of research problems, topics and priorities;
- Harmonize information and monitoring systems;
- Fight efficiently against poaching;
- Develop a common and joint communication policy;
- Increase the capacity for securing funding.

Furthermore, this trans-frontier programme will contribute to the promotion of joint partnership through the exchange of information, experiences and expertise.

6.3.4 Administration and finance

The main objective of this programme is to provide essential financial and administrative support for the effective management of the CMNP, the coastal area and its peripheral zone. The key activities to be developed under this programme will be oriented towards:

- The structural reinforcement of the park conservation service;
- The recruitment/transfer of a good number of qualified staff;
- The logistic and equipment capacity for field intervention should be enhanced;
- The creation of a collaboration platform between conservation structures, the local communities and other local administrative structures.

6.3.4.1 Structural reinforcement of the park conservation service

The conservation service will be effective and fully operational if it is subdivided into the following units:

- Administrative and finance unit;
- Protection unit;
- Research and monitoring unit;
- Eco-development and participative management unit;
- Ma'an, Akom II, Nyete, coastal zone sectors.

Each of these units or sectors will be managed by a chief of unit or a chief of sector. The terms of reference for each unit or sector are described below.

Protection unit

- Develop and ensure the implementation the surveillance and forest control strategy;
- Ensure the coordination of surveillance activities and the fight against poaching in the CMNP and its peripheral zone;
- Develop and implement the local population participation strategy for the protection of the park (surveillance committee, village committee, information and consultation);
- Organize and coordinate forest control activities for the fight against poaching.

Research and monitoring unit

- Ensure the monitoring and evaluation of research activities;
- Collect and manage data gathered during research and monitoring activities;
- Synthesize the research and monitoring results in a form that can be used for sustainable management decisions;
- Train staff in data collection technique;
- Ensure the survival of species of high conservation value;
- Ensure the monitoring and evaluation of research topics prescribed in the management plan.

Eco-development and participative management unit

- Organize village committees for the sustainable management of forest and wildlife resources;
- Inform and train the local populations on eco-development and participative management tools and techniques;
- Disseminate and share information with the local communities;
- Ensure the smooth collaboration between the conservation staff, the local populations and other stakeholders;
- Identify, develop and promote alternative incomes generating activities within members of the local communities;
- Manage and solve conflicts between the park, the local population and other stakeholders.

Administrative and finance unit

- Take care of the administrative follow up of staff;

- Develop, budget and implement annual work plans using proper accounting procedures and systems;
- Assist the conservator in financial resource management.

Sector

- Ensure the coordination of protection, eco-development, research and monitoring activities within the sector;
- Ensure the personnel management of the conservation service within the sector;
- Prepare and provide monthly progress reports of all sector's activities to the conservator.

6.4. FISHERIES MANAGEMENT

6.4.1. Introduction

Fish production is estimated in Cameroon at 100,000 metric tons of which almost 80,000 tons is from the small scale fishery. The fishing industry employs more than 200,000 persons (65,000 directly and 135,000 indirectly). The country imports almost 100,000 Mt annually since early 1990 leading to a deficit in fish products trade balance, estimated at 20 billion CFA. The contribution to food security is estimated at 15 kg/capita/annum, 5, 2% in the primary sector and 1, 1% of national GDP.

The policy objectives are: Improving production systems; restructuring the institutional framework; improving incentive measures; and sustainable management of natural resources. These are all geared towards poverty alleviation; satisfying the increasing demand for animal protein; ensuring the sustainability and performance of production systems and achieving integration to international and sub-regional markets.

Existing data of fishery production is very unreliable reasons amongst others being the lack of an efficient data collection system, difficult access to artisanal fishing camps; heavy post-harvest losses; inadequate system of control and surveillance of fishing activities; etc. Government efforts to resolve these problems have been limited. Major efforts are seen with the publication of the fisheries and forestry law in 1994 and the elaboration of project proposal for new fisheries law, the creation of institutions responsible for the management of the sector, an MCS unit but which is non-functional, financial and material assistance to fishers through MINEPIA, capacity building in the sector through MINRESI and MINEPIA, and the provision of basic social and institutional infrastructure. Fish production has been in the decline since 1990s. There is no management plan governing this sector.

For rational exploitation of the resources a good management plan is a prerequisite and this includes amongst others, a ban on small size mesh nets, application of a By-catch Reduction device (BRD) and Turtle Exclusion Device (TEC) for industrial fisheries to avoid excessive catches of juveniles and catches of marine turtles, and monitoring and control of fishing activities.

6.4.2. Over-view of the fishery sector within the Kribi-Campo area

6.4.2.1. Description of fishing activities affecting the stock

Fishing is mainly artisanal and industrial and takes place in the sea and open water bodies and along the coast such as creeks and mangroves and estuaries.

a) Artisanal fishing

There are 796 actors in the sector (table 20) and 1556 canoes in the region. 80% of fishermen are Cameroonians, with the remainder from neighbouring countries Nigeria, Benin and Equatorial Guinea. The average percentage of Cameroonians operating in the artisanal fishery sector is 17.2%. It is therefore interesting for local authorities and businessmen to invest in the fishery sector in this area with the highest number of Cameroonians operating in the sector. In total 39 fishing camps and villages are located in the Kribi-Campo coastal region. It is estimated that 76% operate using non-motorized canoes and 32% have motorised canoes (MINEPIA, 2010). At landing sites located around Kribi (Mboamanga and Ngoye), fishermen go to sea for two-three days at a time. In more rural areas between Kribi and Campo they go daily with an average of two trips a day during peak season. Motorized canoes mainly operate from Kribi and allow fishermen to fish 20km offshore and along greater stretch along the coast. The number of gears and types based on the frame survey carried out in 2009 in this area are about 1206 distributed as follows:

-	Bottom gillnet:	785
-	Surface gillnet:	484
-	Beach senne:	33
-	Cast net:	62
-	Hooks:	192
-	Lines:	549
-	Other:	1

These gears are used specifically for:

- The monofilament bonga gillnet or bonga chain (locally known as strong kanda net or strong kanda chain) mainly used to catch bonga and Sardinella;
- Hooks and line mainly to catch barracuda and marine catfish;

- Drift net used to catch pelagic fish (bonga, Sardinella, etc.);
- Encircling gill nets to catch bonga as target species;
- Beach seine (also known as drawing net or drawing chain) catches both pelagic and demersal fish in mostly coastal inshore sandy areas;
- Multifilament bottom set gillnets (locally known as pèsè or musobo net and musobo chain) used to catch mainly demersal fish (croakers, threadfins, soles, catfish, etc.).

Others include prawn traps, anchors, floaters and lines. Fishing activities take place year round. The peak season is usually from September to October to March–April. During July–August it is impossible to go out to sea as a result of rough seas.

TABLE 20: NUMBER OF ACTORS IN THE FISHERY SECTOR IN KRIBI-CAMPO ZONE

Actors	Number	Cameroonians	Nigerian
Fishermen	226	92,04%	7,96%
Fish mongers	72	81,94%	18,06%
Assistant Fishermen	430	95,58%	4,42%
Fish processors	68	83,82%	16,18%
Total	796		

The artisanal fishing boats comprise essentially:

- Small dugout canoes, 4–6 m long using hooks and lines to catch mainly catfish and threadfins. These small canoes carry 2 men; the medium-sized and planked canoes 7–8 m long which use set gillnets (100–300 m long, 3–9 m deep and with mesh size of 35–90 mm) to catch croakers, threadfins and other demersal fish, and also medium-sized and planked canoes, 8–10 m long which use Bonga monofilament gillnets (600–800 m long, 12–16 m deep with mesh size 40–45 mm) to catch Bonga. The Sardinella gillnets are usually 600–800 m long, 10–14 m deep and have a mesh size of 35–40 mm.
- Larger dugout or planked canoes used for fishing with encircling gill net for bonga. The net is usually 200–700 m long, 7–12 m deep and with a mesh size of about 38 mm.

b) Industrial fishing

The commercial fishery along the Cameroon coast and the study region uses trawlers which size vary in size from between 20–25 m and Gross Registered Tons (GRT) of 50–250. In each case, they

practice side trawling with stretched mesh size net of generally 30 to 41 mm cod end. Two types are encountered: Shrimpers and Finfish trawlers.

- Shrimpers.
- the first includes vessels of generally 50-100 GRT, 345 horse power engine and 20-22 m long. This category of shrimpers utilizes trawl nets of 30 to 34 mm stretched mesh cod end. Because of their relative small size, they are able to move inshore for fishing practice.
- The second category of shrimpers are generally 25 m long, 100-250 GRT and moved by a 520 hp engine. They were made for distant fishing, but some boundary problems with Nigeria in March 1983 encouraged them to become confined within the Cameroon territorial waters.
- Finfish trawlers

There are two categories of trawlers. The first is usually 22 m long, 50-100 GRT and powered by an engine of 430-440 horsepower, their stretched mesh net in each case is 36-41 mm. The second category includes vessels generally larger, i.e., 27-31 m long 142-177 GRT and an engine of 600-650 horsepower.

These finfish trawlers fish within a depth range of 8-25 m, mainly in estuaries and especially in: Cameroon estuary; Sanaga river (8-22 m); Nyong river (8-15 m) and Rio-del-Rey (8-12 m).

6.4.2.2. Faunal biodiversity

a) **Fish, Crustaceans and Mollusks**

The diversity of marine fish in the study region is comparable to that known in Cameroon coastal waters. Some 381 species, with an additional 70 species recorded as being associated with brackish estuarine environments (Fish base, 2004). The main target species of fish comprise two major groups: Pelagics and Demersals (benthics) both accounting for about 63% and 19%, respectively of the total fishery exploitation; then Paneids (2%) and *Nematopalaemon hastatus* (16%). Crustacea species have so far been identified, 4 of which are of economic importance, namely: *Nematopalaemon hastatus*, *Parapaeneus atlantica*, *Penaeus notialis* and *Penaeus kerathurus*. Twenty-five species of molluscs with *Sphonaria mouret*, *Purpura collifera*, *Purpura yetus*, *Sepia officinalis*, *Mytilus tenuistratus*, *Crassostrea gasar* and *Crassostrea rufa* (Crosnier, 1964) of economic importance.

b) Reptiles

Of the 6 regional species of marine turtles, 4 are known to occur in this area: These include: the green turtles (*Chelonia mydas*), the hawksbill turtles (*Eretmochelys imbricate*) and the Olive ridley turtles (*Lepidochelys olivacea*) all belonging to the family Cheloniidae; then the Leatherback turtle (*Dermochelys coriacea*) of the family Dermochelidae (WWF, 2005).

c) Mammals

Cetaceans do exist in the marine waters of south Gabon (see table 2). There have been no observations in the study area which shears boundaries with Gabon in the north. However, it is likely that these mammals occur occasionally in the study region. Present also is the West African manatee *Trichechus senegalensis*

6.4.2.3. Biology of key fish species

The key species of this area are *Ethmalosa fimbriata* (bonga), *Sardinella maderensis* (sardine) and the croakers (*Pseudotolithus spp.*).

- *Ethmalos fimbriata* (Bonga): It is the most important clupeid species in the coastal inshore waters. This species rarely goes below 20 m. It is more euryhaline than the flat Sardinella and it is found in estuaries, the sea, lagoons and also in places liable to have a variation in salinity. Its biology and migrations seem small in extent and are limited to estuaries and the adjacent coastal areas (Longhurst, 1960, Djama, 1992) and Salzen (1958). The species migrate into and out of the estuaries following seasonal changes in salinity as well as with the abundance of plankton in the estuaries during the dry season. Bonga tends to be more abundant in the estuaries during November-April. Its migration is possibly due to spawning and feeding needs. The seasonal fishery for bonga varies according to its migration route. Juveniles are definitely more abundant in rivers and in estuaries whereas the young spawners and adults can be found both in estuaries and at sea.
- *Sardinella spp.* (Sardine): It is a coastal species, euryhaline, most often found to be abundant near the outlet of water courses. It prefers warmer waters with a temperature above 25°C and seems to avoid waters that are not clear. It is not very abundant in areas without upwelling

where the warm and low saline superficial layer is permanently present as in the Bight of Biafra.

- Sciaenidae: Croakers and drums are important sciaenid species in the study area. This fish species group is primarily marine but also occurs seasonally in brackish water areas. Most of the species inhabit sandy and muddy bottoms in areas with large river flows. Longhurst (1969) gives a useful synopsis of biological data on West African croakers.
- Bobo croaker (*Pseudotolithus (Fonticulus) elongatus*): *Pseudotolithus (Fonticulus) elongatus* prefers surroundings that are less saline. In fact, commercial concentrations correspond to the great estuaries where the species can be caught in large quantities in certain seasons. Bobo croaker inhabits mud bottoms in coastal waters up to 50 m depth but also enters estuaries and coastal lagoons. This species, with a maximum length of about 45 cm, moves further offshore to spawn during the rainy season. It is jointly harvested by the artisanal and industrial fleets. It can be caught with bottom trawls, gillnets, beach-seines and longlines; and is a target species of bottom set gillnets and also trawlers.
- Longneck croaker (*Pseudotolithus (Pseudotolithus) typus*): *Pseudotolithus (Pseudotolithus) typus* grows to a larger size than *Pseudotolithus elongatus*. It attains a maximum length (L_{∞}) of 100 cm; and fish of 50 cm length are common in the catch. It is the most important commercial sciaenid species for the Cameroonian trawl fishery. *Pseudotolithus (Pseudotolithus) typus* inhabits mud and sandy bottoms up to a depth of 150 m but is more abundant in waters of less than 60 m and temperatures above 18°C. It also occurs in estuaries. Hence, it is fished by longlines. *Pseudotolithus typus* is a target species of the trawlers.

6.4.2.4. Research and Assessments

Fisheries research is poorly developed in the region due to absence of scientific and technical research staff. The only research station in the area CERECOMA is deprived of scientific staff and a research laboratory. However, through efforts of the national and regional institutions some research have been carried out in the study area geared towards pollution and assessment of fish stocks. It is estimated that fish production in the area is 1 600-3000 tons annually (CSIR, 2002) and this has decreased significantly to about 2000 tons annually (MINEPIA, pers comm. 2010). This amount caught by fishermen depends on the type of gear used, the time of the year and the number of trips made. Quantities caught vary between 3-8 kg /day using rudimentary fishing gears and up to 120 kg /day using speed boats and more sophisticated equipment. With marine industrial fishing it is difficult to estimate but generally trends over the coastline show a decline over the past years from 9000 tons in 2000 to

about 6000 tons in 2009. About 9 assessment surveys have been carried out by foreign research vessels in the Cameroon waters including the study area on the potential of the fisheries resources since the 1960's. These include: -the survey with the research vessel Ombango (1962-1963); the Guinean trawling survey (GTS) (1963-1964); the survey with research vessel Fiolent (1976); the surveys with Dr Fridjof Nansen 1981; Dr Fridjof Nansen (2004; 2005; 2006).

- **The Guinean trawling survey (GTS):**

Longhurst (1965), prior to the GT survey in 1963-1964 pointed out the influence of *depth* and the *nature of the sea floor* together with the clear cut *effect of the thermocline* in the Gulf of Guinea where two rather similar assemblages occur: -one in estuaries and the other in the continental shelf and both dominated by the family of the scianidae (the Sciaenid community, muddy or sandy-muddy habitat); -two groups of species appearing above (3) and below (4) the thermocline, both of them dominated by the family of the Sparidae, Sparid community/sandy habitat); -An assemblage of deep forms below the break of slope of the continental shelf (continental slope community muddy and sandy or sandy-muddy habitat); -a deeper assemblage (5), occurring at the upper continental slope or deep shelf (deep shelf community). The standing crop was estimated at 28519 tons of demersal fish for 4753 nm².

- **The Research vessel Ombango (Crosnier,1964)**

In this survey, the shelf was divided into three main zones according to hydrographic conditions: (1) 0-20m, high temperature / low salinity; (2) 20- 50 m intermediate or thermocline zone; (3) 50- 90 m high salinity and low temperature.

- **The Guinean trawling survey (William, 1969)**

The survey found 21 695 tons of demersal fish and 4500 in terms of pelagic for the 2717 nm² covered.

- **The soviet R/V Fiolent (Robertson, 1977)**

This survey examined the fisheries resources potential of the Eastern Atlantic from latitude 4° N to 17° S, and depth range from 20-1000 m. Fish densities decreased remarkably during the dry season in most areas (probably due to migrations into shallow waters for reproduction as many are described to spawn during the hot season. The surface covered was 2500 nm² and found 2, 6 tons / nm² for demersal and 6.4 tons/nm² for pelagic fishes. 6500 tons of demersal and 16 000 for pelagic fish were found within 5 m and 6 m depth above the sea floor.

- **The R/V Dr. Fridjof Nansen (Stromme et al., 1983).**

In August 1981, the survey was conducted from Togo to Congo between 50 to 2000 m depth. The continental shelves area covered was 2115 nm². The biomass found was 190 000 tons of pelagic fishes and 117 000 of demersal. Most of species represented for the demersal are the Sparids, the Ariommidae, the Centracanthidae (*Spicara alta*). For the pelagic, the Clupeids (*sardinella maderensis*) and Scombrids (*Scomberomus tritor*) are the most common and the total biomass was estimated at 100 000 tons for both pelagic and demersal.

- **The R/V Dr Fridjof Nansen (2004-2005 - 2006).**

These surveys have been conducted during the same period from June to July, (rainy season). The main objectives are: (i) to map the distribution and estimate acoustic abundance of the main pelagic species/group in the region;- (ii) describe the distribution, composition and estimate the abundance of the main demersal species on the shelf by a swept-area trawl programme; (iii) to collect phytoplankton and zooplankton samples and species identification; (iv) to map the general hydrographic regime by using a CTD-sonde to monitor the temperature, salinity and oxygen at bottom trawl stations and on hydrographical transects; (v) on-the-job training of local scientists in the main survey routines.

The hydro-acoustic survey of Cameroon covered the shelf from the border to Nigeria with Equatorial Guinea and to 20 m bottom depth on the Cameroonian coast. The survey does not cover the fish resources at < 20 m depth. A variety of coastal pelagic species exist, but during the three surveys in 2004, 2005 and 2006, no single species have been singled out with particularly high density. Biomass estimated during these cruises are summarized in table 21

TABLE 21. SUMMARY OF BIOMASS ESTIMATES FOR THE MAIN SPECIES GROUP (2004- 2006).

Species group	Year	Cameroon	Average Length size
<i>Sardinella</i>	2006	-	Between 12.1 – 15.5 cm for <i>S. maderensis</i> and 21 cm for <i>S. aurita</i>
	2005	5 000	
	2004	11 000	
P1 (<i>Ilisha Africana</i>)	2006	6 000	Average size 11 cm.
	2005	7 000	
	2004	2 000	
P2 (Carangids, Scombrids, Barracudas and Hairtails)	2006	13 000	Average length size 23 cm.
	2005	30 000	
	2004	14 000	
<i>Horse mackerel</i>			

Notice: In 2006, only very scattered low concentrations of *Sardinella maderensis* and no *S. aurita* was observed along the coast of Cameroon.

Also, SNH and some offshore oil companies have carried out EIA studies in this area. These include the works CSIR (2002) in the Ebodjé area, SNH/HYDRAC/E & D consulting (2009) on environmental assessments etc. Some studies have been carried out in the area on marine turtles.

6.4.2.5. Prospect for 2010 – 2015

Prospects for 2010 2015 are mainly centred around improving on fish production and reducing post-harvest losses. Following this a series of measures are being put in place to combat IUU, regulate fishing, improve on the lifestyle of fishers (credit facilities), make accessible improved ovens to fish smokers etc.

6.4.3. Institutional and legal instruments for the management of the fisheries sector

6.4.3.1. Institutional framework

The fishery of this area like the Cameroon fisheries is “open access” and very poorly managed. The administrative and technical supervision of fishing activities in the area is carried out by the following institutions:

- The merchant marine authorities: regulatory authorities and responsible for the settlement of disputes
- The divisional delegate of MINEPIA: Inspection authority for fish products at the market and for health and veterinary control
- The maritime and Small scale Fishing development Authority (MIDEPECAM): Provision of technical guidance and logistical support to small scale fishermen
- The navy: Law enforcement and protection of the coastline
- The Ministry of Scientific Research and Innovation (MINRESI) which was also reorganised in 2005 and has a mandate to define the country policy in terms of scientific research, it includes the Institute of Agricultural Research for Development (IRAD),

In addition a range of stakeholders are involved in this industry comprising: -Fishermen-Boat owners, Patrons (business operators who invest capital into the purchase of fishing gears or into the fishing

unit), Women who process (smoke and dry, and sell fish), Canoe builders, Motor mechanics and equipment suppliers.

6.4.3.2. Key legal instruments

Even though there are many gaps in the fisheries legislation, existing regulations are hardly implemented viz: relative to mesh size, species size, fishing zones, licensing etc. The artisanal fishermen too use very small mesh size nets and fish in shallow inshore areas, estuaries and lagoons, which are spawning and nursery areas of many species with impunity. The trawlers and shrimpers also use very small mesh sizes resulting to abundant by-catches and juveniles which contribute to impoverish the productivity of fish stocks. Also, the traditional fishing grounds for finfish trawlers which is supposed to be at least 3.2 km coastal sector is not respected leading to conflict between the artisanal and industrial fishery. Proper management of this fishery will guarantee its recovery and sustainable exploitation.

In Cameroon, Law n° 94/01 of January 1994 lays down Forest, Fauna and Fishery regimes and defines access conditions to a fishery. The Cameroon fishery, is suffering from various constraints such as the lack of management plan for different fishing grounds; poor statistic data collection and monitoring, control and surveillance body; relative poor human resources, poor aquaculture development. The current fishing policy gears toward;-modernize the production systems; improvement of the institutional framework and incentives; and sustainable management of fish resources.

The existing legislation presents many gaps including amongst others:

- Absence of regulations related to by-catch and discards including the use of selective devices like BRDs and TEDs);
- The limits for fishing for industrial vessels and artisanal boats are poorly defined (3 nautical mile limit) which causes conflict between these 2 sectors;
- Penalties on infringements related to fishing laws are not heavy enough to deter further infringements;
- Control and unauthorized transfer of fishing licenses and permits is not well elucidated (e.g. the procedure for the application for, and acquisition of, industrial fishing licenses has many serious irregularities).
- For information and documents submitted by the applicant, the law has no power to sanction false declarations; Issues related to foreign boats (entry, exit, declaration and landing of catches) are not mentioned. Foreign boat entry and exit are currently not detected and their catches are not declared but landed abroad.

- Problems related to the MCS of fishing activities are not elucidated. Also, there is no mention of the potential and methods for co-management of the resource.
- There is no reference to effective participation of stakeholders in management and of co-management,

For these reasons, under the FAO/TCM/2907(A) Project on “Appui à la révision du cadre juridique des pêche et de l’aquaculture au Cameroun” an “avant-projet de Loi portant régime de la pêche et de l’aquaculture” was proposed (FAO, 2005). The new text proposed is designed to provide some solutions to these crucial problems. For example:

According to this new legislation, the following management measures are proposed:

- i) The zone of activity for artisanal fishing is increased from 3 to 5nm and trawling is to be banned within this area;
- ii) Provision is made for the protection of mangroves and inter-tidal species and the creation of MPAs where fishing is banned or strictly regulated;
- iv) Proposition for the reinforcement of co-management and the creation of a consultative management committee for fisheries and aquaculture which has a role to develop management plans for the fisheries sector;
- v) Prohibits the sale of fishing licenses and the erasure, or camouflaging of the name, letters and numbers on fishing vessels;
- vi) Obliges foreign vessels to notify their entry and exit into and out of Cameroon waters, declare their landings and land all catches in Cameroon;
- i) Proposes heavy fines for defaulters of the law; increased control on licenses and on unauthorized transfer of fishing licenses and permits; reinforcement of surveillance activities; enlargement of surveillance network agents; and the provision of specific regulations for the application of BRDs, TEDs and transceivers on all vessels before licensing.

The level of compliance with fisheries regulations is very poor. This is a result of many reasons including:

- i) The recent Fisheries Law (Law No. 94/01 of 20 January 1994) and its text of application have not been fully explained to the stakeholders;
- ii) The poor MCS system in place;
- iii) Lack of Fisheries Inspectors trained specifically for applying the regulations;
- iv) Sanctioning offenders has been very difficult and in some cases impossible. Yet sanctioning offenders would be a good way to increase the awareness of stakeholders to the regulations;

- v) Absence of specific programs to educate and motivate stakeholders regarding fisheries regulations;
- vi) The dominance of foreign fishers in the fishing population (e.g only 17% Cameroonians in the artisanal sector) makes it difficult to ensure that the foreigners apply the regulations of the nation where they operate

6.4.4. Problems identification

Table 22 presents fisheries sector problem analysis matrix for the Kribi-Campo coastal area

TABLE 22 FISHERIES MATRIX PROBLEMS WITHIN THE KRIBI CAMPO AREA

Problem	Causes	Effects	Present solution
1/ Fluctuations in availability of fish and fishery products	- Utilization inappropriate fishing gears and methods - Fishing in nurseries areas nurseries	- Decrease of fish production - Food poisoning and illness through the use of chemical for fishing	- Human capacity reinforcement for BRD and TED application - Revision of legislation on fisheries - Destruction of suspected fishes by MINEPIA
3/ Important post harvest losses	-Utilization of traditional oven - Lack of adequate infrastructure and conservation techniques	- Decrease of fish production - Poverty	- Sensitization on the use of improve ovens - installation of improved oven in fishing villages
4/ Habitat degradation	- Dumping of petroleum waste from refinery, and other coastal industries - Dumping of domestic waste - Mangrove deforestation	- Decrease of fish production	- Research EIA studies
Social			
5/ Conflict between artisanal and industrial fishing	- Destruction of artisanal fishing nets and fish juveniles by Chinese fishing vessel	- Decrease of fish production - Poverty - Abandon of fishing by some fishermen	- A text from MINEPIA prohibited the use of caw trawl
7/Poor knowledge on fishing	- Lack of training	-Irrational exploitation of resources	- Restrict training
8/ Lack of Adequate Data for Predictive Modelling	Insufficient research on fish stocks Inadequate finances Insufficient man power in fisheries sciences	Irrational exploitation of stocks Reduced production	
9/ Inability to Secure Financing	Insufficient micro finance organizations Absence of socio-economic groups		- MINEPIA loans
10/Theft of fishing material	Absence of security system	- poverty	-
11/ HIV/AIDS in fishing community	High risk behaviour of fishers Presence of sex workers Easy access to cash	- Loss of manpower in fishing - Decreased production	- FAO studies KAP - PPSAC initiative on Atlantic coast

6.4.5. Current management measures

6.4.5.1. Review of legal definitions and terms related fishing

The fisheries regulation since 1984 has been accompanied by a series of decrees governing activities in the Livestock, Fisheries and Animal Husbandry sectors (Douffisa, 2007). The current marine fisheries licensing and fishing regulations which impact on shrimp trawling, its by-catch and discard include amongst others:

- i) Delineation of a 3 nm non-trawling zone which places restrictions on trawling in the sea essentially to protect nursery grounds from indiscriminate fishing. It is also to protect the artisanal fishermen who operate within the zone, as well as to reduce conflict between them and trawler operators;
- ii) The cod-end mesh size specification of 50mm stretched, for any shrimp trawl net is in place to promote the sustainability of inshore trawl fisheries through rational exploitation. (Decree no. 002/MINEPIA of 1st October, 2001);
- iii) Prohibition of fishing in sensitive sites (estuaries, bays etc.) and fishing of juveniles (Decree No. 95/413/PM of 20th June 1995). This is intended to guarantee sustainability of the resources;
- iv) Prohibition of trans-shipment at sea of catch/by-catch. The immediate purpose is to encourage vessels to bring all catches back to the home port, to increase the supply of fish to the domestic market. (Decree no. 002/MINEPIA of 1st October, 2001);
- v) Regulation concerning a minimum size of fish for sale to discourage the catching of under-sized fish and ensure the use of the legal mesh size in the codend. For instance, there is a ban on fishing, purchase, sales, transport and usage of target fish and shrimp smaller than the following lengths/weights: *Sardinella* (19cm), *P. typus* and *P. senegalensis* (25cm), Soles (22cm) and shrimps (less or equal to 11gms)(Decree no. 002/MINEPIA of 1st October, 2001);
- vi) Prohibition of pair trawling - to protect the juvenile fish and biodiversity in fishing grounds, especially those which also happen to be nursery grounds (Decree no. 0025/MINEPIA/DIRPEC/SDEPIA/SP);
- vii) Provisions for closed seasons corresponding to the reproductive period, growth of juvenile species or groups of target species. This is done by restricting or stopping fishing effort at key times and locations (Decree no. 002/MINEPIA of 1st October, 2001).

- ii) Installing mechanisms for the Monitoring, Control and Surveillance (MCS) of fishing activities for industrial vessels fishing in Cameroon waters (Decision N0. 024/MINEPIA of 15th February, 2006).

6.4.5.2. Licensing schemes

The conditions for this approval include (among others) the submission of the file, with relevant documents, to the fisheries administration. The types of fishing licenses noted are: i) fish licenses, ii) shrimp/crustacean licenses and iii) Tuna licenses. Fishing permits are grouped to 4 categories:

- A permits for semi-industrial fishing,
- B permits for sports fishing,
- C permits artisanal fishing, and
- D permits for scientific fishing.

The licensing scheme for industrial fishing involves a payment fee (GRT x 10 000 Fcfa for shrimp trawlers and GRTx 5000 Fcfa for fish trawlers), and installation of a transceiver on board the vessel. There is a vessel inspection before licensing by the competent ministries. This scheme is valid only for vessels less than 250 GRT. Licenses are obligatory and issued for only one type of fishing and are valid for 1 budgetary year (Decree No. 95/413/PM of 20th June 1995). Renewal of licenses is required 2 months before expiration. This decree bans the licensing of vessels to carry out both shrimp and fish trawling activities within same year.

For the small scale fishery permit, payment is 3000 Fcfa/year and 50,000 Fcfa for the semi-industrial fishery.

6.4.5.3. Effort control and closures, MPAs

The fisheries sector in Cameroon has neither a fisheries management plan nor any limitation of fishing effort. Decree no. 002/MINEPIA of 1st October, 2001 on the modalities of the protection of fisheries resources bans fishing on all sensitive sites, notably nursery habitats and refuge areas. It gives provisions for closed seasons corresponding to the reproductive period, growth of juvenile species or groups of target species through:

- Restrictions of fishing zones,
- Reducing effort,
- Total arrest of fishing activities.

But neither defines the seasons nor articulates specific effort control measures. Decree no. 0025/MINEPIA/DIRPEC/SDEPIA/SP bans pair trawling within Cameroon territorial waters and authorizes the creation of MPAs where fishing is either banned or strictly regulated. Though mentioned in the regulation, closed seasons and MPA's are absent in Cameroon and have not been practically defined for many reasons, including administrative and scientific ones (e.g. there is poor knowledge about the biology of the species, etc). Researchers need to intensify research in order that concrete decisions are taken based on sound scientific knowledge and evidence.

6.4.5.4. Gear regulations to improve species and size selectivity

To improve species and size selectivity, regulations on codend meshsizes have been fixed at 70mm for industrial trawlers and 50mm for deep sea and coastal shrimpers (Decree no. 002/MINEPIA of 1st October, 2001). But these regulations are not respected due to an absence of control measures (most shrimpers use gears with mesh sizes between 30mm to 42mm). As mentioned earlier, this decree also bans the fishing, purchase, sales transport and usage of the following lengths and weights:

- *Sardinella spp* (19cm),
- *P. typus* and *P. senegalensis* (25cm),
- Soles (22cm),
- Shrimps (less or equal to 11gms).

6.4.5.5. By-catch reduction measures

There is no regulation on by catch and discarding and no functional mechanism to reduce by catch and discards. However, there has been training of stakeholders on BRDs and TEDs through the FAO global project Number UNEP GF/2731-02-4469 & GF/4030-02-04 FAO EP/GLO/201/GEF, on "*Reduction of Environmental Impact from Tropical Shrimp Trawling through the Introduction of By-catch Reduction Technologies and Change of Management (the REBYC-project)* (Njifonjou, 2002). Other measures involve the revision of fisheries laws to include BRDs/TEDs, and the increase of the zone restricted for artisanal fishers from 3 to 5nm. Also, improvements in Monitoring, Control and Surveillance (MCS) is in progress: transceivers have been installed in most vessels, a few flyboats are now available for MCS, training of agents has been done and control is ongoing using small vessels.

6.4.5.6. Review of MCS systems in place for trawl fisheries, including the use of VMS for monitoring trawl vessels

In Cameroon's maritime fishery, the common tools of management are controlling mesh sizes, minimum sizes for some species, prohibition of some gears and limiting access to the coastal zone by industrial vessels to protect vulnerable coastal resources (especially juvenile fish) and reducing conflict

between the artisanal and industrial sectors. Cameroon does not yet have the capacity to limit authorized access to the resources for both the industrial and artisanal sectors). This has transformed our coastal resources into a *de facto* regime of “open access”.

Decision n° 024/MINEPIA of 15 February 2006, provides the modalities for MCS in the fisheries sector. Following this decision, a control brigade for fishing activities has been set up in DIRPEC. It is the BCSAP (Brigade de Contrôle et de Surveillance des Activités de Pêche) that has the task to put in place an MCS system for Cameroon. The VMS satellite system in place is the ARGOS system. In 2007, 70 transceivers were installed on industrial fishing vessels which were being followed to some extent. During this period some stakeholders who violated the 3 nautical mile limit were brought to order. Presently, BCSAP and its decentralized services have limited means to execute its mission because it lacks a coastal command centre, a limited number of operational tools or sufficient finances. Methods for collecting the data necessary for an efficient monitoring and control system are practically non-existent. It is therefore necessary to develop and put in place tools to guarantee monitoring and effective control. In light of the above, the fisheries administration decided to acquire smaller vessels to reinforce the ARGOS system. Today, most boats have transceivers and the installation of transceivers has become a prerequisite for the issue of licenses. Recently, MCS has begun using these small boats.

6.4.5.7. Interactions of coastal trawl fisheries with prohibited, protected and threatened species
A regulation bans the capture, sale and detention of protected species (Law no. 94/01 of 20 jan. 1994) and fishing in all restricted zones as defined by the administration. Finfish and non-fish species caught as by-catch in Cameroon coastal marine waters sometimes include threatened or endangered species (WWF, 2005, IUCN, 1995). Fish families most affected are: the sharks: Family Lamnidae (*Carcharodon spp.*), Family Carchahinidae (*Carcharhinus limbatus*), Family Centrophoridae; Saw fishes: Pristidae (*Pristis spp.*), Groupers (Family Serranidae: *Epinephelus itajara*) and Family Syngnathidae (*Hippocampus hippocampus*). Non-fish species occasionally occurring in bycatches include turtles: Cheloniidae (*Chelonia mydas*, *Eretmochelys imbricate*, *Lepidochelys olivacea*, *Dermochelys coriacea*). These turtles are normally used for food and their shells for ornamental purposes. No interaction has yet been reported with endangered mammals like the West African Manatee (*Trichechus senegalensis*) nor for cetaceans. The installation of BRDs and TEDs on shrimp trawl nets is a requirement to protect these species.

6.4.6. Setting goals and objectives for the Kribi-Campo fisheries management

6.4.6.1. General management objectives

Nearly all fishing grounds are occupied by several different fish species that are fished by several different types of fishing gear and fishing vessels. These fish and fisheries may interact with each other in various ways. “Technical interactions” between fishing gears exist wherever two or more gears and/or vessels operate within the same space, or catch fish from the same stocks of one or more species of fish. “Biological interactions” between fish species are essentially independent of the fishery (although they may be affected by the results of increased mortality) and include predator/prey relationships and competition for food, habitats or space. In setting goals for the Kribi-Campo multispecies fisheries, managers should also be aware that prolonged fishing at unsustainable levels can result in catch compositions shifting from large, slower turnover, more valuable species to smaller, faster turnover, less valuable species. This effect, known as “fishing down the food chain” (Pauly *et al.*, 1998 in Steven J. & Smith, W.2002), occurs due to both economic and biological factors

The Code of Conduct for Responsible Fisheries was ratified on 31 October 1995 at the FAO conference. This Code sets out principles and international standards of behaviour for responsible practices with a view to ensure the effective conservation. Also, Berkes *et al.* (2001 in Steven J. & Smith, W.2002) propose data collection methods for small scale and co-managed fisheries, suggesting the greater use of traditional ecological knowledge and participatory appraisals

6.4.6.2. Overall goal

The goal of the Kribi-Campo Fisheries Management Plan (FMP) is a management strategy for fishery that allows maximum harvest while protecting the stock from overfishing on a continuing basis.

6.4.6.3. Specific goals

Goal 1: To Contribute to achieving a lasting balance between fisheries resources and their exploitation

Goal 2: To improve on technical conditions of fish processing and marketing

Goal 3: To improve on beach access road and landing site infrastructure

Goal 4: To reduce degradation of the marine and coastal environment

Goal 5: Reduce conflict between artisanal and industrial fishing

Goal 6: Improve on fisheries law and reinforce capacity of institutional and legal framework

6.4.7. Fisheries Management Plan for the Kribi-Campo Coastal Area

Key elements of the Fisheries Action Plan for the Kribi Campo Coastal Area in Cameroon are presented in 23

TABLE 23: FISHERIES ACTION PLAN FOR THE KRIBI CAMPO COASTAL AREA

GoalD1: Contribute to achieving a lasting balance between fisheries resources and their exploitation						
Objectives	Action	Lead organization	Who needs to commit	Time frame (medium, long-term)	Financial aspects (x 1000FCFA)	Observations
1.1.Promote Gear restriction	<ol style="list-style-type: none"> Survey of fishing gear(number and size) Set fish size and mesh size limits for all target species Implement BRD and TED Time and area closure 	MINEPIA	MINEFI MINRESI	Medium term	100 000	In legislation only for some species but not applied
1.2.Institutionalize Quota	<ol style="list-style-type: none"> Form socio-professional groups Institute Individual quotas (IQs)or group quotas - Monitor and control catches 	MINEPIA	MINEFI MINRESI	Longterm	25 000	Absent in legislation
1.3.Establish area and seasonal closure	<ol style="list-style-type: none"> Survey of sensitive habitat Evaluate gonad maturation studies for target species Implement closed area/seasons Provide access to IGA Create marine reserves - Reinforce monitoring and control 	MINEPIA	MINRESI MINEFI MINADER MINEF	Long-term	150 000	Mentioned in legislation but not defined
1.4.Establish biological monitoring programs	<ol style="list-style-type: none"> Implement Fishery-Independent Monitoring (data on larvae) Fishery-dependent Monitoring (stock assessment: data on catch and effort, biological data, CPUE, MSY etc. and economic monitoring)). Implement habitat monitoring (pollution, deforestation etc.) 	MINRESI	MINEPIA MINEFI MINPLADAT	Medium term	75 000	Programme existing but requires reinforcement financially and manpower
1.5.Limit access	<ol style="list-style-type: none"> Create fishing groups Institute user right measures (access and withdrawal rights) (e.g. through restricted licensing and territorial use rights (TURFs) 	MINEPIA	MINRESI MINEFI MINPLADAT	Longterm	45 000	No measures yet. The fishery is open access presently
1.6. Strengthen MCS	<ol style="list-style-type: none"> Build capacity building on VMS Training, Sensitize and involve fishers in monitoring Make operational existing satellite-based Vessel Monitoring System 	MINEPIA	MINRESI MINDEF MINTRANS MINPLADAT	Short term	120 000	VMS system existing but not functional
1.7.Regulate fishing effort	<ol style="list-style-type: none"> Institute closed area and closed seasons, Reinforce monitoring create IGAs 	MINEPIA	MINRESI MINPLADAT	Medium term	95000	To be implemented from legislation

1.8.Promote co-management	<ol style="list-style-type: none"> 1. Identify stakeholders in the fishery sector 2. Establish appropriate co-management strategies 3. Build capacity on co-management 4. Provide technical support, credit, 5. marketing assistance 6. and, critically, enabling legislation 	MINEPIA	MINRESI MINEFI MINPLADAT	Long-term	110 000	Absence of this system
Goal D 2: To improve on technical conditions of fish processing and marketing						
2.1.Promote Capacity building and vulgarize existing technologies	<ol style="list-style-type: none"> 1. Survey of existing processing and marketing 2. Create socio-professional groups 3. Sensitize and train on improved handling and processing and packaging technologies (chorkor ovens etc.) 4. Vulgarize improved technology (chorkor ovens, ice boxes etc.) 5. Train on marketing of fresh and smoked products 	MINRESI	MINEPIA MINPLADAT	short-term	85000	IRAD has improved oven technology and local ice containers and provides training
Goal D3: Improve status of beach access road and landing site infrastructure						
3.1.Sensitization and fund sourcing	<ol style="list-style-type: none"> 1. Survey of existing roads and infrastructure 2. Sensitize decision makers on need for improved infrastructure (ice plants, etc.) 3. Seek national and international funding 	MINPLADAT	MINTRANS MINEPIA	Medium term	250 000	
Goal D 4: To reduce degradation of the marine and coastal environment						
4.1.Control the discharge of pollutants and exploitation of coastal and marine resources	<ol style="list-style-type: none"> 1. Survey of existing sources of pollution 2. Technical control of waste discharges 3. Make obligatory EIA 4. Assessment of level of pollution 5. Implement the use of clean technology 6. Survey of degraded areas 7. Rehabilitation of degraded area 8. Install monitoring measures 	MINEP	MINRESI MINPLADAT MINEPIA	Medium term	300 000	Many offshore oil and gas exploration and exploitation companies in area Also agro-plantation
Goal D5: Reduce conflict between artisanal and industrial fishing						
5.1.Reinforcement of MCs	<ol style="list-style-type: none"> 1. Revision of fisheries law 2. Make operational existing MCS 3. Inflict heavy punishment on defaulters 	MINEPIA	MINRESI MINDEF MINTRANS	Short term	45 000	MCS in place but lack of equipment and staff
Goal D6: Improve on fisheries Law and intervention capacity reinforced for staff						
6.1.Improve on and implement the existing fisheries legislation	<ol style="list-style-type: none"> 1. Review present law and identify all gaps 2. Put in place a mechanism for elaboration of new law 3. Create mechanism in charge of problems related to fisheries 4. Train and sensitize stakeholders on fisheries laws 	MINEPIA	MINRESI MINEP	medium term	15 000	Project for new law in place requires completion

6.5. TOURISM MANAGEMENT WITHIN THE KRIBI CAMPO COASTAL AREA

6.5.1. Introduction

Tourism is the fastest growing sector in the Kribi Campo Coastal Area and is one of major growing activities in the area. The sector is characterized by two main categories: the powerful tourism operators and the small scale tourism initiatives. In 2008, 23 600 tourists both national and international visited the area and in 2009 this number is 24 865. The total number of hotel rooms in the Kribi Campo zone is 1052 with 1208 beds in Kribi and 62 in Campo. This shows an unequally distribution since all hotels are concentrated in Kribi urban area. There are no classified hotels in Campo and surroundings. Infrastructures are inadequate and tend to tarnish the image or the beauty of the coastal landscape. Although the number of tourists is increasing, benefits from tourist activity are very low and there are few jobs opportunities at the local level. Tourism has positive impact in the area, it remains very weak and are not really been perceived by the majority of local populations.

6.5.2 Institutional and legal framework for sustainable tourism management

Table 24 summaries the keys institutions involved of the tourism sector management in Cameroon.

Cameroon has developed many legislations on tourism and is signatory of many international conventions or agreement related to tourism management. The government effort to promote sustainable tourism management is reflected in:

- i) Law no 99/006 of April 14th 1998 on tourism activity and the decree of application no 99/443/PM of March 25th 1999 defines the creation of a National Technical Commission in charge of authorizing new tourism facilities. It gives the possibility in article 49 to create a Communal Tourism Agency.

- ii) Law no 94/01 of January 1994 on forests, wildlife and fishing defining natural parks and reserves. In article 30 on communal forests, this law gives the possibilities to local councils to apply for a land certificate on a forest whose objectives and limits are defined. This important measure is a precious tool for local councils facing the challenge of reducing pressure on land in order to plan future facilities without constraints.

iii) The National Environmental Management Plan (NEMP) adopted in 1996 which identified coastal and marine areas as fragile ecological region which need an integral protection through sustainable management of its resources.

TABLE 24 SUMMARY OF KEY INSTITUTIONS INVOLVED IN TOURISM MANAGEMENT

Institutions/organisation/organs/ministries	Main role and responsibility in sustainable development
Institution	
Presidency	Promulgating the laws enacted by parliament. Through decrees, he regulate government policies relating to coastal management, sets up and organizes administrative structures with well-defined roles in marine and coastal area management
National Assembly	Ratifies international conventions and treaties on coastal issues to which Cameroon is a signatory
Coordinating organs	
i. The Interministerial Committee for Environment (ICE)	-Ensures and coordinates the involvement of all ministries in the management of the coastal and marine environment and its resources
ii. The National Environment and Sustainable Development Advisory Committee	Provides an appropriate platform for effective participatory approach to coastal and marine area management
Key Ministries	
i. Ministry of Tourism (MINTOUR)	Elaboration of the national tourism policy
ii. Ministry of Environment and Nature Protection (MINEP)	Elaborate and develop environmental policy, legislation, programmes and strategies. Management and coordination of activities related to environment
iii. Ministry of Forest and Wildlife(MINFOF)	In charge of the elaboration, implementation and evaluation of national policy on forest and wildlife; coordinates management and conservation of forests of the national domain
iv. Ministry of Economy, Plan and Territorial Development (MINEPAT)	In charge of elaborating government general framework for medium and long term development plans, preparing investment plans and promoting public investments, coordinating all projects dealing with planning at local, national levels
v. Ministry of Water and Energy (MINMEE)	Coordinates the national policy of production, transport and distribution of water and power
vi. Ministry of Land and Landed Property Affairs (MINDAF)	Conception, implementation and evaluation of land property policy, manages the national land and proposes land use framework, protects the public and private lands and conceives cadastral plans, delivers land certificates
vii. viii)Ministry of Urban Development and Housing (MINUDH)	In charge of improvement of habitat condition and occupation of land, conservation of landed property and natural ecosystems, elaboration and execution of land ownership urbanization and housing policy, ensures waste disposal management in town
viii. Ministry of Transport (MINTRANS)	Coordinates development activities related to land, sea and air transportation
ix. Ministry of Finance and Budget (MINFIB)	Collects taxes, prepare overall framework for national budget execution
x.	
xi. Ministry of Communication (MINCOM)	Facilitation and dissemination of information on issues related to coastal development
xii. Ministry of External Relation (MINREX)	In charge of international conventions, treaties and protocols on the environment and development including marine and coastal areas

6.5.3. Problem identification

During the stakeholder workshop, the following root causes were identified for tourism:

- Construction of hotels and related facilities are not well planned and have not followed the rules of urban master development plan;
- Limited and inadequate infrastructure (roads, electricity, water, communication and accommodation facilities);
- The local community derive little benefits from tourism activities;
- Most of hotels are concentrated in Kribi urban area;
- No system of control and organization of this sector are in place;
- Tourism activities are poorly organized;
- Tourism attractions are poorly developed;
- There no information centre and limited advertisement on tourism potential in the area;
- There is no tourism code and a system of planning tourism infrastructure construction at local level.

6.5.4. Tourism management within the Kribi Campo coastal area

The sustainable tourism management in the Kribi Campo coastal zone will help to increase the income from ecotourism by developing appropriate tourist infrastructure and actions in an ecologically sensitive and financially viable manner. In order to insure this, the following actions are proposed:

- Development of local policy and a local master plan for tourism sector to be integrated in the national master plan;
- Marketing, publicity and visitor information;
- Development of infrastructure.

Development of a local policy and master plan for tourism sector

Develop a strategy for the long-term management of tourism and ecotourism in the area. The strategy should include options such as leasing tourism operations or individual camps to an NGO or to a tour company. The master plan should be validated at the local level and been implemented with reinforcement of capacity of local responsible structures.

Ensure that the area is fully integrated within national and regional tourism strategies. To boost tourism numbers, the Kribi Campo coastal zone must be fully integrated within regional and national tourism strategies. Information on the area should be provided at all the main hotels in Kribi, Limbe, Douala and Yaoundé.

Maintain close and effective contact with the Ministry of Tourism.

The relationship should be revived and greater involvement by MINTOUR in the provision of tourism services should be encouraged.

Inventory and management of principal tourist attractions in the national park, the coastal area and their surroundings

An inventory of all tourism attraction along the beaches, the coast, in the Campo Ma'an national park and its surroundings should be done. Existing tourism attractions and activities should be maintained. A number of locally-available sites and activities could be developed for tourism. Tourist activities such as boat and canoe tours, sport fishing, bird watching, guided tours in the national park, water falls, mangroves etc. can also be developed.

Marketing, Publicity and visitor information

Produce brochures, fact sheets and other items that will enhance visitor appreciation of the tourist potentials and attractions of the area for distribution and sale

A well-produced high-quality brochure including information on maps, itineraries, keys protected large mammals, birds, plant species, touristic attractions and facilities is required together with a fact sheets that provide information on accommodation, camps, fees, porters and a map of key features. Checklists of mammals, birds, keys plant species and attractive vegetation types should also be made available.

Regularly update relevant websites with accurate information

Many tourists use the internet to access information concerning tourist destinations. It is important therefore that websites at WWF-CPO, MINFOF and MINTOUR are updated regularly and contain relevant information for prospective visitors. The project should also investigate the possibility of establishing its own independent website.

Develop links with private tour operators and travel agents

To provide better publicity for the area and boost tourism numbers and revenue increased involvement by private tour operators and travel agents, both national and international, is recommended.

Target the expatriate tourist market

This group represents an important potential tourism market and should be targeted.

Promote the tourism potentials of the area using regional and national media

To raise the awareness of area as a tourist destination, greater use of national and regional media services is recommended.

Establish and develop a Tourist Information Centre

A Tourist Information Centre should be created in Kribi and equipped with a website, video, slide projector, video and digital camera to function as a venue for visiting school children, students and other interested parties. Basic information concerning opening hours, accommodation and available restaurants, fees and services should be prominently displayed outside the building. It should be able to provide regular talks, lectures and slide-shows to explain the importance of biodiversity conservation and sustainable management of natural resources in the area.

Development of ecotourism and sustainable viable incomes generating activities

This will help to increase the income generated from ecotourism and highlight the potential benefits of ecotourism to local villages. More emphasis should be attached to increasing the benefits of tourism to the people. If local people are to participate effectively in tourism, a campaign to raise levels of awareness is required. Many tourists visiting the area wish to purchase a reminder of their visit and local handicrafts are often preferred. Traditional handicrafts produced in the area should be made available for sale at the Tourist Information Centre and other tourist attraction sites. Furthermore, there is a need to train local guides and to provide financial and technical supports to local community development initiatives.

Development of infrastructure

Existing infrastructures should be maintained and sustained. Tourist observation areas, rainforest trails, hiking trails, loop trails and campsites should be established in the national park and at the Lobe, Bongola in the Dipikar Island and at the Memve'ele water falls. Other wildlife viewing infrastructure and rainforest viewing trails and campsites should be established in Campo, Mont d'Elephant and Massif des Mamelle in the national park. Some coastal forest area situated at the periphery of the park can be dedicated to sport hunting.

Main goals, objectives and actions to address root causes identified are presented in table 25.

TABLE 25 TOURISM ACTION PLAN FOR THE KRIBI CAMPO COASTAL AREA

Objective	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
Goal F1: To ensure a sustainable tourism management in the Kribi Campo coastal area in order to increase income from tourism activities by developing appropriate tourist infrastructure and actions in an ecologically sensitive and financially viable manner.						
1.1 Develop a local policy and a master plan for tourism sector	<ol style="list-style-type: none"> 1. Develop a strategy for the long-term management of tourism and ecotourism in the area 2 Coordinate tourism and ecotourism activities 3 Inventory and management of principal tourist attractions in the national park, the coastal area and their surroundings 	MINTOUR	<p>MINEP; MINFOF MINEPAT; MINMEE MINLLPA MINUDH MINTRANS MINFIB; MINCOM MINREX; Authorities; MunicipalitiesNGOs; Local communities</p>	<p>Long term</p> <p>Long term</p> <p>Short term</p>		
1.2 Develop and implement an effective marketing strategy in order to increase incomes and jobs opportunities	<ol style="list-style-type: none"> 1 Produce brochures, fact sheets and other items that will enhance visitor appreciation of the tourist potentials and attractions 2 Develop links with private tour operators and travel agents 3 Establish and develop a Tourist Information Centre 4 Develop and promote ecotourism and sustainable viable incomes generating tourism activities 5. Development and valorization of tourist sites 6. Promote the tourism potentials of the area using regional and national media 	MINTOUR	<p>MINEP; MINFOF MINPAT; MINMEE MINTRANS MINFIB; MINCOM MINREX; Authorities Municipalities NGOs; Local communities</p>	<p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Long term</p> <p>Long term</p> <p>Long term</p>		
1.3 Develop appropriate touristic infrastructures and amenities	<ol style="list-style-type: none"> 1 Improve the quality of existing infrastructures 2 Develop and establish new infrastructures such as art craft and cultural centres, tourist observation areas, rainforest trails, hiking trails, loop trails, campsites wildlife viewing and sport hunting infrastructure 3 Ensure the improvement of road, water and electricity facilities 	MINTOUR	<p>MINEP; MINPAT MINTRANS MINFIB; MINCOM MINREX; Authorities Municipalities; NGOs Local communities MINFOF; MINMEE</p>	<p>Long term</p> <p>Short term</p> <p>Long term</p>		

6.6. POLLUTIONS

6.6.1. Introduction

Pollution is a major issue in the Kribi Campo Coastal Area due to the fact that there are two large agro industrial companies (HEVECAM and SOCAPALM) in this zone and also due to the fact that the Kribi region hosts the terminal of Chad Cameroon pipeline with an installation in Cameroon coastal waters of floating tank to receive crude oil from the Republic of Chad, there is also a production petroleum platform located at Ebome near Kribi operated by PERENCO company. This has led to a high risk of pollution by hydrocarbons and other sources in the area. In this area many development projects are planned to take place such the deep sea port project at Grand Batanga, the mineral port at Lolabe, located at 25 km south Kribi for the exportation of iron mineral, the gas plant by Cameroon government and the electricity company AES SONEL at Kribi. All these activities placed the Kribi Campo coastal zone amongst hotspot points for pollution within the littoral zone.

6.6.2. Pollution management in Cameroon

6.6.2.1. Institutional framework for pollution management

Table 26 summarizes key institutions involved in pollution management

Apart these government institutions there is a National Hydrocarbon Company which is a para-public institution created by the government to manage hydrocarbon sector in the country

6.6.2.2. Legal framework for pollution management

Cameroon has developed several legislations on pollution and is signatory of many international conventions or agreement related to pollution management

TABLE 26 SUMMARY OF KEY INSTITUTIONS INVOLVED IN POLLUTION MANAGEMENT IN CAMEROON

Institutions/organisation/ organs/ministries	Main role and responsibility in sustainable development
1) Presidency	Promulgating the laws enacted by parliament. Through decrees, he regulate government policies relating to coastal management, sets up and organizes administrative structures with well-defined roles in marine and coastal area management
2) National Assembly	Ratifies international conventions and treaties on coastal issues to which Cameroon is a signatory
Coordinating organs	
3) The Interministerial Committee for Environment (ICE)	-Ensures and coordinates the involvement of all ministries in the management of the coastal and marine environment and its resources
4) The National Environment and Sustainable Development Advisory Committee	Provides an appropriate platform for effective participatory approach to coastal and marine area management
5) The National Environmental and Sustainable Development Fund (NESDF)	Set up by the environment framework law of 1996; it is a funding structure for the implementation of the National Environmental Management Plan (NEMP)
Key Ministries	
6) Ministry of Environment and Nature Protection	Main government ministry in charge of pollution monitoring, management and coordination of activities related to environment Coordination of Interministerial/multisectoral committees established within MINEP on policy issues related to environmental protection
7) Ministry of Economy, Plan and Territorial Development (MINEPAT)	In charge of elaborating government general framework for medium and long term development plans, preparing investment plans and promoting public investments, coordinating all projects dealing with planning at local, national levels
8) Ministry of Water and Energy (MINMEE)	Coordinates the national policy of production, transport and distribution of water and power
9) Ministry of Urban Development and Housing	In charge of improvement of habitat condition and occupation of land, conservation of landed property and natural ecosystems, elaboration and execution of land ownership urbanization and housing policy, ensures waste disposal management in town
10) Ministry of Scientific Research and Innovation (MINRESI)	In charge of the implementation of government policy on scientific research and innovation through operational research structures
11) Ministry of Transport (MINTRANS)	Coordinates development activities related to land, sea and air transportation, pollution monitoring and surveillance at sea
12) Ministry of Mine, Industrial and Technologic Development (MINMIDT)	In charge of implementation of government policy on mining, industrial and technologic development; monitoring and surveillance of coastal and marine water with regard to pollution

a) National regulations related to pollution management

- Environmental framework law n° 96/12 of August 5, 1996 on environmental management. This Law is a guide to implement the Environmental Management Plan (NEMP) adopted in April 1996 and which is under review. This law enumerates the principle of precaution, of pollutant-pay, of responsibility, of participation and of subsidiarity.

- The National Environmental Management Plan (NEMP) adopted in 1996 which identified coastal and marine areas as fragile ecological region which need an integral protection through sustainable management of its resources. For coastal and marine zone, the NEMP adopts the following strategy on pollution::
- prevention and control for pollution (land based and marine based);
- Law no 94/01 of January 1994 on forests, wildlife and fishing
- Law no 96/14 of 05th August 1996 regulating transport by pipeline through national territory of liquid or gas hydrocarbons from neighbouring countries
- Law no 98/005 of 14th April 1998 on Water Regime

This law regulating environmental management principles and public health protection directly link with water regime; it insists on:

- Protection of water against pollutants
- Preservation of water resources and the quality of water for human consumption
- Sanctions from non-respect of the provision of this law
- Law no 64-LF-3 of 6th April 1964 on mineral substances regime with application decree no 68/DF-224 of 6th April 1964
- Law no 89/027 of 29th December 1989 on toxic and dangerous wastes
- Law no 98/021 of 24th of December 1998 on the organization of port sector and application decrees, organizing and creating autonomous ports of Douala, Limbe, Kribi and Garoua
- Decree n°94/259/PM of 31 May 1994 creating the National Consultative Commission for Environment and Sustainable Development (CNCEDD)
- Decree n°1999/780/PM of 11 October 1999 modifying and completing provisions related to article 3 of Decree n°94/259/PM of May 31, 1994
- Decree no 2005/0577/PM of 23rd February 2005 fixing modalities for carrying out environmental impact studies
- Decree n° 2001/162/PM of May 8, 2001 fixing the modalities of the designation of staff for surveillance and control of water quality
- Decree n° 2001/163/PM of May 8, 2001 regulating the protection around surface water source and ground water
- Decree n° 2001/164/PM of May 8, 2001 precisising the modalities of the protection of surface and ground water against pollution

- Decree n°77/528 of December 1977 regulating storage and distribution of petroleum products

Implementation of these instruments has been hampered or delayed by several factors such as:

- Incomplete legal framework
- Inadequate legal texts
- Gaps on regulatory instruments
- Lack of adequate logistic to apply laws
- Weak human and financial capacity
- Insufficient international support

b) International agreement related to pollution management

Despite the multitude and various national legislations on pollution management , Cameroon government is party of several agreement/conventions related to pollution, notably:

- The Abidjan Convention, 1981 on cooperation and protection of marine and coastal environment in West and Central African Region Central
- International Convention on Civil Liability for damage due to pollution, Bruxelles, 1969
- International Convention on Intervention at high sea in case of accident causing hydrocarbon pollution, Bruxelles, 1969
- International convention for safety of human life at sea , London 1974
- United Nations Convention on the Law of the Sea, Montego Bay, 1982
- International Convention on the prevention of marine pollution from ships, MARPOL 73/78
- International convention on preparation, fight and cooperation on pollution by hydrocarbons, ORPC, 1990
- International convention on liability for damage due to hydrocarbon pollution , CLC 1969
- United Nations Convention on climate change , Rio 1992
- United Nations Convention on Biological Diversity, Rio 1992
- RAMSAR Convention on Wetland

6.6.3. Problem identification

During the stakeholder workshop held in Kribi from 11 to 12 March 2010, the following root causes were identified for pollutions:

- ← - Lack of adequate waste treatment plant
- ← - Non respect of regulation
- ← - Increase of industrialization and use of inadequate technologies
- ← - Lack of education and awareness on the risk of pollution
- ← - Lack of political will
- ← - Non-compliance to international agreement
- ← - Absence of public facilities on beaches such as toilets, waste collecting system
- Non respect of MARPOL Convention (absence of reception facilities in Ports, dumping of waste at sea by ships)
- ←

6.6.4. Pollution management within the Kribi Campo area

Previous studies identified in the Kribi Campo area a wide variety of point and non-point source pollutants and wastes enter the coastal ecosystems largely through water ways. This has adverse effects on coastal and marine ecosystems and human health. Despite of numeral regulations and institutions put in place by the government there is no efficient control, few fragmented control cannot ensure effective pollution management. Coastal activities should be planned and managed to ensure that pollution and waste do not compromise opportunities for sustainable coastal development. Main goals, objectives and actions to address root causes identified presented in table 27

TABLE 27 POLLUTION ACTION PLAN FOR THE KRIBI CAMPO COASTAL AREA

Objectives	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
Goal B1: To implement pollution control and waste management measures in order to prevent, minimize and control harmful discharges into the coastal environment						
1.1. Prevent discharge of all land based point and diffuse sources to end up in coastal ecosystem	<ol style="list-style-type: none"> 1. Monitor waste discharge into the coastal environment 2. Document and give annual statement on quantity and quality of waste 3. Coordinate pollution control activities 4. Encourage treatment of pollution discharges at sources 5. Create economic incentives to promote waste minimization, re-use and recycling 6. Establish cooperative arrangement between port authorities and local municipalities 	MINEP	MINEPIA MINT MINIMIDT MINMEE, SNH, Port authorities, municipalities, NGOs	Long term Short term Long term Long term Short term Short term		
1.2. Prevent marine pollutants and waste products from ship operation and maintenance into coastal waters	<ol style="list-style-type: none"> 1. Implement international protocol and agreements to which Cameroon is a party 2. Control of discharge of hazardous, toxic waste substances, ballast water from ship (ship board waste)and waste products from ship maintenance such as abrasive blasting material, paint removers 	MINEP	MINT; NGOs MINIMIDT MINMEE, SNH, Port authorities, municipalities	Short term Long term		
1.3. Implement adequate and effective anticipatory and reactive measures to reduce adverse effects of human-induced coastal pollution disasters and hazards	<ol style="list-style-type: none"> 1. Develop and update a local disaster contingency plan and identify key roles and responsibilities 2. Oblige high pollution risk industries to have an emergency plan and code of conduct 3. Establish a cost clean up and rehabilitation and penalties imposed on polluters 	MINEP	MINATD MINT; NGOs MINIMIDT MINMEE, SNH, Port authorities, municipalities	Long term Short term Short term		
Goal B.2. To manage polluting activities to ensure that they have minimal adverse impact on the health of coastal communities and coastal environment						
2.1. Implement pollution control and waste management measures	<ol style="list-style-type: none"> 1. Establish a waste discharge permits system 2. Establish relevant indicators for the monitoring of the pollution status of sensitive ecosystems 	MINEP	MINIMIDT MINMEE, SNH, Port authorities, municipalities	Short term Short term		

6.7. MANGROVE, COASTAL FOREST AND WILDLIFE MANAGEMENT WITHIN THE KRIBI CAMPO COASTAL AREA

6.7.1. Introduction

The Kribi Campo Coastal zone is part of the Campo Ma'an National Park (PNCM) area which is known for its high conservation value and its rich biodiversity. The site is unique combining many vegetation types with species of high conservation priorities such as endemic, rare, new and threatened plant species. More than 1500 plants belonging to 640 genera and 141 families with more than 114 endemic species, 390 invertebrates, 122 reptiles, 302 birds and 80 species of mammals have been identified in the PNCM and its surroundings. The diversity of marine fish is comparable to that known in Cameroon coastal waters. More than 381 species have been recorded, with additional 70 species associated to brackish waters.

In the study area, mangrove ecosystems are not well developed and are mainly located along the Nyong, Lokoundjé and the Ntem river estuaries. These mangroves are nurseries areas for many fish species. From the 6 species of marine turtles, 4 are known to occur in the study area, in particular at the Ebodje beach located south of Kribi from about 50km to Kribi.

6.7.2 Institutional and legal framework for sustainable management of mangrove, coastal forest and wildlife in the Kribi Campo coastal area

Key institutions involved in mangrove, coastal forest and wildlife management in Cameroon are summarized in table 28

Cameroon effort to conserve and ensure the sustainable management of its coastal and marine environment is reflected in:

- The National Environmental Management Plan (NEMP) adopted in 1996 which identified coastal and marine areas as fragile ecological region which need an integral protection through sustainable management of its resources.

TABLE 28 SUMMARY OF KEY INSTITUTIONS INVOLVED IN THE SUSTAINABLE MANAGEMENT OF MANGROVE, COASTAL FOREST AND WILDLIFE IN CAMEROON

Institutions/organisation/organs/ministries	Main role and responsibility in sustainable development
a) Institution	
Presidency	Promulgating the laws enacted by parliament. Through decrees, he regulate government policies relating to coastal management, sets up and organizes administrative structures with well-defined roles in marine and coastal area management
National Assembly	Ratifies international conventions and treaties on coastal issues to which Cameroon is a signatory
b) Coordinating organs	
i. The Interministerial Committee for Environment (ICE)	-Ensures and coordinates the involvement of all ministries in the management of the coastal and marine environment and its resources
ii. The National Environment and Sustainable Development Advisory Committee	Provides an appropriate platform for effective participatory approach to coastal and marine area management
iii. The Forest Environment Sectoral Programme	Dedicated to the coherent integrated development of forest, fauna and environment; is in charge of the management of protected areas through implementation of their management plans
iv. The National Environmental and Sustainable Development Fund (NESDF)	Set up by the environment framework law of 1996; it is a funding structure for the implementation of the National Environmental Management Plan (NEMP)
b) Key Ministries	
i. Ministry of Environment and Nature Protection (MINEP)	Management and coordination of activities related to environment Coordination of Interministerial/multisectoral committees established within MINEP on policy issues related to environmental protection
ii. Ministry of Forest and Wildlife (MINFOF)	In charge of the elaboration, implementation and evaluation of national policy on forest and wildlife; coordinates management and conservation of forests of the national domain
iii. Ministry of Agriculture and Rural Development (MINADER)	Elaboration and implementation of government policy in the agricultural and rural development sector
iv. Ministry of Economy, Plan and Territorial Development (MINEPAT)	In charge of elaborating government general framework for medium and long term development plans, preparing investment plans and promoting public investments, coordinating all projects dealing with planning at local, national levels
v. Ministry of Water and Energy (MINMEE)	Coordinates the national policy of production, transport and distribution of water and power
vi. Ministry of Livestock, Fisheries and Animal Husbandry (MINEPIA)	Ensures management, conservation and development of fisheries and livestock
vii. Ministry of Land and Landed Property Affairs	Conception, implementation and evaluation of land property policy, manages the national land and proposes land use framework, protects the public and private lands and conceives cadastral plans, delivers land certificates
viii) Ministry of Urban Development and Housing	In charge of improvement of habitat condition and occupation of land, conservation of landed property and natural ecosystems, elaboration and execution of land ownership urbanization and housing policy, ensures waste disposal management in town
viii. Ministry of Scientific Research and Innovation (MINRESI)	In charge of the implementation of government policy on scientific research and innovation through operational research structures
ix. Ministry of Transport (MINTRANS)	Coordinates development activities related to land, sea and air transportation
x. Ministry of Finance and Budget (MINFIB)	Collects taxes, prepare overall framework for national budget execution
xi. Ministry of Tourism (MINTOUR)	Elaboration of the national tourism policy
xii. Ministry of Public Work (MINTP)	Prepares plans and follow up construction of key infrastructures related to public work
xiii. Ministry of Defence (MINDEF)	Assures safety over the national territory, in coastal and marine area through the marine national
xiv. Ministry of Communication (MINCOM)	Facilitation and dissemination of information on issues related to coastal development
xv. Ministry of External Relation (MINREX)	In charge of international conventions, treaties and protocols on the environment and development including marine and coastal areas
xvii) Ministry of Mine, Industrial and Technologic Development (MINMIDT)	In charge of implementation of government policy on mining, industrial and technologic development

- Law no 96/12 of 5th August 1996 on Environmental Framework. This law contains mechanisms for reinforcement, guiding principles, national policy and strategic measures, guidelines for sectoral and cross cutting management with regard to coastal environment protection, coastal resources management and sustainable development. The environmental framework law develops pertinent mechanisms on environmental impact assessment (chapter 1); classified establishments (section 2); protection of receptors environments (chapter 3), inland waters and flooding planes (article 25), protection of the coast and marine waters (section 3), protection of soil and sub-soil (section 4).
- Law no 94/01 of January 1994 on forests, wildlife and fishing defining natural parks and reserves. In article 30 on communal forests, this law gives the possibilities to local councils to apply for a land certificate on a forest whose objectives and limits are defined. This important measure is a precious tool for local councils facing the challenge of reducing pressure on land in order to plan future facilities without constraints.
- Decree no 2005/0577/PM of 23rd February 2005 fixing modalities for carrying out environmental impact studies.
- Decision no 6069/MINTP of 8th March 2005 fixing different category of operations which the realization is submitted to the environmental impact study.

Cameroon is a signatory to and member of major international conventions relating to sustainable forest management, biodiversity conservation and environmental protection, amongst which the most characteristics are:

- Convention on the conservation of natural resource and nature (Algiers, 1968);
- Convention on the protection of cultural and natural heritage (Paris, 1972);
- Convention on the international trade in endangered species of wildlife flora and fauna (CITES - Washington, March 1973);
- African Timber Organization (ATO - Bangui, 1974);
- Cooperation agreement of countries of Central Africa relating to the conservation of wild fauna (Libreville, April 1983);
- International agreement on tropical timber (Vienna, 1983);
- Vienna Convention on the protection of the ozone layer (Vienna, March 1985);
- Convention on climate change (June, 1992);

- Convention on biological diversity (Paris, October 1994);
- Convention on the Conservation of Migratory Species of Wildlife (ratified in 1981);
- African Convention on the Conservation of Nature and Natural resources (ratified in 1978);
- Convention concerning the protection of world cultural and natural patrimony (ratified in 1983);
- The United Nations Convention on the Law of the Sea (ratified in 1985);
- The Montreal Protocol on substances that deplete the Ozone layer (ratified in 1989);
- The Framework Convention on Climate Change (ratified in 1994);
- United Nations Convention to Combat Desertification in those countries experiencing serious Drought and/or Desertification, particularly in Africa (ratified in 1994);
- UNESCO Convention on Man and the Biosphere (MAB 1971) and World Heritage;
- Convention for Co-operation in the Protection and Development of the Marine and Coastal Ecosystem;
- The Convention to Combat Desertification (ratified in 1997).

Implementation of these instruments has been hampered or delayed by several factors such as:

- Incomplete legal framework;
- Inadequate legal texts;
- Gaps on regulatory instruments;
- Lack of adequate logistic to apply laws;
- Weak human and financial capacity;
- Insufficient international support.

The following groups of stakeholders are involved in biodiversity conservation and the management of forest and wildlife resources in the area:

- Governmental agencies;
- Public decentralized institutions;
- Community-based institutions and organizations;
- Local communities;
- Small scale producers;
- The formal private sector;
- Universities and research centers;
- National non-governmental organizations;
- International institutions.

6.7.3. Problem identification

Despite the rich biodiversity of the area, local pressure is increasing and there are several activities that are carried out with varying ecological impacts on the forest ecosystem and its wildlife populations.

These include:

- Agricultural activities that include large scale agro industrial activities, shifting, slash and burn agriculture;
- Overexploitation of timbers and non-timber forest products;
- Overexploitation of wildlife resources (illegal hunting and poaching of threatened and protected species);
- Overexploitation of fishery resources;
- Exploitation of threatened species of marine turtles;
- Degradation of forest, vegetation communities and fragile ecosystems;
- Degradation of coastal habitat/coastal erosion.

6.7.4 Sustainable management of mangrove, coastal forest and wildlife within the Kribi Campo area

The sustainable management of mangrove, coastal forest and wildlife in the area will be achieved through four main goals:

- To ensure the sustainable management and conservation of mangrove, coastal forest resources and wildlife;
- To protect and control exploitation of wildlife, mangrove and forestry resources;
- To carry out research and monitoring;
- To promote participative management and community development.

Ensure the sustainable management and conservation of mangrove, coastal forest resources and wildlife

Keys protection areas should be identified along the coastal and forest zone, and set aside:

- For conservation, management and propagation of wildlife and for the protection and management of fragile habitats and ecosystems. In these areas, hunting will be forbidden, except by authorization of MINFOF as part of duly approved management plans;

- As production forest for the sustainable exploitation of timber species and non timber forest products. In these forest, customary rights relating to hunting, fishing and harvesting therein shall be controlled;
- As mangrove sanctuary for full protection of mangrove communities and ecosystems. Any activity leading to the destruction of these plants communities is forbidden;
- As hunting zone where hunting activities are authorized and carried out in accordance with hunting regulations.

All these conservation key priority areas should be demarcated with a management plan. They should represent all distinct natural communities found in the area and help to conserve the ecological and evolutionary processes that sustains populations and creates biodiversity.

Protect and control the exploitation of wildlife, mangrove and forestry resources

An effective control system should be developed and implemented in the area in order to ensure the sustainable management of forest resources and protect the biodiversity integrity of the mangroves, the coastal area, the national park and its peripheral zone. This will involve the regular surveillance of these areas and the sensitisation of the local communities and all stakeholders concerned.

In order to ensure an effective protection of biodiversity in the park, the coastal area and the mangrove communities the following actions are proposed:

- Conservation game guards and local MINFOF staff should organize and carry out regular effective forest controls on the field;
- Increase the number of existing conservation game guards and control posts in the area;
- Organised regular sensitisation meetings with the local communities and others stakeholders concerned in order to educate and sensitise them on the importance of biodiversity conservation and the need of their protection;
- Strengthen the human (recruitment, training, financial motivation through incentives) and logistic (equipment) capacities of the park conservation service;
- Put in place an equipped, trained and functional Village Vigilante Groups to assist the conservation game guards and the local MINFOF staff during field controls and sensitisation meetings. This will help to improve the level of local participation in the sustainable management and protection of biodiversity in the area.

Carry out research and monitoring

In order to ensure a better management of the mangrove, coastal forest and wildlife in the area, there is an urgent need to:

- Establish permanent plots and wildlife monitoring transects in order to study and monitor high conservation value wildlife and plant species (endangered, threatened, endemic species), and some resources of ecological and socioeconomic interests. These permanent plots will help to collect baseline scientific information that will be used for management orientations and decision taking;
- Carry out regular wildlife, botanical, ecological, socioeconomic surveys in order to collect additional data for a better management of the area;
- Organise the development of sound data bases for an effective management and utilisation of existing information;
- Create an operational scientific committee for the coordination of research and monitoring activities. This committee will validate research and monitoring priorities, control the scientific quality and the methods used for research, and ensure a better analysis, interpretation and implementation of research results;

Promote participative management and community development.

Such program will help to put in place mechanisms for the participative management of the park, the coastal area and their surroundings, and to develop sustainable viable alternatives socioeconomic incomes generating activities with minimum impact on the environment. This can be achieved through creation and sustainable management of community forests. The development these community forests will enhance the involvement and participation of local populations in the sustainable management of forest and wildlife resources with the technical assistance local authorities in charge of forestry.

Main goals, objectives and actions to address root causes identified are presented in table 29.

TABLE 29 ACTION PLAN FOR THE SUSTAINABLE MANAGEMENT OF MANGROVE, COASTAL FOREST AND WILDLIFE WITHIN THE KRIBI CAMPO AREA

Objective	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
Goal 1: To ensure the sustainable management and conservation of mangrove, coastal forest resources and wildlife within the Kribi Campo area						
1.1 Create and establish key conservation priority areas	1 Elaborate a land use plan and map showing key conservation priority areas 2 Create and establish key conservation areas with the participation of the local community for the propagation of wildlife, protection and management of fragile habitats and ecosystems. 3 Create and establish a mangrove sanctuary for full protection of mangrove communities and ecosystems Produce a management plan for each of the identified conservation area	MINFOF	MINEP; MINTOUR MINPAT; MINADER MINLLPA; MINUDH MINRESI; MINFIB MINCOM Authorities Municipalities NGOs; Local communities	Short term Long term Long term		
1.2 Protect and control the exploitation of wildlife, mangrove and forestry resources	1 Develop a strategy for an effective and efficient control system 2 Reinforce the MINFOF and conservation game guards control facilities and capacity 3 Organise and put in place an equipped, trained and functional Village Vigilante Groups 4 Carry out sensitisation and environmental education activities	MINFOF	MINEP; MINTOUR MINPAT; MINADER MINDEF; MINUDH MINEPIA; MINFIB MINCOM; Authorities Municipalities NGOs; Local communities	Short term Short term Short term Long term		
1.3 Carry out research and monitoring activities	1 Establish permanent plots and wildlife monitoring transects in order to study and monitor high conservation value wildlife and plant species 2 Carry out regular wildlife, botanical, ecological, socioeconomic surveys 3 Develop and establish sound data bases for the effective management and utilisation of existing information	MINFOF	MINEP; MINRESI MINTOUR; MINPAT; MINMEE; MINLLPA; MINUDH; MINADER MINEPIA; MINFIB MINCOM; Authorities Municipalities; NGOs; Local communities	Long term Short term Long term		
1.4 Promote participative management and community development	1.4.1 Develop and put in place mechanisms for the participative management of the park, the coastal area and their surroundings 1.4.2 Promote the creation and sustainable management of community forest	MINFOF	MINEP; MINTOUR MINPAT; MINMEE MINADER; MINEPIA MINDEF; MINUDH MINTRANS; MINFIB; Authorities; Municipalities; NGOs; Local communities	Short term Long term		

6.8. CLIMATE CHANGE, RISK AND NATURAL HAZARDS MANAGEMENT

6.8.1. Introduction

The Cameroon coastal zone is exposed to natural risk such as volcano eruption, toxic gas emission, flooding, land slide and tornados, erosion. Kribi Campo area is specifically exposed to coastal erosion, flooding, land slide and tornados. Coastal erosion is prone in the area and leads to degradation of the coast including beaches and infrastructure and is always accelerated by human activities such as beach sand mining, and by the global warming (accelerate sea level rise). In the Kribi Campo area, there is poor planning and control of settlements along the coast

6.8.2. Institutional and legal framework

6.8.2.1. National Institutional framework

In Cameroon the main government ministry in charge of natural risk management is the ministry of Territorial Administration and Decentralization (MINATD) through its Department of Civil Protection Other institutions include:

- The Ministry of Environment and Nature protection
- Ministry of Economic and Plan and Territorial Development
- The Ministry of Public Health (MINSANTE)
- The National Civil protection Council (CNPC)
- The National Risk Observatory (ONR)
- The National Programme for Prevention and Disaster Management (PNPCGR)
- The Institute of Geological and Mining Research (IRGM)
- The national Institute of Cartography (INC)
- The Cameroon Red Cross (CRC)
- The Service of Emergency Medical Assistance (SAMU)
- National Corps of Military Pioneer (CNSP)
- International Federation of Red Cross and Red Croissant (FICR)
- High Commissariat of Refugees (HCR)
- United Nations Development Programme (PNUD)
- World Health Organization (WHO)

6.8.2.2. National Legal framework

There exist few texts or regulations on risk management in Cameroon, notably:

- Law n°86/016 of December 1986 reorganizing civil protection
- Decree n° 98/031 of March 9, 1998 organizing emergency plans and help in case of disaster
- Decree n° 2004/099 of April 2004 reorganizing the MINATD
- Presidential Instruction n° 02/CAB/PR of January 18, 1968 on the safety and protection of civil property

6.8.3. Natural risk management

The Cameroon government has put in place a strategy coordinated by MINATD based on three issues:

- i) Before the disaster: promote prevention by informing the public, sensitizing and educating the population
- ii) During the disaster: implement the contingency/emergency plan established
- iii) After the disaster: implement rehabilitation measures and support to victims

Table 30 presents natural risk management within the Kribi Campo coastal area in Cameroon

TABLE 30 NATURAL RISK MANAGEMENT WITHIN THE KRIBI CAMPO COASTAL AREA

Objectives	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
GOAL G1 To plan and manage coastal development so as to avoid increasing the incidence and severity of Natural hazards and to avoid exposure of people, property and economic activities to significant risk from coastal dynamic processes						
1. Establish a coastal development which minimize risk from natural hazards	<ol style="list-style-type: none"> 1. Protect buffer zone 2. Control activities which lead to disturbance of natural drainage patters 3. Identify and manage areas prone to high risk from dynamic processes such as coastal erosion 4. Remove or relocate fixed structures located in hazardous areas 5. Discourage extension or restoration of structure located in hazardous areas 6. Develop a precautionary risk averse approach Guide decision-making 	MINEP	MINATD MINEPAT MINEP MINTP MINDAF MINDUH MUNICIPALI TIES	Short term Long term Short term Short term Short term Long term		MINEP is the lead organization when environmental protection and planning is concerned and MINATD is a lead in case which a disaster appears
2. Take into account potential consequences of climate change and associated sea level rise in all planning and development	<ol style="list-style-type: none"> 1. Adopt appropriate preventive measures 2. Monitor impact of climate change on coastal structures and sensitive ecosystems such as estuaries, mangrove 3. Carry out public awareness on climate change implications in coastal areas 	MINEP	MINATD MINEPAT MINEP MINTP MINDAF MINDUH MUNICIPALI TIES MINFOF MINRESI	Long term Long term Short term		

6.9. COASTAL DEVELOPMENT AND LAND USE PLANNING

6.9.1. Introduction

The availability of land in the Kribi Campo Coastal Area varies following the location; for example, around Kribi, 1.02ha of land per habitant for agriculture purpose and at Campo this figure is about 17.2. The critical issue with regard to land management is observed at Nieté (about 40km to Kribi town) in the vicinity of the huge agro-industrial plantation of rubber where there is less than 0.5 ha per habitant for land for agriculture (MEAO, 2003). Given the situation that at the national level, there is 0.45ha of land per habitant, the Kribi Campo coastal zone is not the worse situation when land availability for agriculture is concerned

The problem here is conflict for land users in the area and Uncontrol settlement. The crisis of land ownership in the Kribi Campo area started in the urban areas and is now spreading to rural areas. From Kribi town to Grand Batanga toward the south and from Kribi to Londji toward the north, all plots are sold and people built within the 50m between the high level tide mark and the land, construction within the 50m zone is prohibited by law, but this regulation is not respected. Uncontrolled occupation of space lead to:

- Reduction of agricultural land for local people
- Anarchic occupation of the sea front
- Multiple land disputes or conflicts
- Occupation of the public domain in violation of regulations
- Selling of public national domain in violation of regulations
- Non-respect of the 50m where investment or construction is prohibited

Therefore, good planning of development and land use in the Kribi Campo coastal is a key issue for its sustainable management

6.9.2. Institutional and legal instruments

6.9.2.1. Institutions for land use management

- Ministry of Land and Landed Affairs

In Cameroon, the main government institutions for land management is the ministry of Land and Landed Property Affairs which is in charge of conception, implementation and evaluation of land

policies , management of the national land and proposes land use framework, protects the public and private land by issuing land certificate to individual or to companies; it also conceives cadastral plan

- Ministry of Urban Development and Housing

The main mission of this ministry is to improve habitat conditions and occupation of land in town areas, conserve landed property and natural ecosystems, elaborates and executes land ownership urbanization and housing; ensure waste disposal management in towns

- Ministry of Economy, Plan and Territorial Development (MINEPAT)

In charge of elaborating government general framework for medium and long term development plans, preparing investment plans and promoting public investments, coordinating all projects dealing with planning at local, national levels

- Ministry of Public Work (MINTP)

Prepares plans and follow up construction of key infrastructures related to public work; It is also in charge of the protection and conservation of national patrimonies with regards to port and road construction, maritime construction such as petroleum platforms

- Ministry of Territorial Administration and Decentralization (MINATD)

This ministry is in charge of the implementation of government policy on territorial organization, civil protection, and the organization of local communities

- MAETUR

MAETUR (Mission d'Aménagement et d'Etudes des Terrains Urbains) is a national company whose mission is to acquire divide up and sell plots at reasonable price so that people with low income can access to land in town areas. In the Kribi Campo area, MAETUR has acquired a housing estate at Bwambe Beach (3km from the central town of Kribi on the Kribi Campo road) where 385 plots were all sold some 6 years ago. Today, less than 20 of these plots are built. This operation of MAETUR failed because it did not favor poor people or mid-size income citizens as stated by MAETUR mission. Rich people bought these plots and kept them for future business which they will be sold higher

6.8.2.2. National legislations for land management

In Cameroon the following legislations were set up for land management

- Law n° 80/22 of 14 July 1980 on repression against those who did not respect land and landed property
- Decree n° 74/2 of 06 July 1974 fixing land regime
- Decree n°81/298 of 23 July 1981 organizing the MAEL (Mission d'Aménagement et d'Etudes du Littoral)
- Decree n°72/233 of 17 July 1972 creating MAEL

6.9.3. Problem identification

These regulations are obsolete and need to be reviewed and adapted to the present situation. The absence of a comprehensive land use planning strategy in the Kribi Campo area has been clearly identified in previous studies and during the stakeholder workshop held in Kribi from 11 to 12 March 2010. Root causes for inadequate land use and planning were: scarcity of land, lack of land security and urban development plan, low management capacity, non-application of land law, lack of control, lack of awareness on land issue, insufficient or incomplete legal framework,

A variety of development plans and initiatives are carried out in the area both by public and private sectors and address issues from poor infrastructure to amenities, inappropriate resources use, investment opportunity, housing development, recreational improvement. None of these however manage to reach meaningful levels of implementation due to not being placed within an effective implementation framework. Zoning and specifications containing in local plans should include village level participation in community planning. The goal is to establish a system that allows policy to flow freely from national level to the community level and vice versa

6.9.4. Coastal development and land use management plan for the Kribi Campo Coastal Area

The coastal development and land use management within the Kribi Campo area is presented in table 31

TABLE 31 COASTAL DEVELOPMENT AND LAND USE MANAGEMENT WITHIN THE KRIBI CAMPO AREA

Objectives	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
Goal C1 To promote the biodiversity, vitality and long term viability of coastal economies giving preference to these that are endemic to the coast						
1.1 Promote long term development potential of Kribi-Campo coastal area	<ol style="list-style-type: none"> 1. Protect and enhance characteristics and qualities that provide the lifestyle opportunities with aim to encourage appropriate local economic development 2. Develop opportunities that increase local job prospects through promotion of small, medium and micro enterprise 3. Provide the necessary infrastructure, services and amenities required for the long term development of coastal localities 4. Enhance rights, ecological and socialresponsibility 	Local municipalities	MINATD; MINEPAT MINEP; MINTP MINDAF MINDUH MINFOF MINRESI MINTOUR	Long term Short term Long term Long term		
1.2. Provide adequate and accessible public facilities at appropriate coastal locations	<ol style="list-style-type: none"> 1.Improve public facilities 2. Minimize adverse impacts on coastal ecosystems 3. Promote sustainable financing mechanisms 4. Promote public –private partnership 	Local municipalities	MINATD; MINEPAT MINEP; MINTP MINDAF; MINDUH.MINFOF; MINRESI; MINTOUR			
Goal C2. To alleviate coastal poverty through proactive coastal development initiatives that generate sustainable livelihood options						
2.1.Identify opportunities that seek to eliminate coastal poverty	<ol style="list-style-type: none"> 1. Encourage coastal development proposals that address coastal poverty 2. Diversify economic opportunities for poor coastal communities 3. Promote food security in poor marginalized coastal communities 	MINEPIA	MINEP, MINFOF MINADER MINRESI PRIVATE SECTOR MUNICIPALITIES	Long term Short term Long term		
Goal 3 To maintain an appropriate balance between built, rural and wilderness coastal areas						
3.1. Promote nodal development to sustain economic potential and protect the aesthetic, amenity, cultural and ecological value	<ol style="list-style-type: none"> 1. Introduce creative mechanisms to prevent the negative impacts of sprawl of ribbon development 	MINDUH	MINEP; MINFOF MINADER MINTOUR; MINDAF HOLTEL OWNERS MINATD; MINATDMUNICIPALITIE	Long term		

Objectives	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
			S			
3.2. Identify areas of high agricultural and commercial forestry potential	1. Protect and sustainable manage potential agricultural and commercial forestry land	MINDUH	MINEP; MINFOF MINADER MINTOUR; MINDAF HOTEL OWNERS MUNICIPALITIES	Long term		
3.3. Identify and promote distinctively coastal development opportunities	1. Integrate coastal planning efforts into existing local planning and development framework	MINDUH	MINEP;; MINFOF MINADER; MINATD MINTOUR; MINDAF HOTEL OWNERS	Short term		
3.4. Design new structures in undeveloped areas in a manner that retain their visual beauty	1. Introduce mechanisms and incentives to reward property owners who retain the visual beauty and natural characteristics of the coast 2. Maintain landscape value as an asset	MINDUH	MINEP, MINFOF MINADER; MINATD MINTOUR; MINDAF HOTEL OWNERS MUNICIPALITIES	Short term Long term		
Goal C4. To design and manage coastal settlements to be in harmony with local aesthetic, amenity, biophysical and cultural opportunities and constraints						
4.1 Design and built form of coastal settlements in harmony with the characteristics of the locality	1. Integrate aesthetic and visual consideration into planning 2. Establish a buffer zone between the shore and physical development 3. Design coastal settlements to promote a sense of community where possible 4. Promote local architectural styles and the use of local material and labor 5. Setting major roads back to the sea shore and to orienting minor roads perpendicular to the sea shore at suitable locations 6. Upgrade informal coastal settlements in order to improve quality of life of coastal communities 7. Manage and protect historical coastal settlements	MINDUH	MINEP, MINFOF MINADER MINTOUR MINDAF HOTEL OWNERS MINATD MUNICIPALITIE	Long term Short term Long term Long term Short term Short term Long term		

Objectives	Action	Lead organization	Who needs to commit	Time frame	Financial aspects (x 1000FCFA) For 5 years	Observations
4.2 Promote and enhance the socio-economic benefits of the coastal setting and the diversity	1. Control and minimize clearance of indigenous vegetation 2. Rehabilitate and replace degraded vegetation 3. Manage pedestrian and vehicle access to the coast during peak activity period 4. Promote local community involvement in coastal management	MINDUH	MINEP; MINFOF MINADER MINTOUR; MINDAF HOLTEL OWNERS MINATD MUNICIPALITIE	Long term Short term Long term Long term		

6.10. CONFLICT MANAGEMENT WITHIN THE KRIBI CAMPO AREA

6.10.1. Context and rationale

In the last few years with the growth of the coastal population, there has been increasing conflicts amongst users regarding the coastal space occupation and the use of coastal and marine resources along the Kribi-Campo coastal area. Conflict amongst resource users continues to be an issue within the Kribi Campo Area, especially between industrial fishing trawlers and artisanal fishermen, local population and agro-industrial companies, pygmies and local population for land use. These conflicts are aggravated because parties in conflict did not have the same power for action, and some do not understand some natural processes or are ignorant of existing regulatory framework.

6.10.2. Expected results

Within this action plan, the Kribi-Campo Area will have to:

- Carry out zonation of the area to cater to a multiple activities and avoid conflict among users and uses
- Promote high level public involvement where ever possible in decision making with regards to Kribi Coastal Zone management
- Create and demarcated recreational areas, trap fishing areas, boating roads;
- Increase surveillance and monitoring of activities occurring along the Kribi Campo Coast
- Review the current institutional arrangements of the Kribi-Campo Zone
- Provide a forum for addressing negotiation and when necessary adjudicating disputes through a transparent process along the Kribi –Campo Zone

6.10.3. Priority actions for conflict management

Table 32 proposed a management plan of conflicts within the Kribi Campo coastal area

TABLE 32 PRIORITY ACTIONS FOR CONFLICT MANAGEMENT WITHIN THE KRIBI CAMPO AREA

Priority action	Suggest lead	Partners	Timeframe	Financial aspects	Observations
Goal 1: Develop and implement conflict resolution mechanisms to addressing the increasing conflict amongst resource users and uses in the Kribi Campo coastal zone					
Priority Action 1.1: Carry out zonation of the area to cater to a multiple activities and avoid conflict among users and uses	MINDAF	MINRESI, MINEP, MINFOF, MINEE MINADER	Short term		
Priority action 1. 2: Promote high level public involvement where ever possible in decision making with regards to Kribi Coastal Zone Management	MINATD	NGO, MINEP	Short term		
Priority Action 1.3: Create and demarcated recreational areas, trap fishing areas, boating roads	MINEPIA	MINEP, MINEPIA MINRESI MINFOF,	Short term		
Priority action 1.4: Increase surveillance and monitoring of activities occurring along the Kribi Campo Coast	MINATD MINDEF	MINRESI MINFOF, MINEP, MINDAF	Short term		
Priority action 1.5: Review the current institutional arrangements of the Kribi-Campo Zone	MINATD	MINEP MINEPIA MINRESI	Short term		
Priority action 1.6: Provide a forum for addressing negotiation and when necessary adjudicating disputes through a transparent process along the Kribi – Campo Zone	Local council	NGO; MINEP; MINFOF	Long term		

6.11. BIODIVERSITY MANAGEMENT WITHIN THE KRIBI CAMPO COASTAL AREA

6.11.1. Introduction

The Republic of Cameroon which is situated between latitudes 2° and 13° N and between longitudes 8° and 16° E. It has an area of 475 450 sq. km, bounded to the South by Equatorial Guinea, Gabon and Congo, to the North by Chad, to the East by Central African Republic and to the West by the Federal Republic of Nigeria and the Atlantic Ocean had an estimated total population in 2003 at 16 million inhabitants and a growth rate of 2.5% per annum. The country has a long coastal line and terrestrial frontier borders. Cameroon's unique geographic situation places the country under six ecosystems which also impact on the country's climate condition, making Cameroon to be nicknamed "Africa in miniature". Administratively, Cameroon is divided into 10 Regions, each having a governor at its head, who at the same time represents the Head of State and each of the Ministers in administrative and political matters. Each Region is composed of several Divisions with Senior Divisional Officers in charged. Divisions are equally broken down into sub-divisions. Subdivisions are comprised of Councils which according to the law on decentralisation have legal and financial autonomy. Councils are comprised of local elected officials for the management of the affairs of their respective municipalities. Kribi Coastal area falls within the Ocean Division in the South Region of Cameroon.

In 2002, the government of Cameroon, in respect of its international engagements towards the Convention on Biological diversity ratified in 1994, adopted its National Biodiversity Strategy and Action Plan (NBSAP). This plan which classified the country into six ecological zones for the purpose of managing and conserving in a sustainable manner the country's biological wealth for the benefit of present and future generations, adopted the ecosystem approach to biodiversity conservation and management. Following this policy document, the ecosystems brought into the spotlight were:

- The marine and coastal ecosystem which covers the littoral part of the country (a distance of over 402km composed of the ocean, including creeks, estuaries, mangroves, and the vast coastline. It is globally divided into continental shelf, mangroves and coastal area.
- The Equatorial Dense Forest Ecosystem which covers the area between the coastal zone and is composed of the ever green humid forest,
- The savannah ecosystem constituting of shrubs and high grasslands;
- The mountain ecosystem covering all the mountainous areas of the country,

- The internal waters ecosystem covering all lakes, rivers, streams, springs, aquifers, brackish water, and other wetlands not included in the marine and coastal zone, etc.
- The sahelian ecosystem which comprises the area extending towards the Sahara desert with low rainfall and characterized by heavy deforestation, scanty grasslands, Rocky Mountains and desertification.

The NBSAP identified the problems specific to each ecosystem and priority actions to be taken to redress those problems. This document was proposed for revision in 2006 but not much progress was achieved due to several factors. The Kribi–Campo coastal area falls within the marine and coastal ecosystem of Cameroon. This area is endowed with immeasurable biological wealth but expose to over-exploitation of the various components of these resources, prone to attract industrial development due to its proximity to the sea, population increase due to migration, and lack of implementation of laws and regulations due to limited coordination to ensure adequate management of the natural resources.

The Kribi-Campo coastal area of Cameroon forms an integral part of the GCLME. The boundaries of the GCLME as described by its Strategic Action Programme (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 member countries and such areas outside national jurisdiction that fall within the boundaries above.

6.11.2. Collaboration and Expanded Cooperation

The Member countries of GCLME 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), COMIFAC, etc. The implementation of several other sectoral policies and plans do have direct impact on the Kribi coastal area. These include but are not limited to the Poverty Reduction Strategy Document (DSRP), the

Strategy for the Rural Development, the Plan for the management of the Kribi-Campo Area, the National Forestry Management Plan, the Fisheries Strategy as well as the National Environment Management Plan (NEMP) for Cameroon.

6.11.3. The NBSAP identification for the Kribi Campo Coastal Area

The Cameroon NBSAP identified the following priority actions for the marine and coastal ecosystem of Cameroon:

- Sustainable management of fisheries and other living marine resources;
- Protection of mangrove habitat,
- Prevention of pollution (from land based and sea based sources).

6.11.4. International legal instruments with direct impact on the conservation and sustainable use of biodiversity in the Kribi Campo Coastal Area

The following conventions (many of which have been ratified by the government of Cameroon), do have a direct impact on the ICAM of Kribi Campo. There are:

- The Convention on Biological diversity; 1992 and its Protocol – the Cartagena protocol on Trans boundary movement of Living Modified Organisms;
- The Ramsar convention on Wetlands, 1971
- The Convention on Migratory species (Bonn 1979),
- The Convention on Trade in Endangered species(Washington 1972);
- The UN Framework Convention on Climate Change; 1992
- The United Nations Convention on the Law of the Sea;
- 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),
- African Convention on Conservation of Nature and Natural Resources (Algiers 1968),
- 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 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 trans boundary 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 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);
- Convention concerning the Protection of the World Cultural and Natural Heritage (UNESCO) 1982;
- The Vienna convention on the protection of the Ozone layer and its Montreal Protocol on substances that deplete the Ozone Layer;
- The Convention on Ballast Water

Most of the conventions cited above have been translated into national policies, legislations and implementation texts such as the national environment management plan, the National forestry action Plan, the programme for the environment and forest sectors; the Strategy for the Development of the Rural sector; the National Biodiversity Strategy and Action Plan; the Framework law on the environment; the Forestry, Wildlife and Fishery Law; the biosafety law; and the national seed law with their corresponding implementation Decrees.

Other regional cooperation initiatives whose actions have direct impact on the resources of the area are:

- 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);
- New Partnership for Africa's Development (NEPAD) Environment Initiative;
- The Lakes Chad and Niger Basins Commissions;
- and NGOs and CBOs which contribute directly towards the integrated management of the area.

6.11.5. Institutional Arrangements:

In addition to the international and sub-regional Institutions emanating from the multilateral environmental agreements mentioned above, there are government ministries, private sectors companies and other actors whose actions contribute either positively or negatively in influencing the management of biodiversity in the Kribi Campo, notably:

MINEP; MINEPIA, MINRESI, MINFOF, MINADER, MINDIC, MINTRANS, MINIMINT, MINCOM, MINFI, MINEPAT, MINEE, MINTOUR; International organisations of the United Nations system such as GEF, FAO, AfDB, WORLD BANK, UNDP through programmes such as the PSFE, PRECESSE, Mangrove Programme, International NGOs like IUCN, WWF CARPO; BIRDLIFE INTERNATIONAL; SNV; Private sector Organisations: HEVECAM, SOCAPALM, COTCO, KRIBI DEEP SEAPORT AUTHORITY, Timber logging companies as WIJMA; La Société Forestière de Campo; CBO; Artisanal fishing associations; Village Development Associations, Women and Youth Groups, Traditional Chiefs Associations, Village Development Associations; Oil exploitation companies

6.11.6. Problem Identification

During a stakeholders consultation workshop held within the framework of the ICAM in Kribi, in March 2010, the following were identified by participants as the main environmental problems:

- Unsustainable exploitation of natural and biological resources in the area (fisheries, mangroves, other forestry and wildlife), etc.
- Inequitable sharing of benefits derived from the access to natural and biological resources and their exploitation;
- Environmental degradation due to uncontrolled natural resources exploitation;
- Soil erosion and pollution from land based sources;
- Unplanned urbanisation,
- Industrialisation,
- Invasion of protected areas by local populations;
- Invasive alien species;
- Climate change threats.
- Cross-cutting problems included:
 - Multiplicity of actors and lack of coordination amongst them;

- Poor development of local communities and their marginalisation
- Inadequate implementation of existing legislation ,
- Inadequate human resources and brain drain,
- Lack of sensitization and information of stakeholders on the real value of the biological wealth of the area,
- Lack of a national integrated marine and coastal area management framework;
- Lack of inventory of the natural and biological resources of the area.

For the purpose of the preparation of a Priority Action Plan for biodiversity management within the Kribi-Campo coastal area in Cameroon, the following terms need to be clarified in order to facilitate understanding and implementation:

Global target: desired outcome/result to be achieved within a specific timeframe. These should be measurable and achievable;

Priority action= major action that must be implemented and will contribute significantly to achieving the target. It answers the questions “What must we do to achieve this target?”

It should be noted that the deadline for achieving each target is 2015. The priority action plan is estimated to be fully implemented within a five years’ timeframe.

Actors: In implementing the PA, actors are classified into two main categories: key or main actors and then partners. The Table below identifies the priority action, the key actor or Suggested Lead, who needs to commit i.e. the supporting partners,

Initiative= Organisation instrumental to the realisation of the action as these sometimes are subjected to frequent institutional changes especially the case of government institutions.

6.11.7. Action Plan for biodiversity management in the Kribi-Campo Coastal Area

The priority action plan is broken down into six main goals and corresponding targets and several actions (Table 33). The key actors and support partners are highlighted (not in an exhaustive manner) while the timeframe for commencement of activities under priority actions is indicated. Other initiatives or organisations with roles or missions directly contributing to realisation of the actions are listed. Indication of existing endeavours and programmes being implemented or in the pipeline which could enhance the implementation of the Action plan are highlighted under the column observation.

TABLE 33: PRIORITY ACTION PLAN FOR BIODIVERSITY MANAGEMENT WITHIN THE KRIBI-CAMPO COASTAL AREA IN CAMEROON

Action	Suggest lead	Who needs to commit	Time frame	Financial aspects	Observation
Goal 1 Goal 1: Promote the conservation of marine and coastal ecosystems, habitats and biomes including their living resources					
Target 1: At least 50% of areas of particular importance to biodiversity are protected					
Priority Action 1.1: Create marine protected areas and freshwater protected areas in coastal ecosystems to enhance spawning grounds and other vulnerable areas in marine and coastal habitats;	MINFOF	MINRESI, MINEP, MINFOF, MINEE	2011		Action falls within framework of GCLME SAP. The PSFE programme also has funding from multilateral sources for this action plan under the component on biodiversity conservation.
Priority action 1. 2: Restore threatened species of fish, shrimps, molluscs, sea grass, (marine fauna and flora) etc. through mariculture and aquaculture;	MINRESI	MINEPIA MINEP	2012		Replenishing of depleted stock of fisheries species is an activity which can contribute to the conservation of endangered species of fishery resources
Priority Action 1.3: Cooperate with neighbouring countries to create marine protected areas in zones beyond national jurisdiction to improve Trans boundary resources management	MINEPIA/ MINFOF	MINEP MINRESI	2010-2012		Action falls within framework of SAP of GCLME, the CBD programme of work on protection of marine AND COASTAL biodiversity and the programme of the UNCLOS.
Priority action 1.4: Develop sustainable alternative technologies to redress mangrove habitat destruction	MINEP /MINFOF	MINRESI MINPROFF MINEE	2010-2011		FAO is already implementing a GEF funding for mangrove in the marine and coastal region for Cameroon. Ramsar convention also support work on mangroves as a habitat for wild birds.
Priority action 1.5: Involve local populations in the Management of existing terrestrial protected areas and marine protected areas;	MINFOF	MINEP; MINATD MINEPIA MINRESI	2010		Action falls within the CBD now on Protected Areas, as well as the IUCN programme for Peoples, Protected areas for sustainable livelihoods.
Priority action 1.6: Create through participative consultative process terrestrial protected areas with co-management by local communities;	MINFOF	MINEP; MINADER MINEPIA	2011		GEF funding available through the CBD process for governments to increase protected areas in consultation with ILCs;
Priority Action 1.7: Establish appropriate access mechanisms to marine and coastal genetic resources and their fair and equitable sharing of benefits with local populations	MINEP	MINFOF; MINREX MINRESI; MINADER; MINEPIA MINEPAT;	2011		EXISTING GEF/SWISS and German Governments support for ABS FOR CAMEROON OF 530.000USD MINEP to institute a national policy and legislation on Access and benefit sharing to genetic resources
Priority action 1.8: Substantially reduce land based and sea based sources of pollution and their impact on marine and coastal biodiversity/ecosystem;	MINEP /MINEE	MINCOM; MINADER, MINIMINT MINSMSE	2010		Enforcement of compliance with Environmental impact assessment (EIA) PROCEDURES

Action	Suggest lead	Who needs to commit	Time frame	Financial aspects	Observation
Priority action 1.9: Enforce compliance of national legislations and international/sub regional agreements in the area of biodiversity	MINEP	MINFOF; MINEPIA MINRESI; MINADER	2011		UNEP PROVIDES SUPPORT FOR THE implementation of MEAS
Priority action 1.10: Carry out an exhaustive inventory of fisheries species, mangrove and other plant species, their endemism and level of threats.	MINEPIA/ MINFOF	MINRESI MINEP	2012		Global Taxonomic Initiative under the CBD encourages the training of taxonomists and promotes inventories by governments
Goal 2: Promote and restore sustainable use of natural/biological resources					
Target 2: Rate of loss and degradation of natural habitats/biological resources decreased by half					
Priority Action 2.1. : Enhance and maintain capacity of marine and coastal ecosystems to deliver goods and services	MINEP	MINEP	2012		The health of marine and coastal ecosystems constitutes a programme of the CBD
Priority Action 2.2.: Develop processes for and undertake valuation of natural resources and their economic significance and use the information in decision making;	MINEPAT	MINEP MINFOF	2012		VARIOUS related conventions in the area do have provisions for natural resources valuations
Priority Action 2.3: Establish control mechanism for natural/biological resources exploitation;	MINEP	MINEP; MINEPIA, MINFOF; MINADER MINMINDT	2011		SUPPORT OF THE UNCLOS, CBD AND ABIDJAN CONVENTIONS IS ASSURED
Priority action 2.4: Identify soil erosion and pollution from land based sources;	MINEP	MINEE;MINADER MINEPIA;MINMINT	2010		
Priority action 2.5: Enforce Environmental impact assessment and remedial measures/standards in marine and coastal ecosystems	MINEP	MNEE; MINSANTE MINMINT; MINFOF MINADER	2011		ICAM PILOT STEERING COMMITTE TO BE FULLY INVOLVED AND WORK WITH OIL EXPLOITATION COMPANIES
Priority action 2.6: Institute stakeholder consultative forum/ organ on natural resource management in the framework of IMCAM	MINEP	ICAM PILOT STEERING COMMITTEE	2010		Action falls within mandate of SAP FOR GCLME and other Multilateral environment agreements
Priority action 2.7: promote ecotourism activities for sustainable development	MINTOUR	MINEP MINFOF	2010		The existing organisational chart of MINTOUR provides for this mission to be attained
Goal 3: Control threats from Invasive alien species					
Target3: Pathways for major potential alien invasive species controlled					
Priority action 3.1: Identify potential IAS and their major pathways;	MINEP	MINRESI	2011		GEF/UNEP FINANCIAL ASSISTANCE AVAILABLE THROUGH GEF 4
Priority action 3.2: Involve indigenous and local communities in the identification, prevention, control and eradication of IAS;	MINEP	ICAM PILOT SC	2011		
Priority action 3.3: Develop and implement management plans for IAS	MINEP	MINFOF; MINRESI MINFOF; MINEPIA	2011		UNEP/GEF FUNDING TO CAMEROON GOVERNMENT AVAILABLE SUPPORTED BY FAO AND IUCN

Action	Suggest lead	Who needs to commit	Time frame	Financial aspects	Observation
Goal 4: Address challenges to coastal and marine biodiversity from climate change;					
Target 4: Maintain and enhance resilience of the components of biodiversity to adapt to climate change;					
Priority Action 4.1: Institute a monitoring and observatory system for data collection and analysis of biological or physical hazards linked to climate change;	MINEP	MINRESI; MINFOF MINTRANSP MINEPIA; MINADER	2010		IMMINENT IMPLEMENTATION OF THE DECREE CREATING THE CLIMATE CHANGE OBSERVATORY
Priority action 4.2: Design adaptive integrated marine and coastal area management programmes that respond to environmental change as early warning systems for coastal/marine hazard.	MINEP	MINRESI MINTRANSP	2011		ICAM PILOT SC TO IGNITE PROCESS
Goal 5: Raise general awareness of all stakeholders on the implementation of ICAM					
Target 5: By 2015, all major stakeholders notably indigenous and local communities are sensitized on the importance of ICAM					
Priority action 5.1: Train major stakeholders in ICAM to enhance their capacity in participation in ICAM and community development;	PILOT SC	MINEP; MINFOF MINRESI; MINEPIA MINADER; MINATD	2012		ADOPTION OF THE NATIONAL ACTION PLAN FOR KRIBI-CAMPO WILL IGNITE THIS QCTION
Priority action 5.2: Provide information to relevant stakeholders (ILCs, women and youth groups, NGOs, CBOs....) on the potential of natural/biological resources availability and its sustainable use;	MINEP/PIL OT SC	MINMINT MINATD; MINFOF MINAD MINRESI; MINEE	2011		THIS ACTION IS PARAMOUNT TO ACHIEVING OTHER PRIORITY ACTIONS IN THE AREA
Priority Action 5.3: Sensitize Decision makers and key institutions on the importance of marine and coastal biodiversity and threats posed by uncoordinated policy actions;	MINEP	MINEPIA; MINRESI MINFOF; MINADER MINTOUR	2010		Pilot SC TO PARTICIPATE ACTIVELY IN REALISING THIS ACTION
Priority action 5.4: Institute a media and other programmes including tools for public awareness on IMCAM programmes	PILOT SC	MINEP; MINEPIA MINRESI; MINFOF MINADER; MINTOUR	2011		The existence of IUCN radio environment is a strong support towards the realisation of this action
Priority action 5.5: Create twinning programmes with internal and external partners, organisations, academic and research institutions	PILOT SC	COUNCILS MINEP; MINRESI MINFOF; MINEPIA	2011		
Priority action 5.6: Create public awareness on climate change impact on biodiversity and adaptation programmes;	MINEP	MINFOF; MINADER MINRESI; MINMINT MINEE	2011		THE FUNCTIONING OF THE NATIONAL OBSERVATORY ON CLIMATE CHANGE WILL ENHANCE THE SPEEDY REALISATION OF THIS ACTION

Action	Suggest lead	Who needs to commit	Time frame	Financial aspects	Observation
Goal 6: Capacity building for actors in management of ICAM is enhanced					
Target 6: The capacity of all actors involved in ICAM is significantly enhanced.					
Priority action 6.1: Train a considerable number of experts on ICAM through short term in-country workshops or in collaboration with external partners (taxonomists, experts in marine biodiversity, fisheries, protected area managers, etc.	PILOT SC	MINRESI MINESUP MINEP MINFOF MINADER	2012		Pilot SC TO CONTACT SEVERAL DONORS INCLUDING WORLD BANK within the framework of the PRECESSE PROGRAMME TO SUPPORT THE ENVIRONMENT, ADB, AND OTHER MULTILATERAL DONORS
Priority action 6.2: Provide adequate material and financial support to institutions and other stakeholders involved in ICAM in Kribi-Campo Area	MINEP	MINFOF MINRESI MINADER MINEPIA	2012		Funding to be harnessed from the GEF through FAO or UNEP and UNDP
Priority action 6.3: Provide funding to pilot projects related to ICAM;	PILOT SC	MINEP;MINFOF MINRESI;MINADER MINEPIA	2011		PROJECTS TO BE COMMUNITY DEMAND-DRIVEN AND ADDRESSING SPECIFIC ENVIRONMENT/SOCIO-ECONOMIC PROBLEMS
Priority action 6.1.4: Provide additional funding resources to projects to promote activities focusing on marginalised populations (pygmies) and gender sensitivity;	PILOT SC	MINAS; MINEP MINTOUR MINEPIA; MINADER	2011		
Priority action 6.5: Support through GEF funding (to the steering Committee of the Kribi Campo ICAM) to ensure implementation of the national plan as well as participation in the GCLME SAP	MINEP	PILOT SC; MINFOF MINRESI; MINADER MINEPIA	2011		CONULTATIVE PROCESS TO BE COORFINATED BY MINEP IN COLLABORATION WITH PILOT SC

