



## **REGIONAL ASSESSMENT OF FISHERIES ISSUES, CHALLENGES AND OPPORTUNITIES IN WEST AFRICAN REGION**

*Towards the formulation of the  
Policy Framework and  
Reform Strategy for  
Fisheries and Aquaculture  
in Africa*



# REGIONAL ASSESSMENT OF FISHERIES ISSUES, CHALLENGES AND OPPORTUNITIES IN WEST AFRICAN REGION

*Towards the formulation of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa*



**Prepared by:**

*S raphin Dedi Nadje, FCWC*

**Submitted to:**

**African Union – InterAfrican Bureau for Animal Resources (AU-IBAR)**

**Contribution by:**

- i. *Mr. Obinna Anozie, Nigeria*
- ii. *Mr. Kamorba K. Dabo, Sierra Leone*
- iii. *Dr. Moustapha Thiam, Senegal*
- iv. *Mr. Shep Helguil , Cote D'ivoire*
- v. *Mr. Samuel Quatey, Ghana*

**Edited by:**

*Dr. Mohamed Seisay, Dr. Simplicie Nouala and Dr. Benedict Satia*

**December 2012**



## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>vii</b>
<b>GENERAL INTRODUCTION</b>	<b>vii</b>
<b>A. WEST AFRICA: OVERVIEW</b>	<b>1</b>
1. The Territory, Populations	1
2. The Climate	1
3. Hydrography	1
4. Regional economic and monetary organisations	2
5. Regional Institutional and legal fisheries management frameworks in West Africa	3
6. Consumption of fisheries products	4
<b>B. MARINE FISHERIES SUB-SECTOR</b>	<b>7</b>
1. Importance of the Sector	7
2. Production Situation	7
3. Fishing Trends	8
4. Fisheries Management Governance Practices	9
5. Implementation of international instruments	12
6. Major challenges of the marine fisheries sector	12
7. Opportunities	13
8. Transition to a better result	13
Conclusion	13
<b>C. MAINLAND FISHERIES SUB-SECTOR</b>	<b>15</b>
Executive Summary	15
Introduction	15
1. Importance of the Sector	15
2. Production.	15
3. Fisheries trends	16
4. Fish Trade	16
5. Institutions and management measures	16
6. Challenges in the Sector	17
7. Opportunities	18
8. Transition to better results	18
Conclusion	19
<b>D. AQUACULTURE SUB-SECTOR</b>	<b>21</b>
Introduction:	21
1. Importance of the aquaculture sub-sector	21
2. Status of aquaculture production	21
3. Production Trend	22
4. The legal and Institutional management framework	22
5. Pressure on the sub-sector of aquaculture in West Africa	24
6. Opportunities	25
7. Critical conditions for increased production	25

---

<i>Conclusion</i>	25
<i>General Conclusion</i>	26
<b>ANNEXES</b>	<b>27</b>
<i>ANNEX 1a: Sea fishing SWOT Matrix</i>	27
<i>ANNEX 1b: SWOT Matrix for mainland fisheries</i>	28
<i>ANNEX 2: Ratification of international instruments management</i>	28
<i>ANNEX 3: Regional Evaluation Terms of Reference</i>	29
<i>Annex 4: List of Institutions and persons consulted resources</i>	31

## EXECUTIVE SUMMARY

This report is prepared in the process of formulating a Pan-African Policy Framework for Fisheries Management, as part of a process of regional consultations on the fisheries sector in West Africa.

It is a compilation of five (5) national reports from Cote d'Ivoire, Ghana, Nigeria, Sierra Leone and Senegal, and direct surveys of resource persons and institutions involved in fisheries management in West Africa (Annex 3 TORs).

An evaluation of the status of marine, mainland and aquaculture sub-sectors in the region was carried out to identify the challenges and opportunities in this sector.

Finally for each sector, priorities for sustainable management of fisheries resources in the region were identified.

## GENERAL INTRODUCTION

The African Union (AU) and its specialised technical bodies of the Inter-African Bureau for Animal Resources (AU-IBAR) and NEPAD, organized the First Conference of African Ministers of Fisheries and Aquaculture (CAMFA) in September 2010 Banjul, Gambia. The theme of the conference was “Fisheries and Aquaculture in Africa: Contribution to Agricultural Development and Economic Growth.”

The overall objective of the event was to identify and recommend priorities for the sustainable development of African fisheries for economic growth and social protection. The conference reviewed the progress made since the “Fish for All” 2005 Summit in Abuja, Nigeria and discussed options for policy and governance reform of fisheries in Africa. The role of fisheries and aquaculture in Africa within the framework of the Comprehensive Program of African Agriculture Development Programme (CAADP) was also examined.

CAMFA made concrete recommendations, which were adopted as decisions by the Heads of State and Government. It is in the context of the work of implementing these decisions that the first meeting on Pan-African Fisheries Policy Framework and Reform Strategy was held from 4th to 6th June 2012 in Abidjan, Côte d'Ivoire.

Thus, as a result of various technical presentations and group work, the meeting analysed the challenges, strengths, weaknesses and opportunities in the fisheries sector in Africa and identified priority intervention areas of the new Pan African Fisheries Policy.

To deepen thinking around relevant issues in this sector, the meeting recommended the undertaking of a regional assessment of fisheries across the five (5) regions of Africa. This regional consultation is part of framework and aims at strengthening national consultations in the West African region in accordance with the Terms of Reference of national and regional consultations.

In order to make the evaluation process participatory, discussions and contributions were extended to mainland States, Regional Fisheries Organisations, regional programs, NGOs and Civil Society Organisations in the West African region, or through questionnaires or through direct exchanges (Annex 4: List of Institutions and resources persons consulted).

One difficulty of this exercise has been the delay in the mobilisation of national reports related either to the late signing of the contract by consultants identified (Ghana and Senegal), or due to difficulties in communicating by email.

This report is a brief overview of the potential of the West African region followed by analyses of the three (3) sub-sectors of fisheries and aquaculture in the region.



## A. WEST AFRICA: OVERVIEW

### 1. The Territory, Populations

The West Africa is a geographical grouping of fifteen (15) countries in West Africa. A little more than half (9) of these countries are Francophone (Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Senegal and Togo), two (2) are Lusophone (Cape Verde and Guinea Bissau) and the five (5) others Anglophone (Gambia, Sierra Leone, Liberia, Ghana and Nigeria).

Burkina Faso, Mali and Niger are not open to the Atlantic Ocean; they are referred to as mainland countries. Cape Verde is the only island nation in the group and the eleven (11) others are coastal countries.

According to the report of the Fisheries and Aquaculture Programme of 2012 by ECOWAS, the West African countries together cover a total area of 6.13 million km<sup>2</sup>. They have 6069 km of sea coast and an Exclusive Economic Zone (EEZ) of 2,016,900 km<sup>2</sup>

This is 3411 km length of coastline for CSRP and 2658 km for the sub-region of the CCPO. And an estimated EEZ of 1.224 million km<sup>2</sup> for the SRFC sub-region and 792 500km<sup>2</sup> for CPCO.

The total population of this region of Africa is about 300 million. Four of these countries are very small in size (Gambia, Sierra Leone, Liberia and Togo) and four (4) others are quite big: Burkina Faso, Mali, Niger and Nigeria,

### 2. The Climate

In terms of climate, the West Africa is characterised by three strips of climate, namely:

- The strip that is characterised by a stretch from the Sahel climate to the desert conditions found to the North, mainly covering Senegal, Mali, Niger and Burkina Faso. It also covers 11 other countries to the North.
- The sub-Saharan and Guinean climate strip is to be found at the Central parts of the region
- The subtropical and equatorial strip is to be found to the South.

The climate is fairly mild in most coastal countries or rainfall ranges from 1050 to 2540 mm of rainfall per year. It fluctuates between a semi-arid climate and the very dry in the hinterland of Senegal and Cape Verde, where the average annual rainfall is very low, that is to say 151 to 840mm.

### 3. Hydrography

Contrary to popular belief, there is no shortage of water in these West African countries. Only two countries (Cape Verde and Burkina Faso) are located below the international standard of scarcity (1700 m<sup>3</sup> of renewable fresh water per year per person), Cape Verde is below the threshold shortage which is 1 000 m<sup>3</sup> per year (see Chart 1). In contrast, there are serious problems in terms of availability (of water) at the desired time and place.

#### Major Water Courses

The main rivers (Niger, Senegal, Gambia, Lake Chad network) have their sources in well-watered regions before crossing the Sahel which has experienced chronic low rainfall since the early 1970s. Mitigating the powerful contrasts between wet and dry areas, these water transfers are evidence of the interdependence of the West African countries. <http://www.oecd.org/fr/csao/publications/38410112.pdf>

The central and southern sub-regions are drained by a dense network of permanent streams. Thus, other than the main streams mentioned above, it is worth mentioning the following rivers: Mono, Pendjar, Ouémé, Zio, Badama Casamance Comoé Sassandra, Mano, Rio Grande Buka, Coruba and many other rivers whose importance cannot be ignored.

### **Ponds, lakes and lagoons**

The West Africa has 28 cross-border river basins (see map 3). The biggest ones are: the Niger (shared between 11 countries if we take into account the non-active part of the basin), Senegal (4 countries), Volta (6 countries), Lake Chad (8 countries), Comoé (4 countries). With the exception of Cape Verde, each West African country shares at least one stream with one of its neighbours. Fourteen cross-border basins are identified in Guinea, where many rivers have their sources. There are eight of them in Côte d'Ivoire, seven in Liberia, five in Nigeria and Sierra Leone. A total of cross-border basins cover 71% of the total area of the region. <http://www.oecd.org/fr/csao/publications/38410112.pdf>

Southern countries such as Benin, Togo, Côte d'Ivoire and Nigeria receive large rivers. These form the lagoon systems and / or deltas (the case of the Niger Delta in Nigeria) before emptying into the Atlantic Ocean.

### **Water Management in West Africa**

The West Africa undertook a regional process of integrated water basin management, which led to the adoption of a Regional Action Plan for Integrated Water Resources Management (IWRM) in West Africa in the year 2000, and the implementation under the auspices of ECOWAS of a Permanent Framework for Coordination and Monitoring (CPCS) of IWRM. In this context, ECOWAS created a "Department" of Water Resources in 2004, the Coordination Unit for Water Resources (WRCU). The WRCU develops a regional framework and integration tools to enable countries and basins to move faster and in a concerted manner to the practical implementation of IWRM.

Integrated management advocated by Institutions of the respective basins provides a coherent framework for harmonised development of fisheries resources at the inland level.

## **4. Regional economic and monetary organisations**

### *a. The Economic Community of the West African States (ECOWAS)*

Economic Community of West African States (ECOWAS) is the single largest economic grouping in the sub-region. At its inception in 1975, it brought together all the 16 countries. Mauritania withdrew in 2001. It aims to promote cooperation and integration in the context of an economic union in West Africa in order to raise the standard of living of its peoples, maintain and enhance economic stability, strengthen relations between Member States and contribute to the progress and development of the African continent. ECOWAS would eventually be the only Economic Community of the Region for economic integration and the achievement of the West African Community. Thus, the African Union designated ECOWAS during the summit in Yamoussoukro in 2002 as the body in charge of the coordination and monitoring of the implementation of NEPAD projects in West Africa.

### *b. The West African Economic and Monetary Union (WAEMU)*

The West African Economic and Monetary Union (**WAEMU**, or UEMOA in French) is another regional economic organisation which brings together eight countries that share the CFA Franc as their currency. It consists of Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo. The CFA Franc in West Africa is managed by a common central bank, the Central Bank of the States of West Africa (BCEAO).

## 5. Regional Institutional and legal fisheries management frameworks in West Africa

- *The International Commission for the Conservation of Atlantic Tunas (ICCAT English)*

The International Commission for the Conservation of Atlantic Tunas (ICCAT English) consists of 22 members, six (6) countries of West Africa: Benin, Cape Verde, Côte d'Ivoire, Ghana, Guinea, and Senegal. ICCAT is mainly concerned with fisheries in the high seas because of the migratory nature of the species studied (tuna and associated species). Its work mainly consists of the following: (i) collection and analysis of statistical information regarding the conditions, current trends in resources, measures and fisheries management methods, (ii) making recommendations for studies and surveys to be undertaken, (iii) publication and dissemination of results of its work and various types of scientific information concerning its area of intervention.

- *The Guinea Current Large Marine Ecosystem (GCLME; or GEMCG in French)*

Current Large Marine Ecosystem Project Guinea Current (GCLME) aims to support the coastal countries of the Guinea Current ecosystem to ensure the sustainability of the environment and resources. This could be done through management short-term management objectives in the sector, and objectives focused on a long-term perspective in order to preserve the potential production of goods and services for the entire ecosystem.

The project consists of sixteen (16) countries of Sierra Leone to Angola included, all influenced by the Guinea Current. This new project will help these sixteen countries to make changes in how human activities in various sectors of national life to ensure that GCLME and water basins can support sustainable socio-economic development of the region.

- *The “Protection of the Large Marine Ecosystem of the Canary Current” Project (CCLME)*

The project aims to enhance the capacity of participating countries to address issues related to declines in fisheries, threats to biodiversity and the quality of the water. It is run by a concerted approach to fight against the degradation of Large Marine Ecosystem of the Canary current caused by overfishing, habitat modification and changes in water quality by adopting an eco-systematic approach to fisheries. The seven countries participate in the project: Cape Verde, Guinea, Guinea Bissau, Mauritania, Morocco, Senegal and Gambia.

- *The Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean (COMHAFAT)*

Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean (COMHAFAT) is an intergovernmental organisation created in 1989 and composed of 22 States, extending south to Namibia Morocco to the north. The Convention establishing A COMHAFAT “regional convention of the Atlantic Fisheries Cooperation”, adopted in 1991 sets out areas and modalities of regional fisheries cooperation between the Member States. The main objectives of COMHAFAT:

- Promoting and strengthening regional cooperation on fisheries management; and
- Coordination and harmonization of efforts and abilities of the parties to the conservation and exploitation of fishery resources

- *The Committee on Fisheries of the Eastern Central Atlantic (CECAF, or COPACE in French)*

The Fishery Committee for the Eastern Central Atlantic (CECAF) was established in 1967 by Resolution I/48 adopted by the FAO Council at its forty-eighth session, held in Rome, under Article VI (2) of the Constitution of FAO.

The Committee's aim is to promote the sustainable use of marine biological resources, good management and development of fisheries and fishing activities in its area of competence.

- *The Committee for Mainland Fisheries and Aquaculture of Africa (CIFAA, or CPCAA in French)*

The Committee for Mainland Fisheries and Aquaculture of Africa (CIFAA) was established by the FAO Council in 1971, in accordance with Article VI-2 of the Constitution of FAO. Articles were amended in 1973 and 1975. Its main objective is to promote the development of mainland fisheries and aquaculture in Africa. Membership is open to all African Member States and Associate Members of FAO.

- *The Sub-regional Fisheries Commission (SRFC)*

The Sub-Regional Fisheries Commission (SRFC) is a Regional Fisheries Organisation (RFO, or ORP in French) created on 29 March 1985 and consists of seven member countries: Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal and Sierra Leone. Morocco, Liberia and Ghana are associated with the implementation of programs that is currently exclusively on sea fishing.

The PRSP area is characterized by a unique ecological environment (Canary Current) with a wealth of fishery resources which place fishing at the centre of national sectorial development strategies. In this respect, Member States of the SRFC have strategic development documents for their fisheries: Newsletters for their sectorial policies on fisheries:

- *The Intergovernmental Organisation on Information and Cooperation in Marketing of Fishery Products in Africa Abbreviated (INFOPECHE)*

The organisation regularly provides market information and provides technical advice on products and processing. It also provides training in consecutive capture in the region specialized areas. It covers the countries of Africa south of the Sahara and INFOSA unit based in Windhoek, Namibia for SADC countries (community development for the countries of Southern Africa) also INFOPECHE is part of the network regional information on fish marketing and technical consulting services (INFOFISH for Asia and the Pacific, Latin America INFOPESCA INFOSAMAK and the Arab countries).

- *The Fisheries Committee for the West Central Gulf of Guinea (CPCO)*

The CPCO is the 'last born' of Regional Fisheries Organisations (RFOs), on the Atlantic Coast of Africa after the PRC and the SRFC. It includes six (6) coastal countries of Central Gulf of Guinea that are Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria and Togo.

The Committee promotes cooperation between the Contracting Parties with a view to ensuring, through appropriate management, the conservation and optimum utilisation of living marine resources covered by this Convention and to encourage sustainable development of fisheries based on of these resources. It has a strategic plan to guide its activities. Through this plan, the Committee has a clear vision: "to become an effective, vibrant, inclusive and participatory organization for sustainable development of fishing activities in its member states" Of the six (6) specific objectives identified by the strategic plan include the restoration and maintenance of the stock of fish as well as the development and implementation of development frameworks appropriate management resources.

## **6. Consumption of fisheries products**

In African, fish is consumed on a regular basis by more than 200 million people for whom it is a major source of animal protein (WFC, 2005). Indeed, fish represents an average of 17.4% of animal protein intake in the diet of African people. In this regard, Africa is in second position, after Asia (25.7%). This proportion is even

higher in coastal and Great Lakes where it can go from 31 to 66%.

However, the consumption of fisheries products covers important differences from one country to another. As such it varies - between 12.5 and 15.45 kg / capita / Côte d'Ivoire, 25 kg / hab / Ghana, and 26 g / capita / year across Senegal, and 43 kg for one Dakar region and against 3 g / capita / in Guinea Bissau.

All these countries are facing a deficit as the availability of fish is often less than the actual demand by their peoples.



## B. MARINE FISHERIES SUB-SECTOR

### I. Importance of the Sector

Marine fishery resources are a valuable natural asset for West Africa:

- More than 1.6 million tonnes are caught annually, worth \$ 3 billion.
- Nearly 10% of GDP in Guinea-Bissau and Sierra Leone, more than 30% of export earnings from Senegal, from 10 to 30% of government revenues in Guinea-Bissau, Guinea 2.5% and 1% in Côte Ivory, 5% in Ghana.
- Moreover, fisheries sectors are well known source of direct and indirect jobs for over 3 million people. (J.verdin, Governance in West African Fisheries, Experiences from the West Africa Regional Fisheries Program).
- Intra-regional trade in fish products is not very developed due to several factors such as lack of transport infrastructure (bad roads and not highly developed aviation network). The constraints facing the free movement of goods and people, despite the ECOWAS community law, such as customs and police harassment, hinder the development of intra-regional trade in fish products.

The rapid population growth and stagnation of production from captured fisheries will have a negative impact on fish consumption per capita in the region, hence the need to support the production of marine and mainland fish and greatly increase the aquaculture production to meet growing demand.

### 2. Production Situation

Landings of marine fisheries are of importance in a country in various ways:

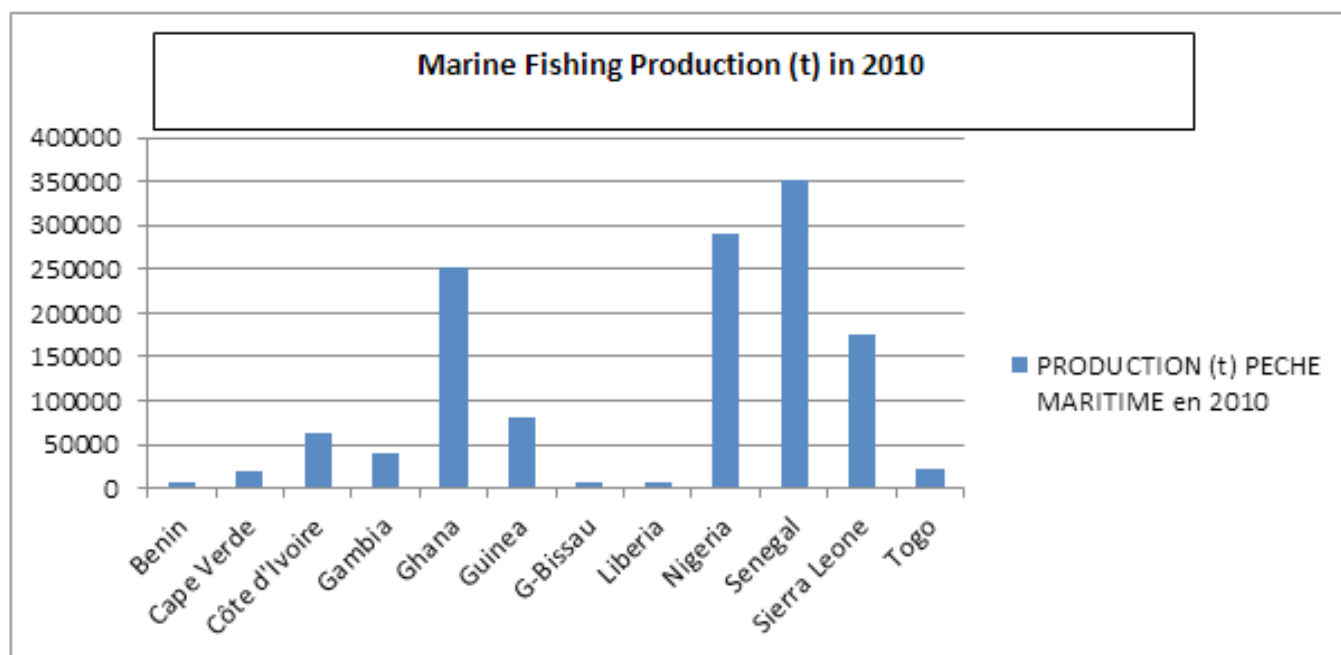
**Table I:** Production of marine fisheries in West Africa from 2000 to 2010 (t)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Benin	5,400	7,472	9,888	10,676	10,537	8,678	10,999	5,387	6,822	7,779	7,908
Cape-Verde	10,557	8,601	8,077	8,049	10,336	21,581	24,554	18,328	23,698	16,828	19,500
Cote d'Ivoire	68,439	65,149	46,948	46,295	48,525	28,370	46,988	42,901	44,499	37,474	63,929
Gambia	5,640	0,192	42,083	33,136	28,422	28,410	30,667	35,523	35,569	38,366	39,489
Ghana	363,732	357,930	286,665	302,362	313,953	304,599	280,472	233,999	265,020	223,575	251,947
Guinea	86,758	00,193	87,342	114,845	88,550	98,566	94,489	70,823	81,240	81,000	82,000
G-Bissau	5 445 F	5,526	6,850	5,757	6,240	6,540	5,997	5,885	6,408	6,404	6,404
Liberia	7,285	6,039	6,464	6,364	9,795	8,002	6,198	12,367	6,950	7,070	7,070
Nigeria	283,466	269,911	255,258	262,798	251,232	248,247	288,670	274,354	273,936	281,200	290,780
Senegal	355,087	356,435	322,388	398,152	379,356	343,885	314,174	351,292	364,802	378,619	350,769
Sierra Leone	55,571	58,979	62,606	74,908	112,477	123,410	126,995	123,218	178,564	175,185	175,007
Togo	16,822	17,324	15,262	22,007	20,754	21,498	18,761	14,312	17 684 F	20,988	21,208
<b>Grand total</b>	<b>1,284,202</b>	<b>1,283,751</b>	<b>1,149,831</b>	<b>1,285,349</b>	<b>1,280,177</b>	<b>1,241,786</b>	<b>1,248,964</b>	<b>1,188,389</b>	<b>1,305,192</b>	<b>1,274,488</b>	<b>1,316,011</b>

© FAO - Fisheries and Aquaculture Information and Statistics Service - 24/10/2012

Ghana, Nigeria, Sierra Leone and Senegal have emerged as major producers of fish in the sub-region with more than 200 000 t, followed by the group of Côte d'Ivoire and Guinea with output ranging between 50,000t and 100,000t, and at the bottom on the pack lie, Benin, Cape Green, Guinea Bissau, and Togo with less than 50 000 t.

## Production of marine fisheries in West Africa from 2000 to 2010 (t)



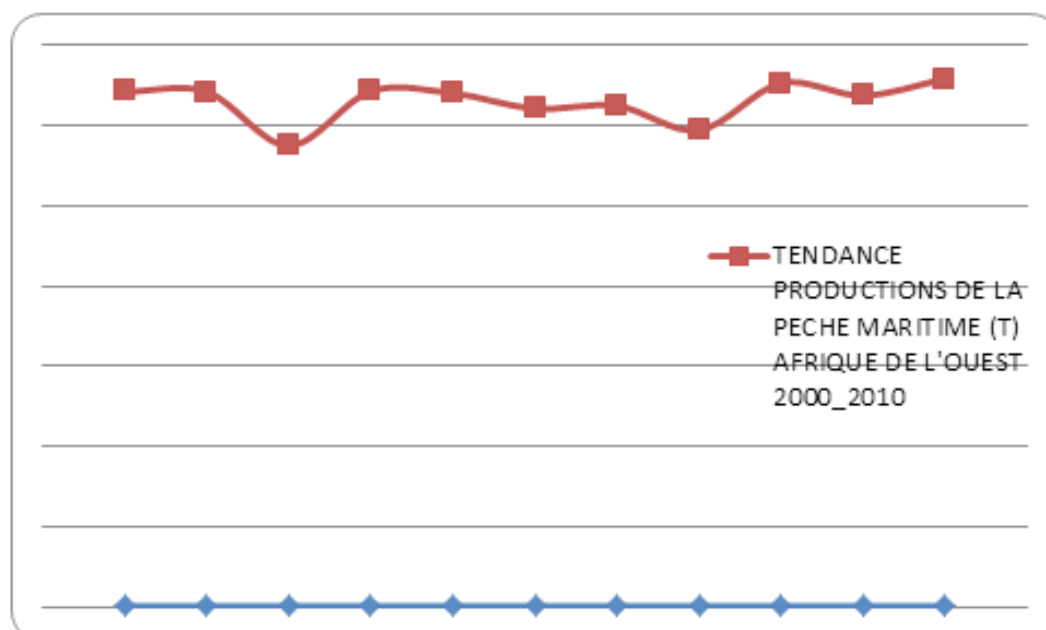
Approximately 72% of the catch is composed of small pelagics (sardines, mackerel, Bonga) small business but vital for food security at the regional level value.

The catch is usually sold or preferably on landing sites and beaches to minimize post-harvest losses and reduce the conservation operations costs.

In general, operators especially in the field of fish processing, distribution and marketing are mostly women, while the industrial sector is dominated by men.

### 3. Fishing Trends

The resources used by small scale fishermen and industrial operators include various species of fish, crustaceans, and aquatic mammals amongst others. The total annual production West African States trend towards a steady volume over the last ten (10) years, fluctuating around 1300 000 tonnes.



© FAO - Fisheries and Aquaculture Information and Statistics Service - 24/10/2012



This trend towards stagnation could signal depletion of stocks and therefore a sure bankruptcy threat for this sector.

In fact, the COPACE Working Group for the small pelagic fish in 2006 working on 2004 data, noted that majority of sardinellas stocks were overexploited and two others were fully exploited (horse mackerel and yellow horse mackerel) in the North West African stock.

Similarly on the basis of the conclusions of the working group for the 2008 demersal stock, noted that:

- The Sparidae stocks from Guinea, Sierra Leone and Liberia and *Penaeus notialis* in Liberia have been fully exploited.
- The stocks below have been considered as overexploited: *Pomadasys* spp. in Guinea, Sierra Leone and in Liberia, *Galeoides decadactylus* in Côte d'Ivoire, Ghana, Togo, Benin, *Dentex* spp. in Côte d'Ivoire, Ghana, Togo and Benin; *Pagellus bellotti* in Côte d'Ivoire, Ghana, Togo and Benin; *Penaeus notialis* in Guinea and *Sepia* spp. in Ghana.
- Only two stocks were moderately exploited; *Pseudotolithus* spp. in Guinea, Sierra Leone and Liberia and *Penaeus notialis* in Ghana.

The Working Group recommended an overall reduction in fishing effort given that most of the fisheries in the region are multi-species.

According to Sea around Us, capture levels and trophic levels are fully correlated. Therefore, fishing effort has a correlation with an area's capacity.



Source : <http://www.seararoundus.org/lme/28/200.aspx>

#### 4. Fisheries Management Governance Practices

##### At the National Level

The fisheries national management in our sub-region tries to meet the socio-economic, institutional and ecological requirements, related to National Fishery development. Thus, National Fisheries Management aims at:

- Increasing the domestic food supply, protein sources in particular, through a more efficient use of the available fishery resources
- Creation of employment opportunities for the improvement of life and fishermen's working conditions
- Contribution towards the gross domestic product (GDP)
- Contribution to rural poverty reduction.

The fisheries management measures in the region mainly involve regulations on the net size, the granting of operating licenses to fishing vessels, limiting and monitoring fishing zones, which is generally limited to the inspection of ports, except in Nigeria, Senegal and Ghana where patrol boats are available.

Free access to the fishing areas is a familiar phenomenon as far as small scale fishing is concerned, while the illegal, unreported and unregulated fishing is common to all fisheries sectors. Cases of illegal fishing from “foreign” vessels are common

Policies relating to emerging issues are fairly similar across the sub-region. The countries apply the principles of the FAO Code of conduct on responsible fishing, although they have not yet incorporated these principles in their legislative frameworks.

Fisheries administrations in the countries of the region lack human, material and financial resources to accomplish their obligations in the management of fisheries resources efficiently and effectively

Fisheries governance therefore raises several problems which are socio-economic, ecological and human in nature. Many of these problems are common to all the countries of the West African region and require coordinated efforts to be deployed in order to exchange knowledge, information, improve management tools, strengthen the monitoring, control and surveillance as well as the fight against the illegal, unreported and unregulated fishing. The major fishing problem in the region is doubtlessly the over exploitation of fishery resources and administrative capacity weakness for responsible management of resources at a sustainable level.

The management of shared resources is influenced by national policies which are insufficiently harmonised, and now based on the existence of several fisheries policies instruments, the master plans or development plans, land use plans etc. These documents have been developed for specific occasions (establishment of a new government, change of ministers responsible for fisheries, end of year or administrative preparation of the revision of donor intervention portfolios amongst others...). It is important to note that there still exist weaknesses at two essential levels for the quality of the following fisheries policy instruments.

- Lack of capacity to develop fisheries policy instruments
- Lack of complementarity of fisheries policy instruments used. Indeed, the complementarity between the various planning tools used in fisheries, such as the master plans, the national policy documents, development plans and management plans, their articulation as well as the conditions and modalities for their development require to be improved for the majority of countries in this region.

The improvement of policies and management of fisheries plans at the regional and national levels has been defined as a priority by West African countries in support of ACP program Fish II framework.

With the support of FAO, the regional program of fisheries in West Africa funded by the World Bank, as well as the ACP Program FISH II, several countries of the region (Sierra Leone, Liberia, Ghana, Togo, etc.) undertook institutional framework reform for the management of fisheries.

### ***Fisheries Management at Regional and International Levels***

Regional fisheries organisations and other arrangements have significant importance and are, according to FAO, sources of innovation in the governance of fisheries resources in accordance with international instruments.

In West Africa, in addition to the Institutions of Integration (ECOWAS, WAEMU), there are four (4) Fisheries Organisations (COMHAFAT, CECAF, PRSPS, and the CPCO) FAO, **FIPI/C I054(en)**. The States of the region also collaborate with the specialized international fisheries management organisations such as ICCAT and the environmental ones such as GCLME and CCLME. Equally, there are several sub-regional and regional professional fisheries bodies and Non-governmental organisations.

All these players are potential partners that develop their activities according to their mandate and respective means at times with limited levels of collaboration. The recurrent basis for collaboration is the signature of agreement memoranda for the joint undertaking of research work or implementation of regional projects (CSRP with PRCM, WWF, IUCN or CPCO with ADEPA, WWF, Warner, and Fish for Africa).

However there are difficulties related to the consistency of interventions and the lack of synergy between the different Institutions. This explains the CAMFA recommendation for the development of a regional cooperation framework in fisheries management in Africa.

An analysis of the level of collaboration among key regional arrangements and regional fisheries organisations involved in the development of fisheries in the region can be presented as follows:

***i. Regional Cooperation between Fisheries Regional Organisations (FROs)***

The regional collaboration between the region's FROs exists and continues to improve each year. Indeed, COMHAFAT, COPACE, CSRP and CPCO work in perfect understanding. Notice that the political decision for the establishment of CPCO, the third FRO on the East Atlantic Coast was taken during the 3rd COMHAFAT session of 1999, in Guinea and was implemented thanks to FAO's technical and financial support through COPACE in 2006.

This collaboration however remains informal and is reflected by the participation in meetings and information exchange in the fisheries sector. This should be strengthened particularly in relation to (i) Planning activities, (ii) SCS data exchange, (iii) Regional and sub-regional fishing vessels database, (iv) joint surveillance operations, (v) research in the area of stocks evaluation or oceanographic research (iv) establishment and implementation of technical management measures of cross-border fish stocks, (v) Implementation of minimal access conditions to the region's resources.

To achieve this, discussions are in progress by COMHAFAT's initiative in order to formalize this collaboration between the region's FROs with well identified interventions points.

***ii. Cooperation between FROs and Regional Integration Institutions***

The cooperation between ECOWAS and West African Economic and Monetary Union (WAEMU or UEMOA in French) on the one hand and FROs on the other hand is very low.

However, the willingness of ECOWAS to achieve strong regional and political integration of West African states gives reason for optimism on the removal of all barriers against fisheries management development and regional trade in fisheries products.

This willingness of ECOWAS has resulted in the definition of common policies and regional strategies, particularly in the agricultural sector in the broad sense with the Common Agricultural Policy (ECOWAP). Fishery resources are an integral part of the ECOWAS Common Agricultural Policy in view of which the current program is part of an ECOWAS strategy for developing the fisheries sectors into a leverage for economic and social development in the region and member states based on the three basis for production of e fisheries resources, namely: marine and coastal fisheries, mainland fisheries and aquaculture.

In addition, the implementation of the CAMFA decision of making RFOs key players in the fisheries policies at regional Economic Organisations level should allow a greater rapprochement with ECOWAS.

The two RFOs (CSRP and CCPO) based within the ECOWAS zone could be established as a technical body of this institution for the implementation of a fisheries policy (ECOWAP). This is exemplified by the existing arrangements for the development of basins (ABN and ABV), or the Coordination Unit of the Integrated Water Resources Management (IWRM) ECOWAS or between the PRC and ECCAS Central Africa.

### 5. *Implementation of international instruments*

With regard to international instruments of fisheries management (the list is available in Annex B2); we note that most of the states in the region favour the implementation of the FAO CCRF even though its implementation is optional. However, it is closely linked to binding international instruments such as UNCLOS (1982), the 1993 Agreement aimed at promoting compliance by vessels fishing on the high seas of international conservation and management (Compliance Agreement) and the 2009 Agreement on Measures of Resort of the Port State.

The Code gives special importance to the use of technical measures for management; ecosystem-approach applied to fisheries and monitoring control and surveillance (MCS) fisheries.

Although cited in most sectorial policy documents as an excellent tool for sustainable management of the fisheries sector, Member States are struggling to implement the provisions of the Code as well as the main international instruments (Annex 2).

Awareness campaigns outreach and training members for the implementation of these instruments are essential.

### 6. *Major challenges of the marine fisheries sector*

The increase in fish production is limited by several factors; the main ones are as follows:

- mismanagement and bad governance characterized by lack of transparency in the policies of African fisheries, particularly in the allocation of licenses and fishing authorizations fisheries sectors
- illegal fishing practices that develop due to inefficient resource monitoring,
- interactions / conflicts between the different fleets (small-scale and industrial)
- post-catch losses too important
- Non-compliance with hygiene and product quality standards.
- The lack of concrete management plans for our resources, developed and implemented in a participatory manner (co), which can allow a business to sustain small-scale fishing
- The lack of a strategy and policies for artisanal fisheries capable of ensuring sustainability of livelihoods of communities that depend on them
- Marginalization of this small-scale fisheries sector and lack of recognition of its potential as an engine of sustainable development.
- The competition between the activities of the coastal and marine area (tourism, industrial development, oil exploration, etc.), to the detriment of small-scale fisheries
- Business strategies in West Africa in general are not very suitable for sustainable production of fishery resources. It follows that the intra-regional trade in fish products is not guaranteed.
- The actual insufficient capacity at the research (lack of staff, little valued status) but not fishing / research collaboration, participatory research could improve the quality of data and scientific advice.
- ecosystem degradation and loss of biodiversity,
- the impact of climate change on marine fisheries
- the extension of the piracy of East Africa in West Africa,
- Exploration and exploitation of oil and gas in the area of fish production of maritime origin.

- Inadequate transport infrastructure (bad roads and air transport network not very developed) with customs and police harassment, also hinder the development of intra-regional trade in fish products, although the free movement of goods and people is within the ECOWAS community.

## 7. Opportunities

Despite the obstacles observed, the sector offers opportunities which will result in new direction include:

- The existence of RFOs and Economic and Monetary Institutions (ECOWAS, WAEMU or UEMOA in French) for better management of the sector at regional level (cross-border resources, IUU fishers migration, exchange of scientific, technical, commercial and Monitoring Control and Surveillance )
- Civil society presence is an essential partner for fisheries management (CAOPA, WADAF)
- Existence of media, including the Network of Journalists for Responsible Fisheries in West Africa (REJOPRAO)
- Presence Organisations technical and financial support such as FAO, NGOs (IUCN, WWF, etc.), Annex BI: SWOT Table

## 8. Transition to a better result

Generally, there seems to be broad support and will by many players in the sector to engage in a process of developing of new fisheries aimed at capitalising on the opportunities in the sector. Therefore, the actions below should be considered to achieve change in this sector like:

- Improve governance through reform of institutions for pragmatic response to the needs of the sector at both national and regional levels
- Support all efforts to professionalize small-scale fisheries and the recognition of the status of actors,
- Improve the monitoring of migrant fisheries and their involvement in the process of decision-making
- Strengthen the monitoring control and surveillance of fisheries through capacity building and transfer of technology needed in this area.
- Improve the business environment for fishery products for better value of exports of this sub-sector.
- Ensure permanent funding for the sector for the implementation of management measures
- Improving the collection of data and information needed for better exploitation and sustainable management of fishery resources,
- Creating port infrastructure and sites suitable for the development of fisheries landings,
- Ensure on-going scientific research of marine living resources by marine research institutes and universities.
- Ensure effective conservation and protection of resources through various control measures, including closed seasons, mesh regulations, upward revision of the fee and penalties imposed on offenders.

## Conclusion

The Regional Fisheries Organisations (CSRP, CCPO) but also regional economic development organisations (ECOWAS, WAEMU ...) intended to develop regional strategies in the field of fisheries identify issues, priorities that would allow for the direction and action planning.

However, the need to develop a coherent policy framework for fisheries management is becoming more pronounced, both to support national initiatives to generate cooperation where individual means states cannot suffice and address issues beyond the competence of a single State.

ECOWAS, the main institution of regional integration, covering all countries in the region could play a role of choice to harmonise the processes of dialogue and logical regional cooperation for the development of fisheries.



## C. MAINLAND FISHERIES SUB-SECTOR

### Executive Summary

Mainland fisheries play an important role in the food nutrition strategy and poverty reduction. This sub-sector attracts many migrant fishermen from the sub-region especially from Mali; causing many conflicts. The lack of land for commercial agriculture forces many youth residing in the water-basin to turn to fishing as an alternative means of earning a living.

The production of this type of fisheries involves movement of people (migrants) from their countries of origin to production areas, causing many conflicts.

The co-management system was introduced to better integrate all fishermen in the water body areas so to prevent or manage conflicts. An effort to strengthen institutional capacity, infrastructure development, and resource conservation in mainland waters, organisation and professionalisation of many actors in this type of fisheries activity remain priorities for mainland fisheries.

### Introduction

West Africa has a river-lagoon environment as well as numerous dams and reservoirs favourable for the development of the mainland fishing activities.

In the context of this report, a summary of review of national reports, studies, results of semi-structured interviews and questionnaire responses is made around six themes: (i) the importance of the sector, (ii) trends production, (iii) the governance of the sector, (iv) the management of the sector regionally and internationally, (v) the industry's challenges and (vi) opportunities for the sector.

#### 1. Importance of the Sector

The mainland fisheries sector is mainly a cottage-industry and occupies an important place in the national economies of the West Africa region, both in terms of food security, job creation and contribution to national wealth.

As such, the sector employs about 500 000 people in Mali, including 73 000 fishermen for a production valued in 2009 estimated at 126,750 billion and 52 billion export values.

Mainland fisheries in Nigeria provides over 85% of domestic fish supply providing livelihood to more than one million fishers and 5.8 million indirect actors (Source: Federal Department of Fisheries).

In Burkina Faso, it is the fisheries sector which provides income to nearly 11,000 people including 8,000 fishermen and 3,000 traders and processors of fishery products.

The creation of Lake Volta nearly 40 years ago in Ghana introduced the activity of mainland fisheries. At present, about 80,000 fishermen and 20,000 fish processors and traders are engaged in this type of fisheries. There are about 17,500 canoes actively fishing in Lake Volta involving about 2,000 fishing villages.

#### 2. Production.

Mainland fishing is mainly practised in rivers, streams, floodplains, reservoirs (8,480 km<sup>2</sup> Lake Volta, Ghana) and ponds in the hinterland (11) coastal States and in the major basins (3) landlocked countries (Niger, Mali and Burkina Faso). It is often the populations of migrant fishermen (for example Mali nationals) from their

countries of origin to production areas that cause many conflicts.

Production is variable from one year to another and on average is summarised as follows in some countries of West Africa:

Country	COTE d'IVOIRE	GHANA	GUINEA	NIGERIA	MALI	B.FASO
PRODUCTION in 2009 (t)	11,000	80,000	5,500	200,000	169,000	9,500

Species produced vary from one country to another. The top ten species in terms of landings in Ghana are: Tilapia (38.1%), Chrysichthys spp.(34.4%), Synodontis spp. (11.4%), Labeo spp. (3.4%), mormyrids (2.0%) and Heterotis spp. (1.5%). Other commercially important species are Clarias spp. Schilbeids, Odaxothrissa spp. and Bagrus spp

In Côte d'Ivoire the two species (*Oreochromis niloticus niloticus* and *Heteroti*) introduced in lake waters adapted well and could represent more than 70% of the catch.

However, and in general, special importance should be given to control of the introduction of species meant for aquaculture.

### 3. Fisheries trends

Production is nearly static in most countries. But this stagnation is linked to a lack of governance which naturally caused lack of reliable statistics and lack of investment in the sector.

Indeed improved tools for collecting data in Mali led to a better assessment of production, which resulted in a record growth of up to 28% between 2007 and 2009, without affecting the amount of catch available (Source DNP, 2008 and 2009 Annual Report).

Sectorial studies show that the fisheries potential is under-exploited in most countries of the region. As such, it is estimated that the production potential of Burkina Faso is 13 000 t / year, and Nigeria, about 6.46 million tonnes of fish per year under intensive management.

### 4. Fish Trade

The peculiar aspect of this trade is the near in-existence of marketing companies. This is undertaken by informal channels ranging from landlocked countries (Mali, B. Faso) to the coastal states (Togo, Benin)

Women dominate the fish trade. The fish is sold fresh or processed. Traditional methods of smoking, salting and drying are used to preserve most of the fish caught in mainland fisheries. Smoking is the most popular method of processing and, in general, about 80 per cent of the fish is consumed smoked. The type of fish determines, to a large extent, the method used to preserve it and this is determined by consumer preferences.

### 5. Institutions and management measures

#### a. Local and national level

In most countries of West Africa, the sub-sector of the mainland fishing is under the Ministry in charge of Agriculture, Livestock and / or fishing, with a slight variation in the management systems of marine and mainland fisheries, depending on their specificity.

The two approaches to management (marine fisheries and mainland fisheries) attempt to meet environmental, socio-economic and institutional requirements related to the development issues of national fisheries.



In Côte d'Ivoire, following numerous conflicts over the lakes, a pilot co-management project was initiated from 2004 to 2006, on Lake Koussou with the support of FAO. The adoption of the co-management plan of Lake Koussou was a major outcome of this project. The co-management system should extend to all the other lakes or mainland water bodies of the countries.

The co-management plan of Lake Koussou provides for the creation of the following bodies charged with responsible for its implementation:

1. The Villagers Fisheries Committee;
2. The Municipal Fisheries Committee;
3. The Fisheries Departmental Committee ;
4. The Lake Managing Authority

In anticipation, the Pilot Project proceeded with the creation of village committees in liaison with fishing agencies and the National Agency for Rural Development (ANADER), from December 2005.

### **b. Regional Management Programmes and Mechanisms**

There are several regional mechanisms and programs which have addressed mainland fishing environments in recent years. Enhanced cooperation between these mechanisms is necessary for the effectiveness of conservation and management, CIFAA/XV/2008/9.

At the Pan-African level, there is a Committee for Mainland Fisheries of Africa (CIFAA) established by FAO. The CIFAA has 36 members, including ten (10) States West Africa: Côte d'Ivoire, Gambia, Ghana, Guinea, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

As an advisory body, the main role of CIFAA is to promote and coordinate a wide range of activities including the national and regional statistics research programmes, exchange of biological and environmental statistics, activities at the national and regional levels to prevent damage to the aquatic environment, education and training.

In the West African region, very few arrangements are in place for the management of mainland fisheries. However, a basin-approach is increasingly being developed to promote cross-border management of freshwater fisheries and aquaculture for economic and social development at the level of the respective basins.

Organisations / authorities created around river / lake basins of West Africa are: Authority of the River Niger (ABN), Organisation for the Development of the Senegal River (OMVS), Organisation for the Development of the Gambia River Basin (OMVG), Commission of the Lake Chad Basin (LCBC), the Mano River Union.

These basin-based organisations have a strong legal status to ensure cross-border water management and equitable use of natural resources and ecosystem management. So they could be leveraged to boost the development of mainland fisheries at the basin-level.

## **6. Challenges in the Sector**

In the development of mainland fisheries, a number of negative factors cannot be ignored because they not only represent serious obstacles, but even worse, they can lead to the degradation of unsustainable levels of exploitation of fisheries resources and the destruction of primary production systems. Among these challenges we can mention:

- failure of governance systems of the mainland fisheries sector
- illegal fishing
- The fight against pollution of water bodies linked to the intrusion of aquatic plants and uncontrolled use of pesticides in low-tide areas.
- ecosystem degradation and loss of biodiversity,
- the impact of climate change on mainland fisheries,
- Reduction of the post-harvest losses;
- Strengthening the organisational capacity of actors mainland fisheries;
- Implementation of a management system and concerted sustainable management in mainland environment to fight against illegal fishing practices
- reduction of inter-community conflicts fishing;
- Implementation of a system to collect reliable statistics.
- The assessment of investment needs for stakeholders
- the issue of land,
- the availability of water resources

## 7. Opportunities

- Strong national and regional demand for fishery products
- Decentralization policy specifying the redistribution of management responsibilities among stakeholders.
- Existence of laboratories with appropriate technical platforms
- Development of the strategy document poverty reduction in most countries
- Existence of a network of research centres and universities
- Existence of robust stocks of certain species in many mainland water bodies of the country (Pelunella sp) several commercial species are currently untapped
- Existence of a program of national regional funding for the commercial exploitation of these stocks found in mainland waters.
- Existence of basin-based organisation for a regional approach and ecosystem-management of mainland fisheries. Annex c I SWOT Table

## 8. Transition to better results

The following interventions and activities are recommended in the short term as channels towards development of in-land fishing:

- Capacity building of government institutions and social partners to improve the governance of mainland fisheries
- Taking greater advantage of opportunities within the existing regional cooperation initiatives including the basin-based organisations
- Infrastructure development
- Integration of fisheries into development programs of land and water resources
- Rehabilitation of floodplains and associated habitats
- Infrastructure development
- Credit program for cottage mainland fishing mainland scale fishing
- Effective implementation and compliance with the principle of the FAO Code of Conduct for Responsible Fishing
- Institutionalization and development of effective conflict resolution mechanisms.
- Development of regulatory measures and guidelines for
- The introduction of exotic fish species.
- Development of effective co-management programs and strategies.

- Creation of a system of conservation of resources found in the mainland.

### **Conclusion**

In the case of capture fisheries in mainland waters, the challenge is to preserve the current benefits while identifying ways to developing the sector in the future. It is imperative to implement a process of reform in the governance of capture fisheries (particularly institutions and instruments). It is important to ensure the sustainability of the fish resource-base in a wide perspective at the level of the ecosystem. It is essential to ensure that the institutional framework provides the necessary incentives for the sustainable development of net wealth generated by the rational exploitation of fishery resources in the mainland environment. To this end, ECOWAS and the basin-based organisations have an important role to play for a harmonised approach to removal of obstacles.



## D. AQUACULTURE SUB-SECTOR

### Introduction:

Aquaculture in West Africa is almost exclusively freshwater aquaculture (or dulciculture). The region has over 5,000 km of coast but the sea water is almost not yet fully exploited for aquaculture production. Fish farming is the only type of aquaculture practised in the sub-region at the moment.

As in most African countries, the fish farming was introduced by settlers since the 50s. In almost all of these countries, it has experienced a development with mixed fortunes with boom years and years of near-extinction

### 1. Importance of the aquaculture sub-sector

Development of aquaculture in most of the African countries, including in West Africa, has especially had social goals such as improved nutrition in rural areas, generating additional income, diversification activities and income and job creation, particularly in rural communities where opportunities economic activities are limited. It is only in recent years that it has also been seen as an activity likely to meet national deficits in the supply of fish and reducing imports of fish.

### 2. Status of aquaculture production

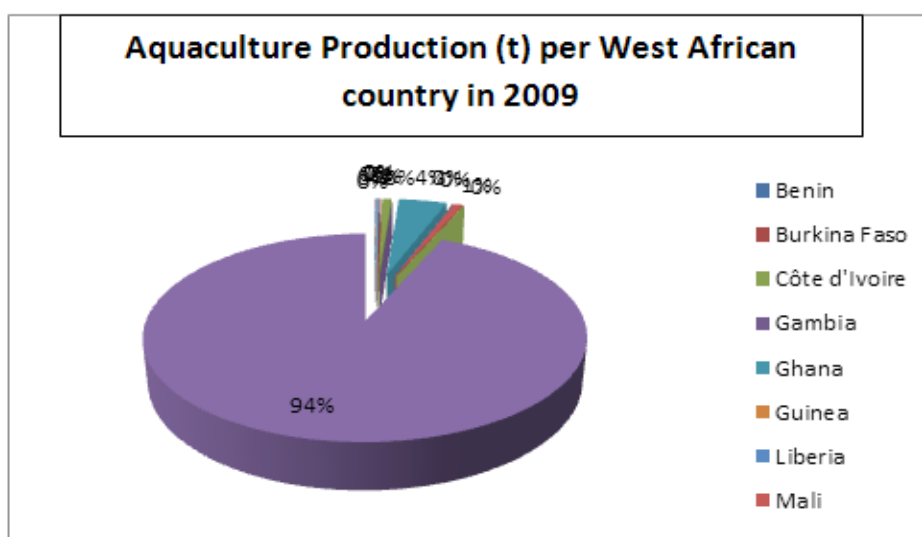
According to FAO, the total aquaculture production of fifteen (15) countries in West Africa was 163,076 tonnes in 2009. This total includes both fish, crustaceans, molluscs and other aquatic animals.

**Table 2:** Production of aquaculture countries in West Africa (2009)

Country	Benin	Burkina Faso	Côte d'Ivoire	Gambia	Ghana	Guinea	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
PRODUCT IN (t)	400	205	1340	5	7154	19	16	1355	70	152796	49	40	107

Today, the general situation of aquaculture can be described generally as being at the early developmental stages but, with varying degrees of success depending on the country

- In Nigeria, it is booming with over 150 000 t;
- It is in “renaissance” in countries such as Ghana, Côte d'Ivoire and Burkina Faso, to a certain extent;
- The situation is infancy in most countries of the region
- And almost not existent in some countries such as Cape Verde and Guinea Bissau which mainly exporters are of fish products.



According to the Network for Aquaculture in Africa, NAFA, the economic value of two (2) species produced in Nigeria, are as follows:

### **Clarias gariepinus**

Years	2003	2004	2005	2006	2007	2008	2009	2010
Quantity	4024	15758	20413	37376	37600	74462	75662	115421
Value S\$1000	12876.8	50425.6	653216	119603.2	120320	238278.4	242118.4	369347.2

### **Lates niloticus**

Years	2003	2004	2005	2006	2007	2008	2009	2010
Quantity	2013	2535	3268	4902	4931	8333	9742	10638
Value S\$1000	12876.8	6084	7843.2	11764.8	11834.4	19999.2	23380.8	25531.2

### **3. Production Trend**

The awareness on the continued decline in fisheries leads all countries to pay particular attention to in the aquaculture sector. Thus we are witnessing institutional restructuring for a more serious consideration of aquaculture (Senegal, Togo, etc...), policy development and sub-sector master plans (Burkina Faso, Côte d'Ivoire, Senegal, Ghana etc.) and the implementation of aquaculture or aquaculture-component programs and projects.

To these structural approaches, it is necessary to combine the natural potential of the region. Thus we have observed over the past decade a rapid growth of aquaculture production with private investment, marking the start of commercial aquaculture.

### **4. The legal and Institutional management framework**

#### **Governance institutions**

In most countries of West Africa, the Aquaculture sub-sector is supervised by the Ministry in charge of Agriculture, Livestock and Fisheries or the Ministry of Agriculture and Rural Development. Within these supra-structures, it is often created a Directorate or a Division that is responsible for the governance of the sector of Fisheries and Aquaculture. And the areas of intervention are not specific to aquaculture development.

In most countries of the region, policy documents set the aquaculture sector- specific objectives as follows: (i) manage sustainable and responsible fisheries resources, (ii) increase the market share of domestic production; (iii) develop in an optimal manner the existing capacity and potential, (iv) promote the development of aquaculture through various incentives: the creation of youth groups in areas with high aquaculture potential, to build ponds for farmers, training of extension staff, promote the formation of farmers' associations ; creation of hatcheries, installation of players from different linkages in the sector.

#### **Research institutions and training**

Most countries of the sub-region have no proper aquaculture training institutions. Universities and institutes of agricultural education offer courses in aquaculture but often have no real training courses in aquaculture with the exception of Nigeria. The two training centres set up a few decades ago with the support of FAO in Nigeria and Cote d'Ivoire are not fully functional. The few specialists in fish farming present on the ground at this time were often trained abroad (Europe, Asia, USA, Canada, etc.)

Research, if not embedded in the Oceanographic Research Centres, is to be found in old fishery-studies

stations. Universities and other research centres sometimes have in their programs research projects in aquaculture. Again, it is often sorely lacking in aquaculture specialists. Nevertheless, countries like Nigeria, Ghana (WRI / ARDEC) and Cote d'Ivoire still research centres specialized in aquaculture.

### **The national, regional and international framework for the sub-sector**

The sub-sector is sorely lacking in human resources in terms of quantity and quality, in the most of the states in the region. Indeed, there are very few specialists in aquaculture at different levels of specialization to undertake the roles of mentorship, research, training, and (of course) production. The lack of national and / or regional training centres is a mainly to blame for this.

At the international level, the creation of the Regional Aquaculture Network for Africa (NAFA) has overcome this gap. Currently, it brings together twelve (12) African countries including Ghana, Mali, Nigeria and Senegal in West Africa. This network is tasked with the establishment of an online system to facilitate the exchange of information related to aquaculture in sub-Saharan Africa, establish an informal, flexible and efficient network of regional experts to promote and stimulate the development of the sector in the region.

Moreover, the progressive integration of fisheries and aquaculture in the promotion of potential basins, allows for the investments and an increasingly harmonised integration of aquaculture within the basins. To this end, it should be noted that the activities of the TIVO project in the Volta Basin as well as the General Investment Programme of 2008\_2027 of the Niger Basin Authority (ABN) program among with among other things, Sustainable Management Support Project for fisheries and aquaculture in the Interior Delta of Niger.

### **Production system**

- *Production Characteristics*

Sub-regional aquaculture production is mainly characterized by three forms of aquaculture, including extensive subsistence aquaculture and semi-intensive aquaculture. However, over the past two decades, there has been a rapid development of the commercial aspect.

#### *Extensive small-scale fish farming ponds, dams and reservoirs.*

The diet is almost exclusively based on primary production (plankton) and agricultural by products. Traditional nuances of this type of fish found in some countries. These are: Acadja (Benin, Togo, Ivory Coast, etc..) And fish holes floodplain (Benin

*Semi-intensive fish culture ponds draining pens and floating cages.* Fish enjoy extra diet that is more or less rich. Intensive aquaculture commercial type begins to emerge with the entry of genuine entrepreneurs and foreign capital in the aquaculture sector in some countries (Benin, Côte d'Ivoire, Ghana and Nigeria) These industrial farms undertake aquaculture mainly in cages (Ghana), in recycled water systems (Nigeria and Côte d'Ivoire), ponds, concrete tanks, etc..

- *Exploited Species*

Aquaculture production in West Africa is mainly in fresh or brackish water. The main aquaculture species exploited are family clarias (*Clarias* sp, sp *Heterobranchu* s), cichlids (including *O. niloticus*), common carp, catfish (*Chrysichthys* sp), and Captain (*Lates niloticus*)

- *Producers*

Extensive aquaculture is the work of small rural producers who are often organized into groups or producer organisations (POs). Their technical level is often very low. They are producers with a certain technical level

and with some financial capacity to undertake the semi-intensive aquaculture. There are often private farms owned by individuals who use family work labour or hired labour.

Regarding commercial industrial production, this is conducted by major national and foreign investors. These are individuals or companies with large financial capacities for the acquisition of efficient and often sophisticated equipment for large production volumes (1000 to 10,000 tonnes or more / year). They use hand well-skilled labour, often expatriate. It is found in the following countries:

- Nigeria: a large number of commercial farms, Durante Farms Ltd, Felina Farms Ltd.
- Benin: Royal Fish (with Dutch capital)
- Ghana: Tropo Farm (belonging to a Germano-Nigerian) Crystal Lake Fish; West African Fish Ltd (with Danish capital) Triton Ghana Ltd, etc.;
- Côte d'Ivoire: HydroFish (Canadian capital) N'CARP, SAP and SOAP.

It should be noted that the social and political unrest in recent years has drawn back the development of aquaculture in some countries (Côte d'Ivoire, Sierra Leone).

- *Other actors in the sub-sector*

Other stakeholders in the aquaculture sector are input suppliers (seed and feed), equipment and technical services; processors, and fish traders. The number, quality and capacity of these actors to the level of development of the sub-sector in each of the fifteen (15) countries in West Africa. These actors are almost all present in the waters of the (2) major aquaculture countries: Nigeria and Ghana. This sector is to be built in other countries with the development of their aquaculture.

## 5. *Pressure on the sub-sector of aquaculture in West Africa*

The reasons why African aquaculture in general and that of West Africa, in particular, are struggling to develop are of several types. They are biotechnology, socio-economic and institutional (Hecht, 2006).

The main bio-technical constraints are:

- the unsuitability of the technologies made into stations adapted to farm conditions;
- very rigid technology packs;
- low quality fingerlings and supply difficulties and
- low quality, high cost and difficulty in access to food for fish.

Essential institutional constraints

- Failure or lack of political will to develop the sub-sector in many countries;
- qualitative and quantitative inadequacy of technical staff;
- inadequate "top down" the extension approach, ineffective and inefficient;
- insufficient or lack of support for research and extension
- isolation of aquaculture from agricultural production systems

At the socio-economic level, the following can be cited:

- perception of aquaculture as a marginal activity,
- taboos: some species of fish are not consumed in some regions of some countries (the case of Clarias in South Togo);
- lack of access to adequate credit;
- lack of organized networks for fishery products;
- Land issues.



## 6. Opportunities

According to FAO studies reported by Brummett et al. (2008), the capacity of African aquaculture production would be at about 1.5 billion tons annually. These studies in 1996 and 1998 show the entire Sub-Saharan Africa, and therefore West Africa, as having huge potential for aquaculture ponds (Kapetsky, 1996; Aguilar-Manjarrez et Nath, 1998). The factors taken into account in these studies by the authors are:

- availability and ease of use of water: the existence of perennial streams
- availability and ease of use of the earth structure and texture (. clayey, sandy-clay, etc.), topography (gentle slopes);
- climatic factors: good rainfall (1000mm and above), temperature (25 ° C and above), evaporation (low to medium), relative humidity, etc.;
- availability of agricultural by-products and agro-industry for food fish;
- the market: local density of population which determines the application;
- the market: local density of population which determines the application;
- Existence of ANAF

Further, significant progress should be emphasized within different states with the support for the development of their policies and laws on fisheries and aquaculture in the framework of ACP-Fish II Project by the European Union, but also as a result of regional of regional aquaculture programmes and development organisations. Annex dI: SWOT Table

## 7. Critical conditions for increased production

Priority issues below are to be considered in the development of this sub-sector:

- i. Capacity development in the entire chain of aquaculture development
- ii. Need to establish or strengthen a regional network of specialists of aquaculture policies to accelerate the development of strategies for aquaculture and their integration into broader economic strategies at national level.
- iii. Development of standards not only for regional food commodities from aquaculture, but also for production inputs and even technical assistance, monitoring tools (e.g. assessments of the impact on the environment)
- iv. Development of intra-regional trade to facilitate exchanges and partnerships with the private sector for the expansion of sustainable markets at regional and global levels, through networks of producers;
- v. Establish incentives including facilitating access to credit, input supply quality, creation of pilot farm, exemption from taxes on production equipment etc.
- vi. the controlled use of alien species in aquaculture and mainland fisheries in general

## Conclusion

The development of aquaculture in Africa proves to be a challenge despite the existing opportunities. The experiences gained provide a number of lessons. First, we must address the full range of issues (environmental, economic, social etc...) that arise if one wants to develop a sustainable aquaculture

Then, aquaculture should be considered more and more as a commercial activity, providing attractive investment opportunities to create deliverables for livelihoods and economic growth benefits. Most of the early efforts to develop African aquaculture targeted integrated subsistence farming. These family systems with low-input remain important for many rural areas but if the impact on the national supply of fish, the fight against poverty and economic growth must be meaningful, it must now develop alongside these systems profitable aquaculture companies.

### **General Conclusion**

The challenge of fisheries and aquaculture in the new millennium is to increase the sustainability of fisheries and aquaculture in a responsible manner to ensure food security and economic development for the people of the world. In West Africa, for achieving self-sufficiency in fish production, there should be a concerted effort to invest in aquaculture, concerted efforts for investing in aquaculture, which has been ignored for long in the past despite its huge potential

Similarly, this calls for the increase of capacity in primary, intermediate and terminal productivity of our natural aquatic ecosystems as a result of good planning of development and management of mainland fisheries.

Strategic vision that has so far dominated the Sectorial fisheries policy has led to a situation where most African fisheries, at least those whose economic value is highest, are now overexploited. The sector's contribution to economic development is declining. Maladjustment holds particularly in the continuing failure to recognize the fundamentally economic nature of fisheries exploitation and leverage the potential benefits of this exploitation.

Today, movement towards a new strategic vision of fisheries and aquaculture is a deep need. The potential in West Africa to achieve this already exists but given the way the institutions involved in the sector are positioned currently, it would be difficult to realise this. Indeed, they form an ill-sorted group without synergy among them, both at national and regional level.

## ANNEXES

### ANNEX 1a: Sea fishing SWOT Matrix

WEAKNESSES	STRENGTHS
<ul style="list-style-type: none"> <li>• Little success in the implementation of certain protocols, guidelines and standards;</li> <li>• The shortcomings of the Sectorial policy of national institutions;</li> <li>• The absence of a regional action plan to support the fight against IUU fishing in the SRFC area and within ECOWAS;</li> <li>• Weak enforcement of international agreements and instruments.</li> </ul> <p>Poor collaboration between ECOWAS and the Regional Fisheries Organisations</p> <ul style="list-style-type: none"> <li>• Lack of political will (low effective participation of Ministers meetings and meeting of their commitments)</li> <li>• Low ownership of recommendations by RFOs by Member States;</li> <li>• Inadequate implementation of legal instruments in regional and international fisheries management</li> </ul> <p>Strong dependence on external finance sector;</p> <p>The lack of human and financial resources as a barrier to the ability of members states to follow the rapid changes in the industry and the changes required ; ;</p>	<ul style="list-style-type: none"> <li>• Existence of Fisheries Cooperation Organisations (CSRP, CCPO, and COPACE ATLAFCO) that play a regulatory role and intervene in the management of their respective mandate resources;</li> <li>• The formulation of protocols, guidelines and standards, whose compliance and enforcement should give satisfactory results;</li> <li>• The adoption of the Declaration on Illegal, Unreported and Unregulated (CCPO, CSRP) Fishing</li> <li>• Existence of regional Action Plans to fight against IUU fishing (CCPO)</li> </ul> <p>Adoption of a document on Coherence of the Fisheries Policy of ECOWAS;</p> <ul style="list-style-type: none"> <li>• The cultural and economic importance of the sector in the economic growth of the region</li> </ul> <p>The presence of a unique ecological environment with the existence of the Canary Current to the North that promotes high biological productivity due to up-welling</p>
OPPORTUNITIES	CONSTRAINTS
<ul style="list-style-type: none"> <li>• The existence of RFOs (or ORPs in French) to fisheries management with a better anchorage at regional and international level;</li> <li>• Joint management, in monitoring and management of fish stocks envisaged by States;</li> <li>• Common and shared human interests for fisheries ;</li> <li>• Presence of other organisations such as FAO, NGOs (IUCN, WWF, etc.) the Civil Society Organisations (WADAF CAOPA) involved in fisheries</li> <li>• Opportunities for countries to have joint agreements for access to resources and partnership</li> <li>• The regional grouping: a better resolution of the problems related to fishing capacity;</li> <li>• The search for synergy with the technical and financial cooperation through regional partners;</li> <li>• The presence of relevant research institutions in fisheries;</li> <li>• The evident interest of development partners in fisheries management in the region (World Bank Fishing Project, ACP Fish II Programme FAO, etc.)</li> <li>• The existence of RFOs and ECOWAS to better support the sector at regional level ( cross-border resources, IUU fishing, migration of fishermen, exchange of scientific technical, commercial and SCS data,)</li> <li>• Domestic demand for fish products is strong</li> </ul>	<ul style="list-style-type: none"> <li>• Fishing is not a priority sector for the Member States;</li> <li>• Divergent approaches by member states in the management of fisheries;</li> <li>• The lack of communication with professionals;</li> <li>• The existence of other organisations could lead to conflicts and reduce their efficiency in the fisheries sector;</li> </ul> <p>Tendency of African organisations to focus on institutional issues at the expense of technical</p> <p>The lack of coordination and lack of clarification of the roles of different stakeholders in the field of fisheries (inconsistency partner interventions);</p> <p>The lack of capacity of fisheries officers to adapt to the rapidly changing sector (governance, new technologies, lack of equipment)</p> <ul style="list-style-type: none"> <li>• The lack of capacity of fisheries officers to adapt to the rapidly changing sector (governance, new technologies, lack of equipment)</li> </ul>

## ANNEX 1b: SWOT Matrix for mainland fisheries

STRENGTHS	WEAKNESSES
<p>Existence of large permanent coastline and river systems</p> <ul style="list-style-type: none"> <li>Favourable climatic and environmental conditions ((temperature, precipitation, evaporation, etc.) for aquaculture (many unpolluted waters )</li> <li>Existence of farmed species and possibility of domestication of native species</li> </ul> <p>Good awareness for the development of aquaculture</p> <ul style="list-style-type: none"> <li>Existence of a market to take up aquaculture production</li> </ul>	<p>Low-water availability of water in quantity and in permanence by place and / or suitable for aquaculture (quality, ease of use, etc.)</p> <ul style="list-style-type: none"> <li>Poor quality, low availability, accessibility, poor distribution of production inputs and breeding feeds.</li> <li>Land - problems : major obstacles in access to land for the development of aquaculture</li> <li>Lack of financing mechanisms adapted to aquaculture</li> <li>Water pollution by activities of agriculture, mining and domestic activities</li> <li>Lack of extension and mentorship services,</li> <li>Lack of organisations for training and research,</li> <li>lack of African aquaculture specialists</li> <li>Lack of regional organisations specialised in aquaculture</li> <li>Poor regional and international cooperation</li> </ul>
OPPORTUNITIES	CONSTRAINTS
<ul style="list-style-type: none"> <li>Strong demand for aquatic products</li> <li>Growing commitment to high levels (political will, etc.</li> <li>The growing interest of the private sector to invest in aquaculture</li> <li>Existence of Basin Organisations and the inclusion of aquaculture in their value addition</li> <li>Existence of ECOWAS (CER) possibility for exploring comparative advantages in the region</li> </ul>	<ul style="list-style-type: none"> <li>Development of aquatic animal diseases (e.g., white spots in shrimp, etc. , etc.)</li> <li>Introduction and uncontrolled movement of exotic species</li> <li>impacts of climate change on water areas (rivers, the vulnerability of dams and reservoirs)</li> <li>Obstacles to export aquaculture products and production inputs</li> <li>unfair competition (with cheaper and lower quality products ) from abroad</li> </ul>

## ANNEX 2: Ratification of international instruments management

INSTRUMENTS	ECOWAS countries														
	BN	BF	CI	CV	GB	GH	GN	GN.B	LB	ML	NI	NG	SL	SN	T
United Nations Convention on the Law of the Sea	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
UN Agreement on Fish Stocks (UNFSA)							X		X			X	X		
FAO Compliance Agreement															
Convention on Biological Diversity															
Rio Declaration Agenda 21 (Sustainable Development)															
Agreement on Port State Measures of Port State (PSMA)															
Precautionary approach															
Millennium Development Goals															

Nb: CONVENTION (FAO 2009) ON MEASURES OF STATE OF PORTVISANT TO PREVENT, DETER AND ELIMINATE PÊCHEILLICITE, UNREPORTED AND REGULATED simple signature of Benin, Sierra Leone and Ghana Agreement but these countries have not yet deposited their instruments to be parties to the Agreement.

### ANNEX 3: Regional Evaluation Terms of Reference

## FORMULATION OF A PAN-AFRICAN POLICY FRAMEWORK ON FISHERIES AND A GENERAL STRATEGY FOR FISHERIES REFORMS IN AFRICA REGIONAL EVALUATION OF PROBLEMS, CHALLENGES AND OPPORTUNITIES

### TERMS OF REFERENCE FOR THE REGIONAL EVALUATION TEAM MEMBERS

16/07/2012

#### **Preamble**

The Inter-African Bureau for Animal Resources of the African Union (AU-IBAR) is a specialized technical office of the AU Commission (AUC). AU-IBAR has the mainland mandate to manage the development and sustainable use of animal resources, including the domestic, fisheries and wildlife.

The Conference of African Ministers of Fisheries and Aquaculture (CAMFA) held in September 2010 in Banjul (Gambia), asked the African Union to establish a system of broad-based participation in policy dialogue and fisheries management at mainland level and to assist Member States to strengthen policy coherence in the national fisheries sector vis-à-vis the General Programme for Aquaculture Development in Africa (CAADP) to improve the role of fish in food security, poverty reduction and the development of trade.

In continuation of the recommendations of the CAMFA, AU-IBAR has initiated the process of formulating a Pan-African policy framework, with the overall objective of facilitating the development of national and regional policies consistent in the field fisheries in order to take full advantage of socio-economic benefits and opportunities offered by the continent's natural wealth. The formulation of the General Strategy for fisheries reforms in Africa is led by the NEPAD / NPCA.

In pursuing this initiative, AU-IBAR, in close collaboration with the NPCA and the Ministry of Animal Resources and Fisheries of the Republic of Côte d'Ivoire, organized a brainstorming meeting on the formulation of a Pan-African fisheries policy framework and strategy for reform in Abidjan from 4 to 6 June 2012. The meeting brought together stakeholders of the fisheries sector in Africa more than 25 regional and international institutions, including national fisheries management institutions, regional economic communities (RECs), FAO, regional fishery bodies, the combination of the fishing industry, processors and exporters of fish, NGOs including WWF, IUCN, PRCM, intergovernmental organisations, including COMHAFAT, INFOPECHE, etc..

One of the main outcomes of the meeting was a consensus on the roadmap for the development of the Pan-African fisheries policy framework and strategy for reform, including the establishment of regional teams for the assessment of fisheries and aquaculture, with a focus on internal and external factors, as well as human and institutional challenges and opportunities. With a view to having a well-coordinated and effective assessment, participants at the meeting agreed that the evaluation will be conducted in five regions of the continent:

- West Africa
- Central Africa
- East Africa
- Southern Africa
- North Africa

Regarding regional assessments, it was agreed that the teams will be composed of members with expertise in the field of marine fisheries and mainland fisheries, aquaculture, socio-economics, and issues of trade and markets. A timetable for completion of evaluation studies was expected to end in July 2012, immediately after the delivery of the technical report on the retreat by the facilitator of the process.

### **Terms of reference for regional assessments**

Under the general supervision of the AU-IBAR and the NPCA, regional teams will perform the following tasks:

- Review relevant documents, including strategic plans, policies, development plans, reports, including the report of the brainstorming meeting held in Abidjan, Côte d'Ivoire from 4 to 6 June 2012; departmental recommendations from meetings CAMFA 2010 as part of the mission;
- Identify the key internal and external factors (policy issues) relevant to capture fisheries and aquaculture in the region;
- Identify key challenges and opportunities of the sectors in the country;
- Analyse the current state of human and institutional capacity in the region;
- Identify the key internal and external factors (policy issues) relevant to capture fisheries and aquaculture in the country;
- Provide a complete SWOT matrix for the three sectors, namely: marine fisheries, mainland fisheries and aquaculture (marine and freshwater) in the countries.
- Evaluate in the form of a table the degree to which countries meet their international obligations through accession / acceptance of various international instruments and guidelines for good fisheries governance (the main instruments are: the UN Convention on the Law of the Sea (UNCLOS), the UN Agreement on Fish Stocks (UNFSA) FAO Compliance Agreement, The Agreement on Port State Measures (PSMA, or AMREP in French), the Convention on Biological Diversity, etc.);
- Assess / provide feedback on the degree of acceptance or ratification and use of the FAO Code of Conduct for Responsible Fisheries, and other relevant documents (Directives, international plans of action, etc..) in the region or in the country;
- Provide a brief description of capture fisheries and aquaculture in the region, with particular emphasis on the state of resources or the development, production, management practices, governance, instruments and political perspectives;
- Identify and consult with key stakeholders, assess the extent of their participation and inclusiveness in the process of fisheries management;
- Evaluate existing agreements on access to fisheries in the region or the country, with particular emphasis on equity, sustainability, transparency, etc. ;
- Prepare the assessment and submit it to the technical manager of your team report.

### **Approach**

Coordination of team activities in the region is a responsibility of RECs included in the teams. The technical work of the team will be led by the Technical Authority on the basis of terms of reference above and other guidelines which may be provided by the facilitator of the process. Members will maintain regular contact with technical managers and are supposed to consult the national associations of stakeholders in the fisheries sector and other relevant bodies to gather their views. Evaluation reports must be submitted to the technical officials who will be responsible for submitting the consolidated report to the Senior Officer in charge of fisheries AU-IBAR.

### **Duration of work**

The construction period is 5 days: from 1 to 5 August 2012.

### Qualifications and professional experience

The team will consist of members with academic qualifications in the field of fisheries or related disciplines. Candidates not having the required qualification but possessing evidence of involvement and depth in regional fisheries issues on the continent knowledge may be considered.

### Remuneration

Remuneration will be on the following basis:

- I. Payment of 100% of the amount after the submission of a satisfactory report to the technical manager of your team.

### Annex 4: List of Institutions and persons consulted resources

MEMBERS OF THE EVALUATION TEAM IN WEST AFRICA		CONTRIBUTION
Seraphin Dedi Nadjé	FCWC	X
Obinna Anozie	Nigeria	X
Samuel Quaatay	Ghana	X
Karmoba Dabo	Sierra Leone	X
SHEP Helguilè	Cote D'Ivoire	X
Moustapha THIAM	Senegal	X
<b>RESOURCE PERSONS</b>		
JOHN MOEL	FAO	X
LIONEL AVIT	FAO	X
MOUSTAPHA KEBE	FAO	-
VIVIAN IWAR	CEDEAO	X
DIENEBA BEYE	CRSP	X
JACQUES ABE	GCLME	X
KOKO GABRIEL	FISH FOR AFRICA	X
IBRAHIMA NIAMADIO	WWF_warmer	x
EL MALAGUI	INFOPECHE	-
GAOUSSOU GUEYE	CAOPA	X
CHARLES BAKUNDAKWITA	ADEPA	-
PAPA GORA N'DIAYE	REPAO	-
SORY SADIO	MALI	
HENRY ZERBO	BURKINA FASO	-
ALI HAROUNA	NIGER	X

X :Yes      - : No



African Union – Interafrican Bureau for Animal Resources  
(AU-IBAR)

Kenindia Business Park  
Museum Hill, Westlands Road  
PO Box 30786  
00100 Nairobi

Kenya

Tel: +254 (20) 3674 000

Fax: +254 (20) 3674 341 / 3674 342

Email: [ibar.office@au-ibar.org](mailto:ibar.office@au-ibar.org)

Website: [www.au-ibar.org](http://www.au-ibar.org)