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Directorate of Agriculture and Rural Development



Food and Agriculture
Organization of the
United Nations



Diagnostic on the effectiveness of national fishery and aquaculture policies and strategies for food and nutrition security in West Africa

**ECOWAS Member States
& Mauritania**

August 2020



Diagnostic on the effectiveness of national fishery and aquaculture policies and strategies to enhance decisions on resource allocation, investment and capacity building in order to contribute to food and nutrition security and poverty reduction in West Africa (ECOWAS Member States and Mauritania)

August 2020

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The policy effectiveness analysis was developed as part of a consultative process led by the ECOWAS Directorate of Agriculture and Rural Development, the FAO Representation to ECOWAS in Nigeria, and the Office of the Delegation of the European Union (EU) to ECOWAS in Nigeria.

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Under the supervision of the Commissioner in charge of the Department of Agriculture, Environment and Natural Resources of ECOWAS, the Directorate of Agriculture and Rural Development, based in Abuja (Nigeria) is one of the five (5) constituent directorates of the Department.

Mandate

In accordance with Article 25 of ECOWAS revised treaty on Agricultural Development and Food Security, the mission of the Directorate of Agriculture and Rural Development is to implement the Decision A./DEC.11/01/05 adopting ECOWAS Agricultural Policy (ECOWAP) and all decisions of ECOWAS steering, governance and decision-making bodies in the Agriculture and Food sector.

More specifically, its missions are to:

- a. Define, harmonize, adopt and monitor the implementation of policies, strategies, action plans, initiatives and regulations in agro-sylvo-pastoral and fisheries sector (ASPF);
- b. Define, harmonize and monitor the implementation of regional strategies and initiatives in Rural Development (land and agricultural infrastructure);
1. Contribute to ensure Sanitary and Phytosanitary Security, Food and Nutrition Security;
- c. Ensure regional coordination of Development and Applied Research in the ASPF sector;
- d. Ensure the regional structuring of ASPF sectors and contribute to trade negotiations in the ASPF sector;
- e. Facilitate the harmonization of ASPF Information Systems and early warning systems;
- f. Negotiate and mobilize external financial resources for the implementation of projects, programs and initiatives in the ASPF sectors;
- g. Develop and ensure regional and international cooperation with agricultural technical cooperation institutions and ASPF technical and financial partners.

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List of Acronyms

AFD	French Development Agency [Agence Française de Développement]
AfDB	African Development Bank
ATLAFCO	Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean]
CECAF	Fishery Committee for the Eastern Central Atlantic
FCWC	Fisheries Committee for the West Central Gulf of Guinea
CSRP	Commission sous-régionale des pêches [Subregional Fisheries Commission]
CFAF	Central African Franc
CVE	Cape Verdean Escudos
DARD	Directorate of Agriculture et Rural Development
ECOWAP	ECOWAS Regional Agricultural Policy
ECOWAS	Economic Community of West African States
EEZ	Exclusive economic zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIRST	Food and Nutrition Security Impact, Resilience, Sustainability and Transformation
GHG	Greenhouse gas
GHS	Ghanaian Cedi
GMD	Gambian Dalasi
GNF	Guinean Franc
IFPRI	International Food Policy Research Institute
IUU	Illegal, unreported and unregulated
IPC	Initiative Pêche Côtière [Coastal Fisheries Initiative]
JICA	Japan International Cooperation Agency
MA	Ministry of Agriculture
MAEP	Ministère de l’agriculture, de l’élevage et de la pêche [Ministry of Agriculture, Livestock and Fisheries]
MEEF	Ministère de l’environnement et des eaux et forêts [Ministry of Environment, Water and Forestry]
MEPA	Ministère de l’élevage, de la pêche et de l’aquaculture [Ministry of Livestock, Fisheries and Aquaculture]
MPA	Marine protected area
MPAEM	Ministère de la pêche, de l’aquaculture et de l’économie maritime [Ministry of Fisheries, Aquaculture and Maritime Economy]

NGN	Nigerian Naira
NGO	Non-governmental organization
PNIA/ NAIP	Plan national d'investissement agricole [National Agricultural Investment Plan]
PANPAO/ WANSFA	Plateforme régionale des acteurs non-étatiques dans le domaine de la pêche et de l'aquaculture dans les pays membres de la CEDEAO et la Mauritanie Regional [West African Non-State Actor Platform for Fisheries and Aquaculture]
PA-PSTAT	Plan stratégique pour la transformation de l'agriculture au Togo [Strategic plan for the Transformation of Agriculture in Togo]
PND	Plan national de développement [National Development Plan]
PNIASAN/ NAIFNSP	Plan national d'investissement agricole et de sécurité alimentaire et nutritionnelle [National Agricultural Investment and Food and Nutritional Security Plan]
PNSR/ NRSP	Programme national du secteur rural [National Rural Sector Programme]
PPP	Public-private partnership
PSDEPA	Plan stratégique de développement de l'élevage, de la pêche et de l'aquaculture en Côte d'Ivoire [Strategic Plan for the Development of Livestock, Fisheries and Aquaculture in Côte d'Ivoire]
MCS	Monitoring, control and surveillance
SDG	Sustainable Development Goal
TFP	Technical and financial partner
UNDP	United Nations Development Programme
USAID	U.S. Agency for International Development
USD	U.S. Dollar
WAEMU	West African Economic and Monetary Union

Context of the diagnostic study

Global trends in eradicating hunger, food insecurity and malnutrition have improved over the past two decades, although recently the pace has slackened, especially in sub-Saharan Africa. It is widely accepted that the food security and nutrition targets of Sustainable Development Goal (SDG) 2 will not be attained by 2030 under a business-as-usual scenario. There are still specific bottlenecks in a number of sectors, such as fisheries and aquaculture, that prevent them from contributing effectively and sustainably to food and nutrition security (FNS) —especially among vulnerable population groups that still do not benefit from existing national and regional policies and programmes in the sector in West Africa.¹ For example, in the fisheries and aquaculture sector, efforts were seriously insufficient during the first decade of implementation of the ECOWAP Regional Agricultural Policy (*Strategic Orientation Framework to 2025, 2016*).

To improve this situation and complement the work of ECOWAP, the Commission of the Economic Community of West African States (ECOWAS), with assistance and political support from the Food and Nutrition Security Impact, Resilience, Sustainability and Transformation (FIRST) Programme (EU-FAO Partnership Programme), has taken responsibility for development of the ECOWAS Integrated and Coordinated Regional Fishery and Aquaculture Policy and Strategy. The adoption and implementation of this should enable Member States to eliminate bottlenecks that prevent the fisheries and aquaculture sector from contributing effectively and sustainably to FNS among the different populations. The ultimate aim of this assistance from the FIRST Programme is to create and strengthen an enabling environment for the formulation and implementation of policies and strategies to improve the contribution of fisheries and aquaculture to FNS and poverty reduction among Western African populations.

Thus, on the basis of the inception report, which was adopted in February 2017 by the three main partners (EU, FAO and ECOWAS), a regional policy dialogue was launched in July 2017 involving all actors and stakeholders in the process of developing this ECOWAS regional fishery and aquaculture policy.

To consolidate the work that has already begun, a regional workshop was held in Nairobi from 14 to 16 May 2018 by the FIRST programme for the Africa region, where it was agreed to deepen the analyses by making a diagnostic assessment of the effectiveness of existing national fishery and aquaculture policies and strategies, in order to improve decisions on resource allocation, investment and capacity building to contribute to FNS and poverty reduction in Africa. The ECOWAS Commission (through its Agriculture, Environment and Water Resources Department), along with the European Union (EU) Delegation and the FAO Representation, endorsed this initiative and confirmed their keen interest in undertaking this diagnostic study, with the three partners signing the joint letter.

This analysis should make it possible to consolidate the work already under way, but also to focus more specifically on the bottlenecks that hamper the effective implementation of existing national policies in the fisheries and aquaculture sectors in the Member States, which will be considered in the future ECOWAS regional policy which is currently being developed. Success in eliminating these bottlenecks will depend on the effectiveness with which this new regional policy and strategy is implemented in West Africa —a region where local, national and subregional diversities offer both opportunities and challenges for achieving an integrated and coordinated regional approach to enhancing the contribution made by the fisheries and aquaculture sector to FNS and poverty reduction among the different populations.

¹ Including ECOWAS Member States + Mauritania.

Objective of the diagnostic

The general objective of the study is to make an in-depth analysis of the effectiveness of current national policies in the fisheries and aquaculture sector with a view to providing practical answers to the following questions:

- *What factors hinder the contribution of fisheries and aquaculture to the food and nutrition security targets of SDG 2?*
- *Are we supporting the right actions, at the right time, in the right place, which are likely to have a real impact on the right group of people or communities in the sector?*
- *What are realistic and achievable priority areas for allocating limited public and private budgetary resources to the fisheries and aquaculture sector in West Africa?*
- *What are the most effective ways to implement these actions?*

Answering these questions through this diagnostic study will enable a better understanding of the main factors underlying food insecurity, malnutrition and poverty, particularly in marine coastal and riverine communities in the ECOWAS zone, as well as the relevance, realism and adequacy of the responses provided by existing national fishery and aquaculture policies and strategies and the ECOWAS that is policy currently being developed. They will also measure the level of budgetary appropriations and available implementation capacity, and identify priority areas for intensified support and rapid impact in the contribution of the fisheries and aquaculture sector to FNS and poverty reduction among the different populations. The following five key evaluation criteria are considered: relevance, efficiency, effectiveness, impact and sustainability of national policies and strategies.

Methodology and main steps in the diagnostic

The effectiveness of national policies in the fisheries and aquaculture sector is analysed using a participatory and inclusive approach framed by a multi-stakeholder consultative process, based on interactive interviews at national and regional levels with all stakeholders. These included the national central administrations (Directorates) responsible for implementing the national fishery and aquaculture policies of ECOWAS Member States, along with non-State actors, civil society, the private sector, development partners and subregional intergovernmental fisheries organisations in West Africa.

The consultation process was complemented by a literature review and an in-depth comparative analysis of existing national fishery and aquaculture policy and strategy documents as well as National Agricultural Investment Plans for Food and Nutrition Security (PNIASAN / NAIFNSP). The diagnostic study took thorough account of the results of national consultations on the review/analysis of the contribution of national fishery and aquaculture policies and strategies to FNS among populations in West Africa, undertaken in all Member States between 2017 and 2018, within the framework of the FIRST Programme's assistance to the ECOWAS Commission.

The key operational steps of the activities in the diagnostic study are described below:

Proposal by the FIRST assistance and adoption by the stakeholders, in September 2018, of a detailed plan of the diagnostic work to be performed to assess the effectiveness of national policies in the fisheries and aquaculture sector, based on the general steering note issued by the FIRST Programme coordination team to guide the technical assistants in conducting this diagnostic exercise.

Interviews were held as far as possible over the Internet, between September and November 2018, mainly with the fisheries and aquaculture directors in ECOWAS Member States. One of the important points discussed

during these interviews was the level of involvement or consideration of concerns in the fisheries and aquaculture sector in initiatives and/or actions to support FNS in their respective countries.

Additional data and information available at the national and regional levels was gathered by reviewing the sparse studies on the links between the fisheries and aquaculture sector and FNS. One of the major difficulties encountered during the diagnosis was the lack of relevant data and/or information on the contribution of fisheries and aquaculture to FNS in West Africa, compared to that of other food products (cereals, tubers, milk, meat, etc.).

Organization of the regional workshop to validate the first version of the draft diagnostic report on the effectiveness of the national fishery and aquaculture policies of ECOWAS Member States and Mauritania, held in Conakry, Republic of Guinea, from 24 to 25 January 2019. This workshop provided an opportunity to submit and receive proposals for corrections, suggestions and amendments prior to validation of the report by the fisheries and aquaculture directors of Member States along with other stakeholders (non-State actors and subregional fisheries organizations).

General presentation of West Africa

The West African region is bordered by the Atlantic Ocean, with a coastline stretching from Senegal to Nigeria. It includes nine French-speaking countries (Bénin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger, Senegal and Togo), five English-speaking countries (Nigeria, Ghana, Liberia, Sierra Leone and The Gambia) and two Portuguese-speaking countries (Cape Verde and Guinea-Bissau). This part of Africa is divided into two major climatic zones: (i) the southern equatorial zone, which has a hot and humid climate, abundant rainfall and forests; and (ii) the northern Sahelian region, with savannah, steppe and desert zones. Burkina Faso, Mali and Niger have no access to the Atlantic Ocean.

With a very long maritime coastline of 67,069 kilometres and an Exclusive Economic Zone (EEZ) totalling more than 2 million km², the coastal countries of West Africa (comprising ECOWAS members and Mauritania) benefit from two large marine ecosystems which are among the most productive fisheries in the world: the Canary Current Large Marine Ecosystem and the Guinea Current Large Marine Ecosystem.

Moreover, due to its tropical climate and particularly favourable natural conditions, including a very dense hydrographic network (rivers, estuaries, lagoons and other water bodies), West Africa has huge untapped potential for developing continental and marine aquaculture and for ensuring substantial fish production to enhance the FNS of its different populations.

In 2018, the total population of West Africa was estimated at 382.2 million people (<https://www.unfpa.org/data/world-population-dashboard>) having grown by an average of 2.6 percent per year since 2010. By 2030, its total population is expected to reach a level of 518,442,000.

1. Context – Food insecurity, malnutrition and poverty

What are the trends, geographical and socio-economic patterns, and prospects for eradicating food insecurity, malnutrition and poverty in the country? Key drivers of food insecurity, malnutrition and poverty.

1.1. Food and nutrition security situation in West Africa

1.1.1. GENERAL FOOD AND NUTRITION SECURITY TREND IN THE ECOWAS ZONE AND MAURITANIA

Although ECOWAS has made considerable efforts in boosting agricultural production to reduce hunger in the region, output remains insufficient to meet the growing demand for food and nutrition generated by West Africa's still uncontrolled population growth. For example, no ECOWAS member State is yet among the top 50 countries in the world where the hunger index is considered low and/or under control (*see table 1*). Food and nutrition insecurity thus continues to be a concern in the region, as undernourishment is still above the global average (11 percent) in many ECOWAS member States; the average prevalence of undernourishment in West Africa, including Mauritania and Chad, is that of 14.4 percent (<http://www.fao.org/publications/sofi/en/>).

Nearly 40 percent of children under five years of age are affected by stunting and 12 percent suffer from acute malnutrition (these rates are reportedly higher in rural Sahelian areas). Moreover, in this subregion of West Africa, the obesity prevalence rates in 2014 were 5 percent among men and 15 percent among women (adults) (IFPRI, 2015 cited in FAO, 2017). In nearly all countries in the subregion, the prevalence of obesity increased between 2014 and 2017, leading to elevated risks of diabetes, heart disease and hypertension among men and women alike. Micronutrient deficiencies also remain high in the region, with over 30 percent of the population lacking essential vitamins and minerals in their daily diet, in varying degrees across countries. Lastly, the growth retardation observed in the ECOWAS zone varies considerably from one member country to another: for example, 19 percent in Ghana, compared to 43.6 percent in Nigeria (*see table 1*).



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Table 1: Selected elements of the nutritional situation related to the feeding of populations in West Africa

Country	Growth retardation (%) ²	Stunting (%) ³	Micronutrient deficiencies (%) ⁴	Overweight/obesity (%) ⁵	Food-related non-communicable diseases (man/woman) (%) ⁶	Prevalence of malnutrition among women (%) ⁷	Rank in the Global Hunger Index ⁸
Bénin	34	5	47	2	AH*: 30/30; Db*: 5/5	24	080
Burkina Faso	27	8	50	1	AH: 32/35; Db: 6/4	22	089
Cape Verde	21.4	-	33	-	AH: 30/30; Db: 7/7	27.5	-
Ivory Coast	21.6	1.2	53	1.5	AH: 30/30; Db: 6/5	25	085
The Gambia	24.6	4.3	58	3.2	AH: 30/30; Db: 8/8	25	075
Ghana	19	5	46	2.6	AH: 25/25; Db: 5/5	25	062
Guinea	31	10	51	4.0	AH: 30/30; Db: 5/5	23	092
Guinea-Bissau	27.6	1.4	44	2.3	AH: 30/30; Db: 6/6	24	093
Liberia	32	6	35	3.2	AH: 30/30; Db: 6/6	25	108
Mali	30	14	51	1.9	AH: 35/35; Db: 7/5	23	090
Mauritania	27.9	3.5	37	1.3	AH: 35/30; Db: 6/8	25	088
Niger	42	10	49	1.1	AH: 32/35; Db: 5/5	22	099
Nigeria	43.6	2.9	50	1.5	AH: 24/25; Db: 5/5	24	103
Senegal	16.5	1.5	50	0.9	AH: 30/30; Db: 7/7	24	066
Sierra Leone	37.8	4.4	48	8.8	AH: 30/30; Db: 6/6	23	114
Togo	27.6	1.5	49	2.0	AH: 30/30; Db: 5/7	24	080

*AH: Arterial hypertension; Db: Diabetes.

An analysis of the results obtained from the “Harmonized Framework”, a mechanism for monitoring the status of food and nutrition insecurity, reveals the following trends in West Africa, both current (March-May 2018) and projected (June-August 2018)

- **Availability:** Given the overall healthy level of agricultural production in the region and well-functioning markets, food availability remains satisfactory in the current situation, which augurs well for overall positive effects on current food security, even if the effects are generally small. However, in some areas of Mali, Senegal, Burkina Faso and nearly all of Mauritania and Cape Verde, food availability is considered average-to-low, owing to a sharp reduction in agricultural production and the poor grazing conditions currently prevailing. In other countries, however —especially coastal ones— food availability is expected to remain satisfactory and even to improve, thanks to favourable rainfall conditions forecast at the start of the season.
- **Accessibility:** The region’s poor and very poor households generally face very difficult conditions in accessing basic food commodities, owing to persistently high cereal prices in all countries (10-20 percent above average levels), which hinder household food security, except in Cape Verde, where

² Percentage of children under five years of age displaying moderate or severe stunting (2014)
Source: <http://countdown2030.org/> and <https://www.who.int/nutgrowthdb/estimates2017/en/>

³ Percentage of children under five years of age displaying moderate or severe wasting (2014)
Source: <http://countdown2030.org/> and <https://www.who.int/nutgrowthdb/estimates2017/en/>

⁴ Indicated by the prevalence of anaemia among women of reproductive age (15-49 years) (2016)
Source: <http://countdown2030.org/> and <https://www.who.int/nutgrowthdb/estimates2017/en/>

⁵ Overweight refers to a human body that is too heavy for its height.
Source: <https://www.who.int/nutgrowthdb/estimates2017/en/> and <http://countdown2030.org/>

⁶ Indicated by prevalence of hypertension (HA) and diabetes (Db) (2016)
Source: <http://ncdrisc.org/data-visualisations.html>

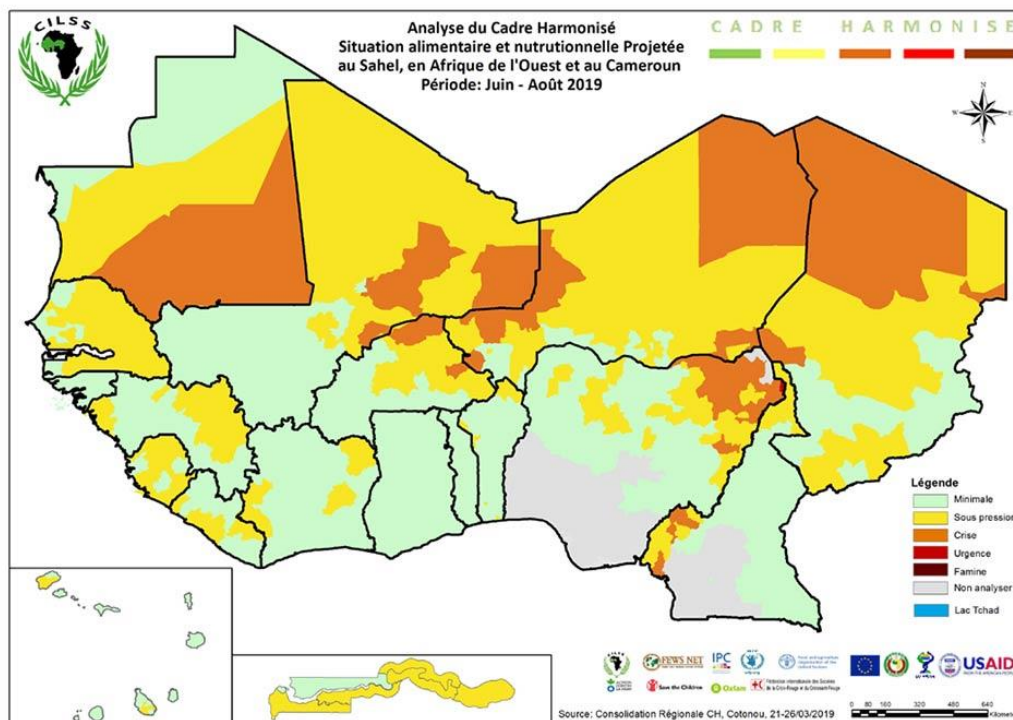
⁷ The prevalence of malnutrition among women is indicated by the percentage of women with a body mass index of 25 - 30 kg/m² (overweight) (2016). Source: <http://countdown2030.org/>

⁸ Source: <https://www.globalhungerindex.org/results/> (2018 Global Hunger Index)

prices are relatively stable. However, the relative stability of imported grain prices and the mitigation measures adopted in the various response plans could help reduce adverse impacts.

- **Utilization:** The persistence of malnutrition is blamed on the following structural and cyclical factors: (i) food deficits that compromise food consumption (meal composition, diversity and food preferences) and livelihoods; (ii) the persistence of armed conflict and residual insecurity that restrict access to basic social services (health, education, etc.); and (iii) poor feeding habits and inappropriate childcare practices. Lack of access to safe drinking water is also an aggravating factor for malnutrition, which is a real scourge in the Sahel, where the expansion of drinking water coverage is being outpaced by population growth.
- **Stability:** Household and trader stock levels are generally low compared to previous years in the same period, posing a food security risk mainly in the poorest households. Several areas continue to be affected by civil insecurity with many restrictions that hamper the normal conduct of agricultural activities and calendars, particularly in the Liptako Gourma area, and in the central and northern areas of Mali.

Figure 1: Regional analysis of the overall food and nutrition insecurity situation June-August 2019
(Source: Harmonized Framework, 2019).



Nearly half of the West African population remains poor, living on less than USD 1.90 per day in 2013 (AfDB, 2018). As most households—including rural ones— buy their food in markets, access to quality food remains closely linked to their purchasing power and to economic, socio-political and climatic shocks (poverty and vulnerability).

1.1.2. THE ROLE OF FISH IN FOOD AND NUTRITION SECURITY IN WEST AFRICA⁹

An estimated one in three people in West Africa eat fish on a daily basis, as this (especially small pelagic fish species) is still the only animal protein that is available and accessible to more than 60 percent of households. Considered one of the main sources of animal protein, minerals (iodine, zinc, calcium, phosphorus and iron) and vitamins (D, A and B), fish is particularly important for millions of pregnant women, infants and children (aged 2-5 years), and the elderly. The lipids in fish that are rich in long-chain polyunsaturated fatty acids are beneficial for adult nutritional health and child development.

In most ECOWAS coastal States, fish provide up to 40 percent of the animal protein needed for healthy growth. In some very isolated coastal fishing communities in Guinea, Sierra Leone, Ghana and The Gambia, more than 70 percent of the nutritional requirements for animal protein are estimated to come from fish.

Availability of fish

In 2016 fishery production (fishing and aquaculture combined) in West Africa (ECOWAS and Mauritania) was estimated at over 3 million tons per year, albeit varying very widely between countries (*see table 2*).

Table 2: Fish production (captured and farmed) in 2016 by ECOWAS Member States and Mauritania*

Country	Capture (Tons)	Aquaculture (Tons)	Total (Tons)
Bénin	49 806	3 080	52 886
Burkina Faso	22 070	470	22 540
Cape Verde	19 900	-	19 900
Ivory Coast	67 500	4 769	72 269
The Gambia	58 261	35	58 296
Ghana	324 728	52 220	376 948
Guinea	128 000	250	128 250
Guinea Bissau	6 700	-	6 700
Liberia	14 700	40	14 740
Mali	102 486	4 194	106 680
Mauritania*	609 754	-	609 754
Niger	34 592	300	34 892
Nigeria	739 124	306 727	1 045 851
Senegal	474 169	2 079	476 248
Sierra Leone	194 470	75	194 545
Togo	31 891	98	31 989
Total	2 878 151	374 337	3 252 488

Source: FAO. 2018. *Fishery and Aquaculture Statistics* (FishstatJ).

Total fish production in countries such as Burkina Faso, Cape Verde, Guinea Bissau, Liberia, Niger and Togo is less than 50,000 tons, while that of other Member States can well exceed 100,000 tons and rises to 376,000 tons in Ghana, 476,000 tons in Senegal and up to 1 million tons in Nigeria (*see table 2*).

⁹ The term “fish”, as used here, includes all aquatic animals (including crustaceans and cephalopods) consumed by humans.

The fisheries and aquaculture sector is also estimated to provide between 7 million and 8 million direct and indirect jobs for fisherfolk, fish processors, and fish wholesalers and traders in the region, thus playing an important role in the population's socioeconomic, food and nutritional life.

Owing to a lack of reliable data, it is difficult to assess the dietary intake of fish among the region's populations. The meagre information available is obtained from policy and strategic planning documents for the development of fisheries and aquaculture in the Member States. The different estimates would suggest an annual average fish consumption of 14 kg per capita across the region, but with wide disparities between countries (see table 3). This annual average level of fish consumption also conceals glaring inequalities within countries, especially in coastal States where the amount of fish consumed per year in coastal towns is two to three times greater than in inland towns more than 300 km from the coast.

Annual average fish consumption throughout West Africa is 14 kg per capita, compared to a global per capita average of 20 kg. This means that West African countries as a whole remain in deficit, because the amount of fish available is still often less than the real demand generated by their ever-growing populations.

Table 3: Annual average fish consumption per capita in West Africa (ECOWAS countries and Mauritania)

Country	Fish consumption (Kg/inhab/yr)
Bénin	12.0
Burkina Faso	3.0
Ivory Coast	15.5
Cape Verde	25.0
The Gambia	23.3
Ghana	25.0
Guinea	13.6
Guinea Bissau	18.0
Liberia	5.0
Mali	6.8
Mauritania*	6.0
Niger	2.1
Nigeria	11.2
Senegal	29.0
Sierra Leone	13.3
Togo	15.6

Source: Sidibé A., *Inception Report – Assistance FIRST to ECOWAS (2017)*

Thus, the contribution to FNS made by the fisheries and aquaculture sector is globally inadequate, relative to the demand for animal proteins, micronutrients and other vitamins necessary for the nutritional health of populations in West Africa.

Access to fish

Owing to a lack of regular monitoring, it is very difficult to discern a trend in access to fish among West African populations. However, access to fish and other fishery and aquaculture products varies greatly from one country to another. Small coastal pelagic species, including sardinella, bonga shad and horse mackerel, are the most widely accessible fish for 40-50 percent of populations in the ECOWAS zone, owing to their abundance and low price (less than US\$1 per kilogram).

Even if these sea fish remain the main source of supply for the region's populations, volumes are still insufficient on national markets where demand outstrips supply. In rural markets located in landlocked areas

far from the coast, the shortfall is even greater and prices are three to five times higher. Large quantities of these fish (both fresh and smoked) generally arrive in poor condition in these internally landlocked areas, owing to breaks in the cold chain that cause the products to deteriorate and thus degrade their food and nutritional values. The other “noble” demersal species (sea bream, bluefish, shrimp, cuttlefish, etc.), are accessible to only 10 to 20 percent of the population in West Africa because of their very high prices. More than 70 percent of the production of these species is exported to markets outside the ECOWAS zone, in European Union countries, the United States, Japan and China.

Lastly, factors limiting access to fish among West African populations include the following: (i) the low level of supply relative to demand; (ii) the high cost of fish relative to household income; and (iii) difficulties in accessing production and trading areas. Of all these factors, purchasing power remains by far the most important, as food and nutrition insecurity mainly affects the poorest households.

Use of fish

In West Africa, fish is used mainly and directly for human food consumption, usually consumed either fresh or smoked-dried. The type of consumption varies from one country to another and also according to the population’s social status and urban or rural residence. Between 60 and 70 percent of the fish produced in West Africa is consumed by urban, periurban and coastal populations, with just 25 to 30 percent consumed by rural populations living in areas far from the marine or river coasts that are the main production areas. Fresh products are consumed largely in urban areas, prepared mainly in the form of braised fish or soup by wealthy or “middle-class” people. They are also eaten fried in both urban and rural areas among population groups of low or medium purchasing power. The smoked-dried product is the preserve of poorer populations in rural areas, using mainly catfish, sardinella and bonga shad.

In addition, large quantities of fishmeal are manufactured from small pelagic fish (mainly sardinella) in some ECOWAS countries (Senegal, Mauritania, The Gambia) and are used in the composition of feed for farm animals. This could very seriously undermine the availability of this species which is considered a widely accessible source of animal protein for most of the population in West Africa.

Stability of fish supply

The availability and accessibility of fishery products in West Africa vary by season, owing partly to natural phenomena, such as climate. Thus, pelagic species, such as sardines, are mostly available in the cold season and become scarce in the warm part of the year. It is also noted that the expected increases in temperature, precipitation, humidity and flooding in the tropics related to climate change could increase catch and post-harvest losses (Barange and others, 2018). This could cause instability in the availability and accessibility of fishery products in most coastal countries that rely heavily on fish for animal protein.

The availability and accessibility of fish also remains highly dependent on certain sociopolitical and cultural events. For example, during certain religious festivals (Tabaski or sheep feast and/or Ramadan) in some countries (Senegal, Guinea, Mauritania), fisherfolk who work in artisanal fishing activities return *en masse* to their places of origin to celebrate these holidays with their families. During these periods, fish are scarce in number and their prices rise sharply, posing a real problem in terms of both availability and accessibility. Every year during the closed season (the months of June/May and October/November), fish availability and access decline sharply in some remote and isolated areas, especially in towns in landlocked countries.

1.1.3. POVERTY AND VULNERABILITY IN THE FISHERY AND AQUACULTURE SECTOR

- **Poverty and vulnerability among artisanal fishing communities in West Africa:**

The multidimensional nature of poverty in the fishery and aquaculture sector, especially in artisanal fishing communities, is widely recognized and accepted, but very hard to assess or measure. The communities in question often suffer from unstable living conditions and inadequate basic social services, and have low levels of education. These communities are isolated, with very little organization and are frequently exposed and highly vulnerable to accidents and natural disasters that cause the destruction of assets. Poverty in these West African communities, which are entirely dependent on fishing, is therefore not only directly linked to the status of the fish resource and the size of catches, it is also linked to the weak socioeconomic, political and institutional development that characterizes the rural environment in which these communities live. Despite the existence of national poverty reduction policies in most ECOWAS countries, it is not always possible to assess their impact on poverty reduction, in rural areas generally and in fishing communities in particular, because available indicators and information are lacking. However, in West Africa the overall poverty rate is still high, with an estimated 43 percent of the population living below the US\$1.90 a day poverty threshold in 2013 (AfDB, 2018), and over 55 percent in rural marine and riverine coastal communities. As most of these households purchase their food in markets, access to varied and quality food will therefore be closely linked to their purchasing power and the reduction of economic, sociopolitical and climatic shocks.

In West Africa, artisanal fishing communities (both marine and inland) are exposed to very high levels of vulnerability which are closely linked to their professional activities and the associated types of livelihood. Moreover, fishing is an inherently unpredictable activity, with yields that depend specifically on the availability and “catchability” of fishery resources, which fluctuate daily, monthly and annually, thus making income from fishing activity unpredictable. The uncertainty inherent in fishing activity is also, to some degree, transferred to other activities in the value chain (product processing and sale) thus affecting other members of the communities concerned. Other factors that are intrinsic to the sector itself and aggravate the vulnerability of actors in the artisanal fisheries value chain include the following: (i) natural disasters (flooding, silting of rivers); (ii) macroeconomic trends (fluctuating fuel and fish prices); (iii) lack of organization and weak human and institutional capacities of the communities and their political, economic and social marginalization; and (iv) conflicts with other users of coastal and marine areas (industrial fishing, tourism) owing to increased competition for the same natural resources.

- **Gender in the fisheries and aquaculture sector and its relation to FNS:**

Owing to their participation in fishing and aquaculture activities, women are key players in the sector in West Africa. In fact, 80 percent of fish and other fishery products are sold by women, who thus provide between 60 percent and 70 percent of the animal protein consumed by the populations of coastal states. Throughout the fisheries value chain, women are responsible for post-harvest activities such as fish trading, processing, transport, distribution and retailing in the West African region. However, the tasks they perform are poorly paid; and their contributions to food security, the economy and employment are far less recognized. They do not enjoy equal access to natural resources; and they often lack basic infrastructure and services such as electricity, drinking water, education, health and balanced nutrition. Frequently they have no social security and sometimes it is impossible for them to obtain land rights owing to sociocultural obstacles. More importantly, these women do not have fair access to the financial resources and competitive markets that could support their activities in their daily struggle to improve their lives and those of their families.

Despite all the difficult conditions described above, women continue to play a decisive role in household food security, food diversification and the nutritional health of children. In nearly all West African countries, women

prepare most of the meals consumed in the household, hence their central role in ensuring a healthy and balanced diet for family members, especially in families living in coastal communities.

1.1.4. MAIN OBSTACLES TO THE FISHERIES AND AQUACULTURE SECTOR CONTRIBUTION TO FNS IN WEST AFRICA

The main factors likely to prevent the fisheries and aquaculture sector from contributing effectively and sustainably to FNS include the following:

- A failure to recognize fish as an essential element in national FNS policies and strategies developed in the ECOWAS zone, compounded by the lack of clear food and nutritional objectives and concerns in national fishery and aquaculture policies.
- The lack of an integrated information system for monitoring the performance of the fisheries and aquaculture sector, to support relevant policy and strategic decision-making at the national and regional levels.
- Weak participatory governance of the fisheries and aquaculture sector, characterized by a lack of transparency in the management of fishery resources, in particular in the allocation of fishing permits and authorizations, resulting in chronic overexploitation of fish stocks which makes fish less available and accessible for local populations.
- Persistent illegal, unregulated and unreported (IUU) fishing activities of all kinds in West African waters. IUU fishing accounts for between one third and a half of total regional catches, and West Africa loses USD 1.3 billion a year as a result (Africa Progress Panel, 2014). This huge loss caused by IUU fishing generates a significant shortfall in the availability and accessibility of fish for populations in the subregion and thus undermines their FNS.
- The significant post-harvest losses among fishery products (more than 30 percent of total catches), compounded by inadequate processing, transport and storage infrastructure, result in a deficit in the availability of fish in the quality and quantity needed to meet the food and nutritional requirements of the populations of the West African region.
- The low development of intra-regional trade in fishery and aquaculture products due to factors such as the lack of transport infrastructure. Despite unfettered movement of goods and persons within the ECOWAS zone, constraints such as the harassment of customs and police services in some Member States hamper distribution and reduce the accessibility of highly perishable fishery products, thus making it impossible to satisfy the food and nutritional needs (animal proteins and vitamins) of the majority of periurban and rural populations.
- Failure to comply with the health and quality standards of fishery products undermines assurance of the safety of these foods and the nutritional benefits provided by fishery products.
- The low level of development of commercial aquaculture, which could contribute significantly to FNS in the region if certain problems could be resolved. These include quality constraints, the high cost of fish feed and difficulties accessing it, the lack of sufficient and qualified technical staff, the low access to credit for fish farmers, the poor organization of the sector and the lack of political will in some countries to develop the aquaculture sector. Thus, apart from Nigeria and Ghana, production in other ECOWAS member States is still far below requirements (see table 1).
- The degradation of ecosystems and the loss of biodiversity (coastal/marine and inland environments) due to the unregulated fishing practices and methods applied by some fisherfolk, and to anthropogenic actions in upstream water bodies/rivers (catchment basin) which cause silting and/or pollution of basins.
- The rapid and uncontrolled growth of the population and the stagnation of fishery production could further reduce the availability of fish to meet the basic needs of the West African population by 2030.

- Lack of a coordinated and integrated ECOWAS regional fishery and aquaculture policy and/or strategy to underpin and support the sector's contribution to FNS and poverty reduction, mainly among rural communities living in coastal marine, river and water catchment areas in Member States.

1.1.5. MAIN ACTORS OF THE ARTISANAL FISHERY AND AQUACULTURE SECTOR IN WEST AFRICA

In each ECOWAS member country (+ Mauritania), the main actors involved directly or indirectly in the development of the fisheries and aquaculture sector are as follows:

- The public sector: consisting of government actors, in particular the ministries in charge of fisheries and aquaculture with their respective executive agencies; national institutions in charge of fisheries, aquaculture and oceanic research; and the ministries responsible for food safety, the environment, the economy, trade, the national navy and maritime affairs (surveillance of maritime waters, control of IUU fishing).
 - The private sector: comprising professionals in the fisheries and aquaculture sector with their respective organisations, and NGOs/civil society.
 - Technical and financial partners (TFPs) supporting development projects and programmes in the fisheries and aquaculture sector, such as the World Bank, the European Union, FAO, UNDP, USAID, JICA, AFD, etc.
- The Ministry responsible for fisheries and aquaculture

This Ministry is generally responsible for creating favourable conditions nationally for the sector's development. Its key mission, along with the other actors in the sector, is to design national policies and strategies for fisheries and aquaculture development, and ensure their coordination, implementation and monitoring-evaluation. It is also responsible for implementing effective management and development activities in a variety of complex areas, such as sea fishing, inland fishing and aquaculture, with a view to enhancing, protecting and preserving fishery resources, improving the socioeconomic living conditions of the populations in question (fisherfolk, fish farmers and women working throughout the sector) and ensuring the availability and accessibility of fish stocks. It is important to note the existence of decentralized fishery and aquaculture administrations at the municipal level, which are responsible for implementing ministerial policies and strategies locally. These entities make sure that current laws and regulations are monitored, controlled and enforced; and they can play a key role in following up actions in the field.

- Other public ministries (environment, economy, trade, maritime affairs, food safety, etc.)

These ministries are involved in the development of fisheries and aquaculture at the national level, because activities throughout the sector have aspects that cut across the respective mandates of the ministries in question. These ministries contribute not only to the development of national policies and strategies that may have links with the sustainable development of the fisheries and aquaculture sector, but also to the implementation of actions aimed at improving the contribution of fish to FNS among the different populations. For example, the Ministries of Health and Education play an important role in sensitizing households to the importance of fish in the diet and nutrition of children and pregnant women. In this way, they can serve as important allies for the Ministry/Fisheries Directorate in the field. Nonetheless, the Ministry responsible for fisheries and aquaculture remains primarily responsible for decision-making aimed at the sustainable and coordinated development of the sector.

- The professional actors in the sector and their organisations

Owing to the lack of reliable data, it is very difficult to ascertain the number of direct and indirect jobs in the sector in West Africa; but it is estimated that between 6 million and 7 million people participate in the artisanal fisheries and aquaculture (capture fishing, fish farming, fish trading, processing, transport, sale of products and associated or related jobs).

All fishing and aquaculture activities in West Africa are shared between men and women. Men are mainly involved in capture (fishing) or raising fish (fish farming), while women work in post-harvest activities such as fish trading, processing, transport, distribution and retail sale of fish (fishing and aquaculture). However, some women also participate in capture fisheries in continental waters (such as in Nigeria), in trapping crabs in lagoons and estuaries and in collecting mangrove oysters and catfish (Nigeria, Bénin, Togo, Guinea-Bissau, Senegal) for domestic consumption or small-scale commerce.

The predominance of women in post-harvest (and sometimes capture) activities —such as retail sale of micro-fish, fish processing, distribution and marketing— means that they play a key role in the socioeconomic development of the sector in West Africa.

In most ECOWAS countries, these sector actors are organized in national fishing or aquaculture associations and groups, women fish processors and fish vendors, although most of these organisations operate somewhat ineffectively and often unsustainably. In general, the sector as a whole suffers from the weak organization of non-State actors, considering all categories together. This diminishes their capacity to negotiate or set up a sustainable financing system, and also reduces their ability to effectively implement strategies to develop the region's fishery and aquaculture potential. Moreover, this organizational weakness prevents them from participating effectively and making their voice heard sufficiently in decision-making processes concerning the management of the fisheries and aquaculture sector at national level.

At the regional level, a West African Non-State Actor Platform for Fisheries and Aquaculture (PANEPAO / WANSFA) in ECOWAS Member countries and Mauritania was created under the aegis of ECOWAS and with support from the FIRST Programme (FAO-EU). This Platform provides a forum for dialogue, coordination and exchange of experiences between non-State actors, with the aim of contributing, in collaboration with policy makers and other stakeholders, to the development and implementation of policies and rules for the sustainable management of the fisheries and aquaculture sector in ECOWAS countries and Mauritania. At this stage, however, the PANEPAO still needs support, particularly from ECOWAS, as well as capacity building (organizational, managerial, etc.) to enable it to serve as an effective and credible interlocutor with its partners in the region (TFPs, regional economic commissions, regional fishery organizations, etc.) in the framework of the sustainable development of fisheries and aquaculture in West Africa.

- Non-governmental organizations (NGOs)/civil society:

In ECOWAS countries (+ Mauritania), NGOs and civil society play their role, particularly by providing training, extension and support-advice to professional actors in the fisheries and aquaculture sector. They also have a role as service providers or grassroots development operators, which may include an advocacy function and “citizen oversight” of government and private-sector action.

- Technical and financial partners (TFPs):

Technical and financial partners (World Bank, FAO, UNDP, EU, AFD, JICA, USAID, etc.) are involved in the sustainable development of the fisheries and aquaculture sector in West Africa at the national and/or regional levels. These institutions often help the region's countries to prepare or revise policy and strategy documents

for fisheries and aquaculture development, and they finance development projects for the sector. The lack of coordination and synergy between TFP interventions at both the national and the regional levels makes it harder to achieve the results expected from these interventions in the fisheries and aquaculture sector.

At the regional level, other actors such as the regional economic integration organizations (that is, ECOWAS and the West African Economic and Monetary Union – WAEMU) have the role of creating an enabling environment for the formulation and implementation of regional fishery and aquaculture development policies and strategies, as well as setting a framework for regional coordination by providing support to the member countries of these organizations in implementing national policies and strategies. In addition, regional fishery organizations such as the Subregional Fisheries Commission (CSRP), the Fisheries Committee for the West Central Gulf of Guinea (CPCO / FCWC) the Western Central Atlantic Fishery Committee (COPACE / WECAFC) and the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean (COMHAFAT / ATLAFCO), which are present and/or active in West Africa, are responsible for strengthening regional cooperation and collaboration in the fisheries and aquaculture sector, through sectoral development projects and programmes.

1.1.6. CONTRIBUTION OF FISHERIES AND AQUACULTURE TO THE ACHIEVEMENT OF SDG 2 IN WEST AFRICA

The maintenance of sustainable fisheries and aquaculture in a healthy aquatic environment is a necessary precondition for sustainably ensuring the sector's contribution to food security and improving nutrition in coastal marine, river and water basin areas. However, most fish stocks in West Africa are already being fished beyond their sustainable biological and economic limits. Reducing the capture of wild fish stocks to sustainable levels will improve total production and provide a reliable long-term food source for people. This involves controlling the fishing effort not only of the national fleet but also that of foreign vessels, since the latter's activities have a major impact on the status of fish stocks in the West African region. Technology transfer and capacity building in aquaculture and selective fisheries can help improve production and income generation for the communities concerned.

In addition, the establishment of marine protected areas (MPAs) can also provide benefits to fisheries and ease pressure on key fishing areas, such as spawning and nursery grounds, and allow fish stocks in adjacent areas to recover. However MPAs can also become a challenge. It is important to stress that MPAs are one of the fishery management measures being developed in West Africa and should be implemented and managed with full participation from users, particularly small-scale artisanal producers, to ensure compliance with the regulations in force in the sector and avoid conflicts.

Adopting and recognizing a community-rights-based management system through the fisheries co-management approach also provides a basis of legitimacy that can protect the access rights of artisanal fisherfolk in many artisanal fisheries, more than 90 percent of the production of which is used for local consumption, unlike industrial fisheries in West Africa. By limiting access to resources to a clearly identified group, community property rights also reduce the risks of overfishing, thus preventing fisherfolk from slipping into the downward spiral of poverty and overexploitation associated with open-access regimes. At the same time, the fact that these property rights are granted to groups rather than individuals can ensure a certain level of equity within the community, by allowing all members (including the poorest) access to fishing areas and enabling them to base their livelihoods on fishing. These issues need to be considered as priorities by governments and development partners for the sustainability of the sector's contribution to the achievement of SDGs 1, 2 and 14.

The review of national fishery and aquaculture policies in most ECOWAS Member States revealed a persistent lack of relevant information on the geographical and socioeconomic profiles of populations affected by undernourishment and malnutrition, especially in periurban and rural coastal areas and around rivers and watersheds, and on the role that fishery products play in FNS. This situation diminishes prospects for actions to be developed to strengthen the contribution of the fisheries and aquaculture sector in the fight against food insecurity, malnutrition and chronic poverty of the populations in West Africa.

As highlighted in Policy Brief No. 1 (EU-FAO, 2017), West Africa has an urgent need for the collection and review of in-depth data and information to establish an evidence base for policy makers and other stakeholders on the role of fish in attaining SDG 2 at the national and regional levels. Indicators that suggest fish could play an important role in nutrition and which encourage collaboration and coordination between nutrition and fishery policies to avoid conflicts and enhance synergies include the following:

- *Seasonal or chronic food insecurity in countries where there are significant wild fish resources —both inland and marine— and where aquaculture production is taking place or is possible;*
- *High prevalence of stunting and wasting among children, and high maternal morbidity and mortality, which could be linked to deficiencies in micronutrients and vitamins that are available in fish;*
- *Significant burden of diet-related non-communicable diseases (particularly heart disease), which could be reduced through increased consumption of omega-3-rich fish;*
- *National food balance data sheets that indicate levels of apparent consumption of fish;*
- *Known use of fish and fishing during “hungry seasons” in areas with highly seasonal crop harvests (e.g. rainfed and Sahelian agricultural regions), information on the types of fish consumed and production systems (e.g. aquaculture, commercial capture, small-scale artisanal fishing, imports).*

The information provided by these indicators, and their monitoring in time and space, will not only make it possible to assess the contribution of fisheries and aquaculture to achieving SDG 2, but also to strengthening collaboration between the ministries and departments involved in FNS in the individual ECOWAS member States.

1.1.7. MAIN POLITICAL ECONOMY ELEMENTS HINDERING THE CONTRIBUTION OF THE FISHERIES AND AQUACULTURE SECTOR TO FNS IN WEST AFRICA.

Improving the contribution of the fisheries and aquaculture sector depends heavily on sufficient fish production to meet the food and nutritional needs of local populations. This optimal and sustainable production should be achieved through effective and efficient management of fisheries and aquaculture by all stakeholders (government, non-State actors, development partners, etc.). However, there are certain political-economy factors that hamper the availability and accessibility of fish for significantly improving FNS among the peoples of West Africa.

These political economy factors are as follows.

- a. From weak capacity to complicity among officials in the monitoring, control and surveillance (MCS) of fishery and aquaculture activities:

Insufficient national capacity and resources for effective MCS of fishery and aquaculture activities, compounded by weakness in the effective and efficient enforcement of existing laws and regulations in fisheries and aquaculture management in some countries of the region, help to proliferate IUU fishing activities that seriously undermine the local and national availability of fish and other fishery products. In some countries, a failure to separate fisheries management and MCS functions renders the fight against IUU fishing activity ineffective. In some cases, the person responsible for resource management does not apply the

penalties imposed by the enforcement officers on vessels and actors that have violated current national fishery regulations. Sometimes this reflects economic or political complicity (e.g. the shipowner belongs to the same political party as the person responsible for fisheries management). Sometimes, when prohibited materials are confiscated, MCS officers are even ordered to return them to their owners and to release the dugout canoes that have been arrested and have committed the offences.

b. Cultural and social constraints on free access to fishery resources:

Traditionally, regardless of their place of residence, artisanal fishing communities consider that they are socially and culturally entitled to free access to the aquatic natural resources in their locality. The perception that fish is a resource belonging to everyone makes effective management difficult and does not make it possible to halt resource depletion under an open-access regime, especially in rural coastal areas. Fish is also synonymous with “quick money” for many artisanal fishing communities in West Africa. Families, especially in coastal communities, rely on income from fishing to pay for food, children’s school fees and medical care. Whilst agriculture requires ownership of land to cultivate and takes much longer to obtain a return on the initial investment, fisherfolk can earn “quick money” relatively easily with little upfront investment, getting free or unconstrained access (especially in artisanal fisheries where controls are often non-existent).

c. Artisanal fishing politicized to the detriment of its sustainable development:

In West African coastal countries, especially during political electoral periods, politicians exploit fishing communities with promises that often act against effective stewardship of the fishery resources. Indeed, the political exploitation of artisanal fishing communities makes it extremely difficult to implement measures to improve fisheries governance, such as restricting access to certain fishing areas for industrial vessels or artisanal pirogues. Given that these artisanal fishing communities encompass millions of people, political parties and their leaders once elected refuse to impose such restrictions or else delay them, fearing that they will lose votes at the next election. In a patronage system of this type, with political parties competing in elections, the loss of millions of votes in fishing communities could prove decisive, tilting the result in favour of the opposing party. This is therefore one of the main reasons for the failure to implement several management measures for small-scale fisheries. For example, measures to reduce fishing capacity and effort, in relation to the overexploitation of certain fish stocks, cannot be implemented effectively in some coastal States. For the same reason, it is politically difficult to reduce (or eliminate) government subsidies, such as free engines and tax-exempt gasoline. These subsidies cannot be abolished without a political cost, despite their negative impact (examples are the cases of Senegal and Ghana), which contributes to the intensification of fishing efforts and the overexploitation of available fishery resources. In short, politicians fear losing their political capital with fishing communities, so often they dare not implement the reforms needed to improve sector governance.

d. Lack of alternative income-generating activities:

Faced with the problems of resource overexploitation and overcapacity in the fisheries sector, it is very difficult to persuade artisanal fishers to reduce their fishing activity in the absence of alternative livelihoods. In such a situation, it is understandable that their response to smaller catches is to increase their fishing effort. Although they are aware of the long-term consequences of overfishing, their main concern is to secure their livelihood in the here and now. Any effective reduction in small-scale fishing needs to be supported by an effective strategy to create alternative sources of income and employment for these fisherfolk. Absent this alternative, it is unlikely that a policy to restrict fishing effort will be voluntarily adhered to in West African countries.

e. Use of small pelagics to produce fishmeal:

Small pelagic species are the most widely available and accessible species in West Africa and an important source of FNS for local populations, especially the poorest and most vulnerable of them. However, in the last ten years foreign firms have set up fishmeal production plants in a number of ECOWAS member States and in Mauritania. Although governments and the private firms concerned justify this action as a source of job creation, the use of small pelagics to produce fishmeal drastically reduces what is availability for human consumption, and thus seriously compromises FNS among local populations.

f. Very high population growth rate:

Controlling demography in West Africa is a major challenge for national governments. The rapid and uncontrolled growth of the regional population and the stagnation of fishery production could aggravate this situation by creating a significant shortfall in the availability of fish relative to needs by 2050. Limiting the number of children in order to take advantage of the demographic dividend on food security encounters social resistance driven by cultural traditions based on religious and traditional considerations.

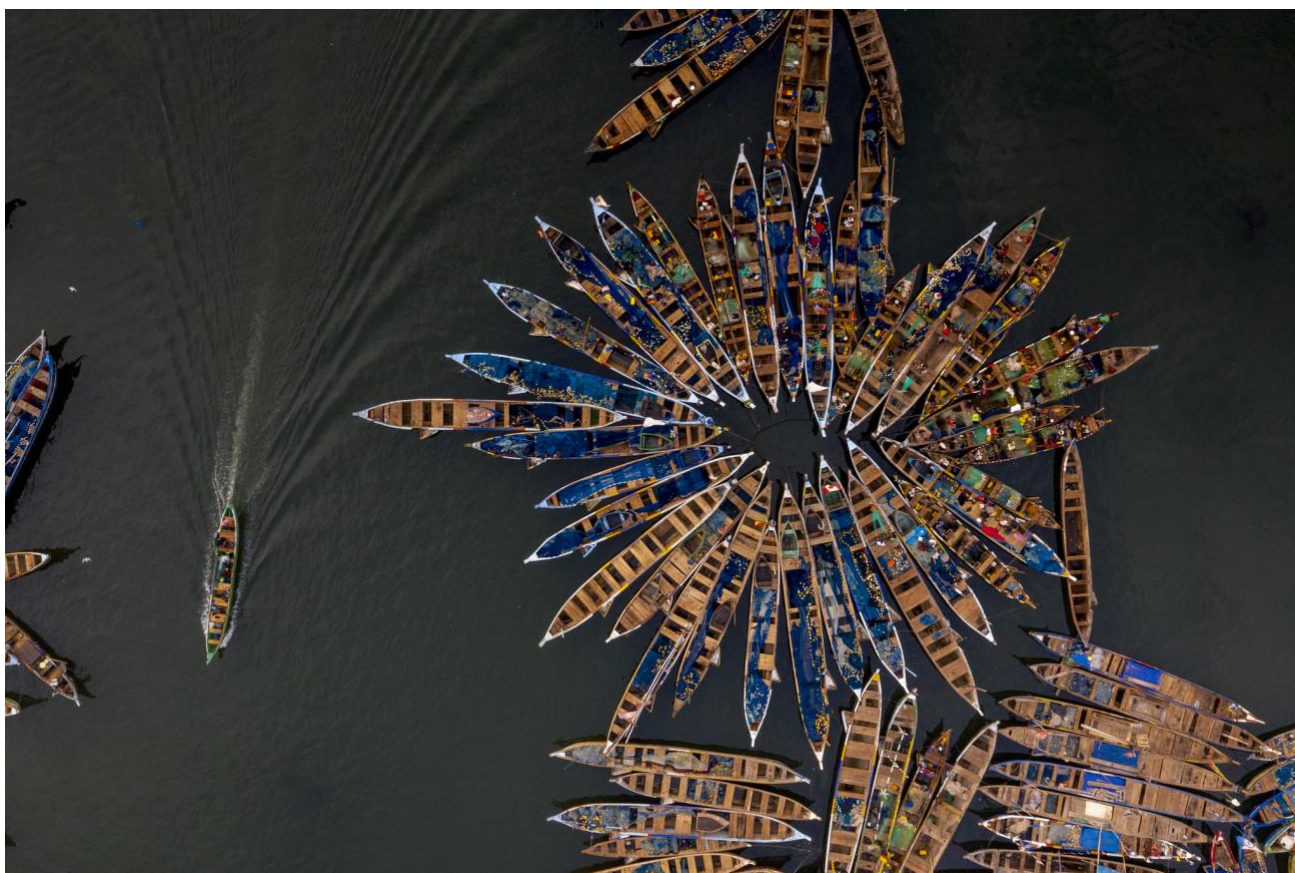
2. Policy design and focus

Is the current set of policies and strategies sufficiently focused and well-designed to adequately address these immediate and underlying causes of food insecurity and malnutrition in the most impactful way both at a national scale and at the level of specific socio-economic groups, geographic areas, agro-ecological zones and/or administrative areas that are facing “stubborn” or more “pervasive” problems of food insecurity and malnutrition?

2.1. Mapping of the political landscape of the fisheries and aquaculture sector in the ECOWAS zone

2.1.1. NATIONAL POLICIES AND STRATEGIES FOR THE FISHERIES AND AQUACULTURE SECTOR

To address the challenges facing the sector, ECOWAS Member States and Mauritania have developed national policies and strategies for the sustainable and harmonious development of fisheries and aquaculture, with country-specific objectives and strategic pillars. *Table 4* below summarizes these documents in terms of their specific objectives and strategic thrusts.



Fishing boats in Ghana. ©FAO/Kyle LaFerriere

Table 4: National fishery and aquaculture development policies and strategies in West Africa according to their specific objectives and strategic pillars

Country	National fishery and aquaculture policy and strategy documents	Specific objectives of national fishery and aquaculture policies/strategies	Main strategic areas of action
Bénin	<ul style="list-style-type: none"> - National fishery and aquaculture policy document 	<ul style="list-style-type: none"> - Ensure national food security by reversing the trend of over-reliance on external food supplies. - Conquer a share of the external market for selected sectors (fish and shrimp) in which Bénin has comparative advantages or proven potential. 	<ul style="list-style-type: none"> - Improvement of the fisheries management and development system. - Rehabilitation and protection of marine and continental species, habitats and ecosystems. - Aquaculture development (to reduce imports of fishery products). - Support for promotion of the private sector.
Burkina Faso	<ul style="list-style-type: none"> - National fishery and aquaculture policy paper (NFAP) (December 2013) - National Strategy for Fisheries and Aquaculture to 2025 (NFSFA) (2013 - 2025) 	<ul style="list-style-type: none"> - Improve performance in the fisheries and aquaculture subsector with a view to strengthening its contribution to poverty reduction and food security, by consolidating achievements and continuously increasing the bases for exploiting fisheries potential. 	<ul style="list-style-type: none"> - Increase and diversify the production of capture fisheries. - Promote intensive and semi-intensive aquaculture integrated with agriculture. - Ensure the sustainable management of fishery resources. - Promote the quality and optimal use of fishery and aquaculture products. - Strengthen the capacity of fishery and aquaculture stakeholders. - Strengthen research and development in connection with the productive sectors.
Cape Verde	<ul style="list-style-type: none"> - Charter for the Promotion of Blue Growth in Cape Verde 	<ul style="list-style-type: none"> - A maritime economy that is sustainably developed and contributes to the development of sustainable and inclusive growth, aiming to maximize economic and social benefits and minimize the degradation of marine and coastal ecosystems. 	<ul style="list-style-type: none"> - Promotion of sustainable fisheries and aquaculture. - Trade, value-added and food security. - Environment. - Aquatic ecotourism. - Maritime transport and port development. - Urban development and responsible coastal planning. - Scientific services and research. - Maritime security.
Ivory Coast	<ul style="list-style-type: none"> - Strategic Plan for Livestock, Fisheries and Aquaculture Development 	<ul style="list-style-type: none"> - Increased availability of fish for food self- sufficiency. 	<ul style="list-style-type: none"> - Sustainable and responsible management of fishery resources. - Improved aquaculture production. - Strengthening and enhancement of national capacities.
The Gambia	<ul style="list-style-type: none"> - Fishery and Aquaculture Policy of The Gambia 2018 	<ul style="list-style-type: none"> - Ecologically and economically sustainable fisheries that guarantee FNS for the population in a prosperous and stable society. 	<ul style="list-style-type: none"> - Ensure healthy ecological systems from which sustainable fishery and aquaculture yields can be obtained. - Integrate artisanal fishing into the formal economy and strengthen/recognize its contribution to poverty reduction, FNS and

Country	National fishery and aquaculture policy and strategy documents	Specific objectives of national fishery and aquaculture policies/strategies	Main strategic areas of action
			<p>socioeconomic benefits for fishing communities.</p> <ul style="list-style-type: none"> - Strengthen human capacity in the fisheries and aquaculture sector for the sustainable development and management of resources. - Strengthen resilience and reduce vulnerabilities to disaster risk and climate change in the fisheries and aquaculture sectors. - Improve working conditions and access to resources to unleash the wealth creation potential of women and youth groups. - Improve the performance of the private sector in fisheries and aquaculture by improving investment and governance.
Ghana	<ul style="list-style-type: none"> - National Fishery and Aquaculture Policy 	<ul style="list-style-type: none"> - Contribute significantly to socioeconomic development for FNS and poverty reduction in a sustainable and economically efficient manner, within the natural limits of capture fishery resources and the requirements of environmental protection, and with a sound basis for rapid growth in aquaculture production. 	<ul style="list-style-type: none"> - Fisheries management, conservation of aquatic resources and protection of their natural environment. - Promotion of value-added in the fisheries sector and improvement of fishing community livelihoods. - Sustainable aquaculture development. - Improved services provided to the sector by the Ministry of Fisheries and other support institutions.
Guinea	<ul style="list-style-type: none"> - Fishery and Aquaculture Policy Framework Document (FAPD) for 2015- 2020 	<ul style="list-style-type: none"> - Significantly improve the contribution of the fisheries and aquaculture sector to Guinea’s economic development, food security, sustainable poverty reduction and environmental protection. 	<ul style="list-style-type: none"> - Regulation of access to fishery resources. - Promotion of fishery co-management. - Implementation of fish stock and ecosystem conservation measures. - Definition of a specific policy and legal framework for aquaculture. - Increased and improved services to production sectors. - Raising of production, processing and distribution chains up to health standards. - Support to the private sector (production, marketing). - Strengthening of institutional capacities and professional organizations. - Strengthening of subregional and regional fisheries cooperation.
Guinea Bissau	<ul style="list-style-type: none"> - Guinea Bissau 2025 - Strategic and Operational Plan (2015-2020) “Terra Ranka”. 	<ul style="list-style-type: none"> - Strengthening fisheries and aquaculture governance. - Fisheries research and product certification. - Development of small- scale fisheries for food security, employment and creation of national value-added. - Aquaculture development. 	<ul style="list-style-type: none"> - Strengthening of capacities in the Fisheries Administration (management of fishing permits). - Fishery statistics. - Support for the control of fishery resources and reinforcement of fishery infrastructure. - Implementation of standards and certification of the microbiological analysis laboratory.

Diagnostic on the effectiveness of national fishery and aquaculture policies and strategies for food and nutrition security in West Africa

Country	National fishery and aquaculture policy and strategy documents	Specific objectives of national fishery and aquaculture policies/strategies	Main strategic areas of action
			<ul style="list-style-type: none"> - Support for the development of artisanal fishing (infrastructure, processing, fishing villages). - Vocational training in aquaculture and support for integration. - Support for the development of fish farming.
Liberia	<ul style="list-style-type: none"> - National Fishery and Aquaculture Policy and Strategy (2014) 	<ul style="list-style-type: none"> - Sustainable management of fishery resources and ecosystems. - Development of aquaculture to meet shortfalls in demand for fish and foreign exchange. - Strengthening of fisheries management and development capacities to ensure the viability of a dynamic fisheries sector. - Improvement of fish value-added, marketing and trade to increase foreign exchange earnings and employment opportunities. 	<ul style="list-style-type: none"> - Restore fish biomass capacities to achieve maximum and sustainable yields. - Conservation of aquatic ecosystems associated with fish production. - Promotion of international cooperation for the management of shared stocks. - Implementation of effective MCS mechanisms to combat IUU fishing. - Establishment of the legal and institutional framework needed for the development of responsible aquaculture. - Revision of the legislative framework to support fisheries management and development. - Implementation of comprehensive capacity building and advisory programmes for the fisheries and aquaculture sector. - Establishment of sustainable financing mechanisms for fisheries development and management. - Establishment of national quality assurance systems to improve fish safety and quality of. - Promote value creation, fish marketing and business opportunities.
Mali	<ul style="list-style-type: none"> - National Fisheries and Aquaculture Development Policy (PNDPA) 	<ul style="list-style-type: none"> - Promote and implement institutional development and capacity building for all public and private actors in the subsector. - Promote and provide security for subsector operators, by improving their income and living conditions, particularly in fishing communities. - Promote sustainable management of the country's fishery and aquaculture resources. - Promote crossborder, subregional, regional and international cooperation relations on issues of management and access to resources and markets. 	<ul style="list-style-type: none"> - Fisheries planning and development of aquaculture in all its forms. - Commercial upgrading of national production of fishery and aquaculture products. - Institutional support to the different actors in the sector. - Support for fisheries and aquaculture research. - Monitoring and evaluation.
Mauritania	<ul style="list-style-type: none"> - National Strategy for Responsible 	<ul style="list-style-type: none"> - Maximize benefits from the country's fishery heritage 	<ul style="list-style-type: none"> - Preserve the integrity of the marine and coastal environment.

Country	National fishery and aquaculture policy and strategy documents	Specific objectives of national fishery and aquaculture policies/strategies	Main strategic areas of action
	Management for the Sustainable Development of Fisheries and the Marine Economy (2015-2019)	for the Mauritanian population, on a sustainable basis, and participate more actively in efforts to develop an inclusive blue economy as a source of wealth and employment.	<ul style="list-style-type: none"> - Evaluate the status and dynamics of exploitable stocks. - Strengthen research capacity. - Develop the fisheries. - Manage resource allocation and access. - Strengthen fisheries surveillance. - Develop infrastructure and value-added industries. - Contribute to food security. - Develop technical and vocational training. - Strengthen health control and product quality. - Develop inland fisheries and aquaculture. - Deepen specific knowledge and know-how.
Niger	- Fisheries and Aquaculture Development Strategy	<ul style="list-style-type: none"> - Promote the contribution of fisheries and aquaculture to food security, poverty reduction and economic growth at all levels. - Promote the protection and conservation of fishery resources and the environment for the sustainable development of natural resources. - Promote applied research in the fishery and aquaculture domains. - Reduce inequalities and inequities by improving access to basic social services (health, education, credit, drinking water, etc.) among fishing communities. - Strengthen regional and international cooperation in fisheries and aquaculture. 	<ul style="list-style-type: none"> - Develop fisheries by securing and intensifying fish production. - Develop aquaculture through the creation of fish farms in hydro-agricultural developments along the Niger River. - Enhance fisheries potential through applied research and technology transfer by, among other things, establishing agro-fishery systems, efficient post-capture techniques, and technologies and products and services that take stakeholders' needs into account. - Improve and diversify the livelihoods of fishing communities with particular attention to women in all phases and stages of the development process. - Improve the nutritional and health quality of the food consumed by fishing community households. - Strengthen the capacities of the public institutions and organizations of fishing and aquaculture communities.
Nigeria	- National Fisheries Policy	- Increase national fish production from all sources in a sustainable and renewable manner, so as to achieve self-sufficiency and export fish in the medium and long term.	<ul style="list-style-type: none"> - Improvement of the socioeconomic life of fisherfolk. - Reduction of post-capture losses. - Reduction of youth unemployment and resolution of gender issues. - Increase in income for fisherfolk and the government from fish exports and domestic trade. - Improvement of protein and micronutrient intake among vulnerable populations.
Senegal	- Sector policy letter on fisheries and aquaculture development	- Contribute to strengthening food security, economic growth and local development.	- Sustainable management of resources and restoration of habitats through: (i) regulation of access to marine and inland fishery resources;

Diagnostic on the effectiveness of national fishery and aquaculture policies and strategies for food and nutrition security in West Africa

Country	National fishery and aquaculture policy and strategy documents	Specific objectives of national fishery and aquaculture policies/strategies	Main strategic areas of action
			<ul style="list-style-type: none"> (ii) development of management plans; and (iii) restoration of marine and freshwater ecosystems. - Aquaculture development through: (i) the establishment of conditions to attract private investment; (ii) the strengthening of technical skills among stakeholders; and (iii) the establishment of infrastructure to support aquaculture development. - Promotion and enhancement of fishery products through: (i) the development of the fisheries sector value chain; (ii) the restructuring of the fisheries industry; and (iii) the establishment of industrial and artisanal fishery processing centres.
Sierra Leone	<ul style="list-style-type: none"> - Fishery and Aquaculture Policy Framework 	<ul style="list-style-type: none"> - The policy sets out a vision and framework for the management and use of fisheries, aimed at ensuring their biological sustainability, reducing poverty and generating wealth in ways that contribute to the economies of coastal and riparian communities. - The new policy also provides for the adoption of good governance principles as a basis for implementing measures to ensure sustainable and equitable use of water resources and food and nutrition security. 	<ul style="list-style-type: none"> - Conservation and sustainable use through risk assessment measures and regulatory actions. - Increased stakeholder responsibility for management and use. - Development of an effective and efficient extension service to facilitate stakeholder engagement in management. issues - Diversify and increase trade in fishery products (strengthening the commercial capacity of the industrial fishery sector). - Sustainable aquaculture development.
Togo	<ul style="list-style-type: none"> - Agricultural policy with the strategic plan for the transformation of agriculture in Togo by 2030 (PA- PSTAT): Fisheries and Aquaculture Sector Policy 	<ul style="list-style-type: none"> - Sustainably ensure food security, rebalancing agricultural trade, improving the level of agricultural incomes, creating decent agricultural jobs. - Strike a balance between the preservation and sustainable use of fishery resources. - Contribute to poverty reduction, food security and gender equity. 	<ul style="list-style-type: none"> - Sustainably increase production in the agriculture sector and its commercial value-added (increase in fisheries production and productivity oriented towards processing and markets). - Improve access to factors of production and modernize production infrastructure (fish production infrastructure and inputs). - Promote technological innovation and vocational training, and disseminate best techniques to support the transformation of agriculture (thematic training for fish farmers). - Improve governance and the institutional framework, and develop support instruments adapted to the new vision (Law No. 2016- 026 of 11 October 2016 on Fisheries and Aquaculture in Togo). - Control of access to fishery resources. - Increased international cooperation.

Source: Reports on the review/analysis of the contribution of national policies and strategies of fisheries and aquaculture to the food and nutrition security of populations in West Africa.

- **National fishery and aquaculture policy development process:**

Documents relating to national policies and strategies for the development of the fisheries and aquaculture sector in West African countries were formulated and validated in a participatory process. This involved consultation with the main fishery and aquaculture actors and stakeholders, other actors from the sectoral ministries involved in development of the sector at the national level, civil society and TFPs. However, the level of leadership, involvement and position/voice in decision-making on the development of these policies and strategies, as well as sector governance roles and functions, vary considerably according to the actors and stakeholders involved.

- a. **State actors and local authorities:**

These include public services and other central, decentralized and deconcentrated technical structures, run by civil servants at various levels, governed by the law establishing general regulations applicable to civil servants. The main State body concerned is the Ministry responsible for the fisheries and aquaculture sector along with its decentralized branches. It is supported by other State institutions or agencies, particularly in the areas of research, planning and training. The key mission of the Ministry responsible for the fisheries and aquaculture sector is to develop and ensure the implementation of national fishery and aquaculture policies and strategies and the application of the laws that regulate them at the national level.

Other sector ministries (environment, finance, maritime transport, maritime safety, spatial planning, etc.) and local and regional authorities are also consulted during the policy and strategy document drafting phase. The Ministry responsible for the fisheries and aquaculture sector provides the leadership and has the final decision-making authority in this participatory policy and strategy development and implementation process. Other state actors (ministries in sectors, local authorities) participate in the process in a consultative and/or collaborative capacity. It is important to note that the ministries or authorities responsible for food and nutrition security are often absent in the process of formulating national fishery and aquaculture policies and strategies in nearly all ECOWAS Member States.

- b. **Non-State actors and the private sector (industry professionals, civil society, NGOs):**

This category encompasses all actors throughout the chain, including fisherfolk, fish farmers, fish wholesalers, women fish processors and saleswomen, those responsible for distributing products to markets, and other actors in trades related to the fisheries and aquaculture sector in the region. These actors have been consulted in the process of formulating national fisheries and aquaculture development policies and strategies.

However, given the weak organizational structures of these actors and the lack of communication between them in the sector, they are unable to make their voices heard, particularly vis-à-vis State actors in discussions on national policy formulation. Although they participate in an advisory capacity and offer their ideas and suggestions for improving the sector on which their livelihoods and those of their families depend, their voice is still weak. As a result, they are not yet able to participate effectively in decision-making on the development of such policies and strategies. Their organizational, managerial and communication capacities need to be improved and strengthened to make their voice heard. Yet it is they who are most concerned about achieving national policy objectives because their livelihoods depend on it. In addition, the implementation of these national policies should involve more non-State actors and the private sector, which represent 90 percent of those affected by the success of these national policies and strategies. Therefore, it is time to put this category of actors in the leadership of the policy development or reform and/or revision process.

Civil society and NGOs are also involved in the national policy making process for the fisheries sector, but only in an advisory capacity. In fact, they should intervene later in policy implementation, hence

their participation in the formulation phase. As noted above, the Fisheries Administration retains the leadership and final decision-making authority in this process. The private sector, civil society and partners play the role of technical and financial support (financing of projects/programmes) as well as the supervision of actors in this phase of policy implementation; they have no decision-making power.

- **Intersectoral coordination mechanisms:**

With regard to national coordination mechanisms, some countries (Cape Verde, Mali, Bénin, Burkina Faso, Chad, Ghana, Togo, Sierra Leone) have adopted a participatory mechanism for intersectoral and multi-actor dialogue in the development of fishery and aquaculture policies and related laws and regulations, as well as in implementing these sectoral policies. This mechanism involves participation and dialogue between the public and private sectors, more specifically all the actors/entities involved in the development of the fisheries and aquaculture sector or that of FNS. This includes the State with its various relevant ministerial departments and the decentralized authorities, professionals throughout the sector value chain, the private sector, young people and women, civil society and TFPs. This consultation mechanism is often coordinated and led by the Ministry responsible for the fisheries and aquaculture sector, or else by the intersectoral institution responsible for FNS strategies at the national level.

In a number of other countries, this mechanism is established but not operational for a variety of reasons, including lack of funding and the need to increase incentives for the private sector to work with the public sector. Lastly, in other cases (Senegal), there is a lack of functional multi-actor and intersectoral coordination frameworks at the institutional level.

At the regional level, the FIRST project is currently working to establish a regional multi-stakeholder and intersectoral collaboration framework in the fisheries and aquaculture sector throughout ECOWAS.

2.1.2. ANALYSIS OF CONSTRAINTS THAT HAMPER THE CONTRIBUTION OF NATIONAL FISHERY AND AQUACULTURE POLICIES AND STRATEGIES TO FNS AMONG POPULATIONS IN WEST AFRICA.

The analysis of national fishery and aquaculture policies and strategies in ECOWAS member countries and Mauritania, as well as their specific objectives and strategic pillars (see table 3), highlights the following salient points.

The national management of the fisheries and aquaculture sector in West Africa generally pursues the following specific objectives:

- To contribute to FNS among the populations, including fishing and aquaculture communities, through the ecologically and economically sustainable management of the country's fishery and aquaculture resources;
- To improve the contribution made by the fisheries and aquaculture sector to economic development through sustainable poverty reduction, improvement of living conditions and incomes in coastal and riparian communities in the different countries, by increasing the value-added and marketing and trade of fishery products to generate foreign exchange earnings and employment opportunities;
- To promote and implement institutional development and capacity building among all public and private actors in the fisheries and aquaculture sector to achieve more effective management and better governance of natural resources;
- To promote and improve cross-border, subregional, regional and international cooperation to solve problems of management and access to resources and markets.

In addition to these objectives, in some countries (Mauritania, Mali, Sierra Leone and Liberia), the fishery and aquaculture policy also aims to increase the sector's contribution to the national economy, by enhancing the value-added of fisheries, fish marketing, foreign exchange earnings and employment opportunities and the living conditions of fisherfolk and their families.

The objectives of the national fishery and aquaculture policies and strategies are broken down into strategic areas of action, the achievement of which should make it possible to address the constraints that hamper the sector's contribution to FNS among West African populations. Thus, in general, national policies are developed to address the following issues:

- Poor governance of the fisheries and aquaculture sector at the national level;
- Significant post-capture losses and non-compliance with health and quality standards for fishery and aquaculture products;
- Insufficient development of sustainable commercial aquaculture;
- Weak intraregional trade in fishery and aquaculture products (linked to weak regional cooperation);
- Insufficient promotion and implementation of the participatory approach (co-management) in the sector's management;
- Phenomenon of IUU fishing in maritime and continental waters;
- Real shortage of scientific research capacity; and
- Ecosystem degradation, loss of biodiversity and the effects of climate change.

It is important to note that the magnitude of the various issues identified is not the same for all countries (e.g. between coastal and continental countries), which could explain some differences in the prioritization of the strategic lines of intervention.

2.1.3. ISSUES THAT ARE MISSING FROM EXISTING NATIONAL FISHERY AND AQUACULTURE POLICIES AND STRATEGIES

A comparative analysis of the specific objectives and lines of intervention of national policies and strategies revealed the absence of certain issues, which, if effectively taken into account, should make it possible to improve the sector's contribution to FNS in West Africa. These concerns include the following:

2.1.3.1. The "food security and nutrition" dimension:

Although the national fishery and aquaculture policies of West African countries all include the attainment of FNS in their strategic objectives, the strategic pillars and priority actions identified do not clearly cover food security issues in their dimensions of improving the availability, accessibility and use of fish through better management and good governance of the sector. The same is true of the nutritional dimension, which is totally absent from national policies, even though improving nutrition is an important issue in the home, especially for women and young children, who are the most vulnerable. To correct this failing, the importance of fish in the dietary intake of the population should be integrated into national food and nutrition security policies; and the country's nutritional concerns should also be taken into account in the formulation or revision of national fishery and aquaculture policies.

2.1.3.2. The sustainable livelihoods dimension:

Taking the "sustainable livelihoods" dimension into account in national fishery and aquaculture policies, by promoting alternative income-generating activities, is a way to diversify and improve the

income sources of families that are dependent on fisheries and aquaculture (reducing the pressure on fishery resources). Secondly, it is also a measure for adapting vulnerable and marginalized coastal and riparian communities to the effects of climate change. This approach could support efforts towards joint management of natural resources in West Africa.

2.1.3.3. The gender and social protection dimensions

The national fishery and aquaculture policies in most ECOWAS Member States, (see table 3) do not take equity and gender issues clearly and consistently into account. Gender mainstreaming in fishery and aquaculture policies gives women the opportunity to regain their place in society and to recognize and exploit opportunities to create wealth. As noted above (see 2.1.3), it is a crucial element in alleviating poverty, improving FNS and ensuring good governance and the sustainable development of fishery and aquaculture resources. The political will and capacity-building needed to integrate women at all stages of the process of formulating, implementing and monitoring-evaluating national policies are essential for ensuring sustainable resource management. Moreover, in ECOWAS Member States, the Ministries in charge of fisheries and aquaculture very seldom have a “gender focal point” or a “gender unit” within their organizational structure.

The social protection of coastal rural populations that depend on fishing and aquaculture for their livelihoods is not recognized in most national fishery and aquaculture policies of ECOWAS member States. Yet these rural populations and their activities are threatened by a number of risks and challenges, both systemic and local, including shocks and stresses (droughts, floods, rising temperatures, changing rainfall patterns, conflict and violence). Thus the integration of long-term, predictable, regular and flexible social protection into national fishery and aquaculture policies will help bridge the gap between humanitarian and development interventions, thereby helping to reduce poverty, hunger and food insecurity, while also strengthening the resilience of populations to disasters and recurrent crises in West Africa.

2.1.4. CONSISTENCY OF NATIONAL FISHERY AND AQUACULTURE POLICIES WITH OTHER SECTOR POLICIES IN WEST AFRICAN COUNTRIES

The consistency of fishery and aquaculture policies with those of other sectors (environment, trade, tourism, economy and finance, etc.) is an important factor in the pursuit of coordination and synergy of action to improve the sector’s contribution to FNS and poverty reduction in West Africa.

- **Consistency of national fishery and aquaculture policies and strategies with respect to environmental policies.**

In West Africa, a number of inconsistencies between these sectoral policies need to be remedied.

Firstly, the effects of climate change today could aggravate the crisis already facing the fisheries sector (overexploitation of fish stocks). However, some of these are only weakly integrated into national fishery policies, and others not at all. Moreover, climate change adaptation strategies in West Africa have thus far given little consideration to the fisheries and aquaculture sector, particularly the vulnerability of artisanal fishing communities to the impacts of climate change. Indeed, the crisis that the sector is already experiencing with the depletion of fishery resources is likely to be exacerbated by the disruptions expected from the effects of climate change.

Secondly, oil drilling in the coastal zone of West Africa is reaching cruising speed (examples being Nigeria, Mauritania, Ghana, Côte d’Ivoire and Senegal), while exploration in other countries is also intensifying (Guinea and Guinea Bissau). It goes without saying that mining and oil exploitation in the

West African maritime coastal areas will pose real environmental, economic and social problems for fisheries, without any measurement of the real effects or impacts on fishing communities. Serious studies must be performed on the areas in question, in synergy between the two ministries (fisheries and environment), in order to limit the impacts of mining and oil activities on fisheries; and sectoral policies in this area must take this into account for greater consistency.

Thirdly, in some ECOWAS coastal states (Senegal, Mauritania, The Gambia, Guinea, Guinea Bissau, Sierra Leone), MPAs are often created and managed by the Ministry of Environment in areas that are important for artisanal fisheries, without consultation and/or coordination with the Ministry responsible for fisheries and aquaculture. This situation can sometimes lead to conflicts of allocation and use between artisanal fishermen and the nature protection services of the Ministry of the Environment. As noted above (cf. section 2.1.6), coordinated and collaborative management between the Ministry of the Environment and the Ministry responsible for fisheries will allow better use to be made of MPAs, which are also important fishing grounds for artisanal fishermen, in which nearly all production is destined for consumption by local populations.

- **Consistency of national fishery and aquaculture policies and strategies with tourism policies**

The relationship between fisheries and tourism is often complex in West Africa. With the development of beach tourism, many artisanal fishing activities have been relocated to make way for tourism infrastructure without any benefits for local fishing communities, hence the need to seek complementarities and consistency between fisheries and tourism policies. Indeed, enhancing trade in fish products caught on an artisanal basis, to supply hotels and restaurants, is a sure way to increase the incomes and livelihoods of local fishing communities. The hundreds of hotels in coastal areas and the hundreds of thousands of tourists they receive each year represent an important market for fisherfolk. However, the potential for ecotourism development needs to be better managed in order to promote consistency between tourism activities and those of artisanal fishing communities in the subregion. For example, a reduction in fishing pressure resulting from tourism could help fish stocks to recover. At the same time, increased demand from tourism could push up prices and increase pressure. Tourism can also have negative environmental effects in aquatic environments, and food availability and accessibility can be affected.

- **Consistency of national fishery and aquaculture policies and strategies with respect to trade policies.**

This consistency between national fishery and trade policies can be analysed by evaluating the cost and impact on the national economy of subsidies and tax exemptions granted to the fisheries sector (local market supply, jobs created in the sector and export earnings).

West African countries are implementing different economic and trade policies in the fisheries sector. For example, Senegal exempts artisanal fishing vessels from fuel tax, in order to promote the supply of its national market. This tax exemption costs the Senegalese government nearly USD 36 million per year (Papa Gora Ndiaye, 2014). Yet, instead of supplying the domestic market, artisanal fishing canoes supply up to 70 percent of the raw materials to fish-processing companies for export to foreign markets. This diverts from the obvious objective, because, through this subsidy, the Senegalese State, is supporting exports more than supplying the national market (which was the initial objective). Fishing enterprises in Senegal generally operate under a preferential tax regime for exporters (entreprises franchises d'exportation), and receive tax exemptions and subsidies on their raw material, equipment and fuel purchases, on the pretext that they are exporting enterprises that bring in export earnings

and create jobs. It is therefore necessary to evaluate and monitor the impact of subsidies granted to the sector to gauge their relevance or propose their revision in order to make economic and trade policies consistent with the FNS objectives of the national fishery and aquaculture policy.

2.1.5. NEED FOR AN ECOWAS REGIONAL FISHERY AND AQUACULTURE POLICY

The development of a fisheries management policy framework that is consistent throughout the region has become more than necessary, to support national initiatives, to generate cooperation where the individual capacity of States is insufficient, and to address issues that extend the jurisdiction of a single State, such as the problem of managing shared fishery resources (fish and shrimp stocks), intraregional trade and combating IUU fishing in the region's countries.

As the main regional economic integration institution encompassing all countries of the region, ECOWAS is best placed to harmonize processes of regional consultation and cooperation for fisheries and aquaculture development. Hence the need to develop an integrated and coordinated ECOWAS regional fishery and aquaculture policy.

3. Emerging problems

Are current policies and strategies sufficiently forward looking to also address the food security and nutrition impacts of emerging problems related to for example migration, youth unemployment, climate change, population growth, urbanization, etc.?

3.1. Analysis of the impact of emerging issues on the contribution of existing national fishery and aquaculture policies and strategies to FNS among the different populations

This section uses the information available in West Africa to perform a number of indicative analyses of the likely effects of these emerging problems on FNS in the fisheries and aquaculture sector in ECOWAS countries (+ Mauritania).

3.1.1. POPULATION GROWTH AND RAPID URBANIZATION

According to the United Nations, with the world's highest average fertility rate of 5.6 children per woman, the ECOWAS region will have a population of around 1 billion in 2050, half of whom will be young people. This very rapid and as yet uncontrolled growth of the regional population and the stagnation of fisheries production could aggravate the FNS situation by creating a significant shortage in fish available to meet the needs by 2050. Current average per capita consumption in the ECOWAS zone is estimated at 14 kg/year; and it could fall below 10 kg/year/capita by 2030. There is therefore an urgent need to contain population growth in ECOWAS countries, in order to promote viable and sustainable development adapted to the region's capacity to produce fish and other fishery products. To that end, ECOWAS intends to promote strategies to facilitate a rapid and voluntary decline in fertility through universal access to family planning, raising female education levels and strengthening efforts to improve child survival. The aim will be to halve the fertility rate and to bring the excessively high population growth rate in line with the unduly modest economic growth rate.

The West Africa region displayed an urbanization rate of 41 percent in 2010, up from 36 percent in 2000; and six ECOWAS member States are now close to the 50 percent threshold: Côte d'Ivoire 48 percent, The Gambia 48 percent, Cape Verde 47 percent, Senegal 46 percent, Togo 46 percent, and Ghana 45 percent. Niger remains among the least urbanized countries in West Africa at 18 percent (Moriconi-Ebrard and others, 2016). This rapid urbanization linked to a very high demographic growth rate is bound to fuel a high demand for fish to meet the animal protein needs of a middle class that mostly lives in these urban areas.

3.1.2. CLIMATE CHANGE

In West Africa, natural phenomena associated with climate change, such as global warming, rising sea levels, storms and floods, undermine the performance of the fisheries sector. Rising sea levels and coastal erosion have already reached significant levels in some ECOWAS coastal states, endangering infrastructure and fishing villages (an example being the town of Saint-Louis in Senegal). Rising sea levels are also expected to threaten mangrove areas (for example in The Gambia), which are the key nursery area for several fish species, and provide the main source livelihood for many people (mostly women) who gather oysters and other invertebrate species. In inland fisheries and fish farming, the silting of riverbeds, the filling in of ponds and stream entrenchment, among other phenomena, all stem

from the effects of climate change (drought, erosion of watersheds) and cause a decline in fish production (fishing and aquaculture) in these inland rural areas, thus negatively affecting the FNS of the populations in question.

Moreover, given the high levels of greenhouse gas (GHG) emissions, serious scientific studies (Laffoley, D. and Baxter, J.M., 2016) fear a shortfall in fish supply in all West African countries as a result of climate change by 2050. In the exclusive economic zones (EEZs) of the six countries closest to the equator (Ghana, Côte d'Ivoire, Liberia, Togo, Nigeria and Sierra Leone), catches are expected to shrink by about 50 percent. The projected declines are due to the changes expected in the distribution of fish species in response to rising water temperatures and a reduction in net primary productivity in the tropics by 2050 (Laffoley, D. and Baxter, J.M., 2016). The reduction in future fish catches (especially small pelagics) in West Africa is expected to compromise FNS among the different populations.

Lastly, the key actors in post-harvest activities in the region's fisheries and aquaculture sector are also the traditional women processors who play a central role in the rural economy of West African coastal countries. But these women also represent one of the social categories most vulnerable to the adverse effects of climate change on their activities (larger losses, irregular supply of fish, coastal erosion, flooding that threatens processed products). As a result, climate change impacts could undermine the livelihoods of these coastal communities and probably further reduce their perimeter of survival in several countries, with the risk of exacerbating poverty and fuelling "forced" migration (Barange and others, 2018).

3.1.3. YOUTH UNEMPLOYMENT

A huge proportion of West African people are young: the under 30s represent more than 60 percent of the regional population. In the fisheries and aquaculture sector, many young people do not want to pursue their parents' fishing profession. As a result they add to the number of jobseekers trying to survive in urban areas, which risks aggravating the already high rate of youth unemployment in these areas. In order to improve this situation it is important to address one of the main challenges facing the sector, namely that of providing policy instruments and incentives to motivate young people to enter the fisheries and aquaculture sector. To meet this challenge, a number of reforms of national economic, financial and fiscal policies need to be developed and implemented to promote not only an enabling environment for investment, but more importantly, win-win partnerships between fisherfolk and fish farmers and other service providers. This is a major challenge in view of the imperfections of current investment codes, which often favour private investment to the detriment of small-scale producers (fishing and aquaculture). However, this will require better fishery management systems to be able to absorb this additional labour force, with much greater investment in value chains to create employment opportunities without compromising the production base of the fishery resources being exploited. Consequently, job creation should instead target value-added activities (processing, cleaning, transport, wholesale trade, etc.) and small- and medium-scale aquaculture.

3.1.4. MIGRATION

West African populations are among the most mobile in the world, with migratory flows within the region exceeding those destined for the Maghreb or Europe. About 90 percent of migration is intraregional (migration within the region) compared to 10 percent extraregional (international migration). Contemporary migratory flows in West Africa are driven by socioeconomic, political and historical-cultural factors that have more or less serious consequences on the fisheries and aquaculture sector —like all other productive and rural development sectors in the ECOWAS zone. The coastal marine, riparian and other watersheds of West Africa where fisheries and aquaculture are the primary

socioeconomic activity are severely affected by migration, since more than 30 percent of the young people migrating from ECOWAS member States to Europe, America, Asia and other parts of Africa (including from rural to urban areas) are said to come from communities living in these coastal marine and riverside areas.

In the case of migratory movements specific to the fisheries and aquaculture sector, fisherfolk migrate along the paths of abundance of migratory species (mainly small pelagic fish) and areas of seasonal fish concentrations. Migrant fisherfolk will thus redeploy their effort throughout the fishing period on a given species or group of species in fishing areas that may sometimes be a long way from their usual place of residence. Migration is also seasonal; Senegalese and Ghanaians are the main migrant fisherfolk in West Africa.

Lack of MCS capacity in fisheries, compounded by widespread corruption, have led to the number of migrant pirogues far exceeding the total number allowed by bilateral fisheries agreements, which are very common in the region. At the same time, illegal fishing by migrant fisherfolk in biosphere reserves or MPAs seriously undermines biodiversity protection and marine ecosystem conservation. Thus, the majority of catches made by migrant (foreign) artisanal fisherfolk are unknown and therefore not counted in national statistics. Where landings take place in the country of origin or where the landing places are too far away to be covered by statistical surveys, no quantitative data are available in the country of origin of the catch. Consequently, the issue of “fisherfolk migrations” poses a real challenge to the regulatory framework for effective management of artisanal fisheries. All of this feels the high level of exploitation of fishery resources, which accentuates species scarcity and diminishes the availability of fish for the FNS of coastal communities in the West African region.

It is also important to note the existence in West Africa of large youth migration flows that deprive the fisheries and aquaculture sector of valid and competent workers, in individual countries, the region as a whole and especially in rural marine coastal and riparian areas. These migratory flows of young people, all categories taken together, constitute a genuine scourge (involving thousands of deaths while crossing the Mediterranean and traversing the Sahara desert for illegal immigration to hypothetical Eldorados); and they are very difficult to channel, control or stem without the political will to provide real employment alternatives for these young people. However, it is important to remember that youth represent two thirds of the population in the ECOWAS zone. When they do not find decent jobs, these young people ultimately become a social time bomb with the potential to cause unpredictable damage to the political stability and socioeconomic development of their countries.

The national fishery and aquaculture policies that exist in ECOWAS Member States do not sufficiently take into account the effects of emerging issues (migration, youth unemployment, climate change, population growth and rapid urbanization) on the sector’s contribution to combating food and nutrition insecurity among the different populations. Measures to prevent or adapt to the effects on FNS of these emerging problems should be considered when updating national policies and developing the future ECOWAS regional fishery and aquaculture policy.

4. Implementation mechanisms and capacities

Are the implementation mechanisms and capacities that are in place adequate to reach specifically those people and areas most affected by food insecurity and malnutrition?

4.1. Analysis of mechanisms for implementing fishery and aquaculture policies and strategies

One of the key determinants of the implementation of national fishery and aquaculture policies and strategies is the level of operational, technical and institutional capacity of all actors and stakeholders at the local, national or regional level, in the public or private sector.

4.1.1. AT THE NATIONAL LEVEL (ECOWAS MEMBER COUNTRIES + MAURITANIA)

National fishery and aquaculture administrations in West Africa have limited capacity to fulfil their governance responsibilities. In several ECOWAS Member States, the budgetary appropriations of fisheries and aquaculture administrations are insufficient for them to fulfil their tasks effectively. Moreover, inadequate human, technical and organizational capacity, compounded by insufficient and inadequate material resources, are serious obstacles to monitoring and managing the sector and improving its contribution to food and nutrition security and poverty reduction.

In several ECOWAS countries, the national supply of advisory support and capacity building for producers, particularly the human resources of the State institutions represented by the central fisheries administration and deconcentrated services, remains insufficient relative to real needs. Technical staff in the deconcentrated services of the line ministry that supervises actors in the field is globally insufficient, with just a few agents having the required skills in fisheries and aquaculture. The case of Ghana's Fisheries Commission is a good illustration of the situation in all West African countries (see box 1).



©FAO/Antonello Porto. Small scale family fishing boats in the port in Nouadhibou (Mauritania).

Box 1: Shortage of human (and technical) resources in the Ghana Fisheries Commission.

In Ghana, the structural organization of the Fisheries Administration was reformed in 2016, with the creation of new departments and units. An assessment was made of human resource needs (both quantity and quality) to support this reform, and new staff were recruited. The following table illustrates the substantial human resource deficit in the Ghana Fisheries Commission in 2017.

Status of the staff of the Commission on Fisheries

Category of personnel	Needs expressed	Staff recruited to posts
Central level	387	82
Regional and zonal level	1 586	245
Demonstration centres	36	11
Total	2 009	338

Source: *Commission des pêches (2017).*

Table 3 reveals a huge capacity shortfall. Specifically, of the 2,009 staff required, only 338 have been recruited, which means approximately that just 17% of the required posts are filled, resulting in an overall shortage of 83% at the national level. Organizationally, there are huge staffing gaps at the national, regional and zonal levels, as well as in the technical and support divisions. In particular, there is an 85% staff deficit in the regions and zones; a 79% deficit at headquarters and 70% deficit in the demonstration centres.

Source: *Quatey, S., 2017. Review/analysis of the contribution of fishery and aquaculture policies and strategies to food and nutrition of populations in West Africa/case of Ghana.*

In addition, national governments have limited capacity to enforce existing rules and regulations. As a result and despite all the efforts made with TFPs, ECOWAS Member States, especially coastal ones, have thus far been unable to prevent the use of illegal fishing methods, despite the official ban and the declared political will to combat these practices. One of the reasons for this is the shortage of staff in the fisheries administration and the lack of technical and financial resources at the national level. The large number of vessels, combined with their geographical dispersion, makes it extremely difficult to create an effective management system. As artisanal pirogue fishing takes place all along the coast from hundreds of villages, effective surveillance would require a large presence of public officials and significantly more manpower than is currently available. In particular, a large number would be needed at the local level, both on land and on sea patrol vessels. Consequently, the establishment of effective management through the correct application of regulations for small-scale fisheries would require fairly substantial human and material resources, at least in the short and medium terms.

Moreover, there is often no specific programme, strategy, plan or plan for continuous training and/or retraining to ensure the availability of technicians and the maintenance of their operational capacity to supervise, monitor and provide advisory support in fishery and aquaculture activities. The current training system for technicians and managers in the fisheries sector is free and depends essentially on agents' initiative and determination to find a suitable training structure for them. As a result, some technical skills are lacking in the Fisheries Administration such as expertise in aquaculture or nutrition, project/programme preparation and management, data collection and analysis, fishery economics. This prevents the administration from fulfilling its governance duties (fisheries management, MCS, resource management, implementation and monitoring-evaluation of projects, support-advisory support to private actors).

The political economy elements associated with the limited capacity of the Fisheries and Aquaculture Administration include the following:

- The lack of intersectoral coordination or even lack of collaboration between certain ministries in some countries does not improve the performance of the fisheries and aquaculture sector at the national level (which can lead to jurisdictional disputes between departments, for example between fisheries and environment in the management of MPAs).
- Sometimes recommendations made by national research bodies (based on scientific data) or intersectoral advisory bodies on fisheries and aquaculture are not taken into consideration by national policy makers. This does not optimize the management and governance of the sector and weakens the prerogatives of the Administration in charge of fisheries and aquaculture.
- The small budgetary allocation to the fisheries and aquaculture sector at the national level does not enable the ministry in question to equip itself with sufficient and adequate resources and equipment to fulfil its mission effectively. The lack of reliable and up-to-date data on the importance and contribution of the sector to FNS and poverty reduction does not facilitate budget negotiations at the government level. This could explain the low budgetary appropriation even though the sector's priorities are defined in national development planning documents.

Non-State actors in the fisheries and aquaculture sector have limited technical and organizational capacities. Although fishery and aquaculture communities have field organizations on paper, these suffer from the following: weak organizational capacities, high illiteracy rates, lack of adequate technical training, complex relations with the public administration, ignorance of information on promising markets, difficulties in mastering and/or accessing export channels, low self-financing capacity, and sometimes the individualistic tendency of private operators. All of these factors obstruct the proper functioning of professional structures, reduce and destabilize the income of sector actors and make their activities in the sector more precarious.

Women in the artisanal fishery subsector particularly need to strengthen their umbrella organisations to gain access to financial credit and market data. Their technical capacities in the processing, transformation and distribution of fishery products need to be strengthened to improve the performance of their activities, in order to support the sector's contribution to the FNS of their families, communities and countries. Lastly, women's capacities to participate actively in decision-making on sector management at the local and national levels also need to be improved and strengthened.

Civil society NGOs play an advocacy role with their professional partners and provide advisory support or coaching for professionals in the fisheries and aquaculture sector. To improve their effectiveness, the diplomacy and advocacy capacities of NGOs need to be strengthened, in particular to enable them to collaborate with the central administration responsible for fisheries and aquaculture in ECOWAS Member States.

4.1.2. AT THE REGIONAL LEVEL (IN THE ECOWAS COMMISSION)

One of the major concerns is the weak human and organizational capacity of the Agriculture and Rural Development Directorate of the ECOWAS Commission, which is responsible for implementing and monitoring the regional fishery and aquaculture policy currently being formulated. This Strategic Directorate does not yet have fishery and aquaculture specialists with expertise in FNS who can assess the strategic issues and the importance of the sector's contribution to combating food and nutritional insecurity among populations in West Africa.

Additional support will therefore be needed to analyse organizational capacities and training needs in the ECOWAS Commission and to formulate and execute a programme to strengthen institutional, organizational, technical and human capacities, looking for an effective implementation of the ECOWAS regional fishery and aquaculture policy and its contribution to FNS.

There are two subregional fisheries and aquaculture organizations in the ECOWAS area: (i) the Subregional Fisheries Commission (SRFC); and (ii) the Fisheries Committee for the West Central Gulf of Guinea (CPCO / FCWC), which are functional despite funding difficulties. The recurrent requests for multifaceted support from these two subregional organizations, made by member countries, demonstrate their usefulness for the West African region. Capacity building in the SRFC and the FCWC, including the rationalization of their activities and programmes through closer association with ECOWAS could enable the roles of each organization to be distributed more effectively, with a view to ensuring harmonious development of the fisheries and aquaculture sector while enhancing its contribution to the FNS among populations in the ECOWAS zone. The ECOWAS Commission would clearly confine its role to guiding and defining regional policies and strategies, while the SRFC and the FCWC could serve as specialized and operational bodies. This would enable them to support Member States, through programmes and projects, in implementing the ECOWAS regional fishery and aquaculture policy.

4.2. Analysis of the means and/or mechanisms for the implementation of national fishery and aquaculture policies and strategies

Existing national fishery and aquaculture policies are not being implemented effectively on the ground, owing to several factors, which are discussed below along with some political economy analysis:

- Given the scarcity and, above all, the chronic inadequacy of the mobilization of national domestic financial resources, projects and programmes are the best way to implement national policies and strategies for the sustainable development of fisheries and aquaculture in all ECOWAS Member States. Most programmes and projects in the fisheries and aquaculture sector evolve and operate in a highly compartmentalized and isolated manner, without any complementarity or synergy, not only with other projects and programmes in the sector, but also with those focusing on FNS. Weak or non-existent coordination and synergy in the field and a lack of activities information sharing are among the main causes. Some projects and programmes are based on the agenda/interests of donors, which do not always take respond to the real concerns of national and/or local beneficiaries. The interventions undertaken through these projects or programmes still face problems of coordination and sustainability for genuine sustained growth of the sector; and the real impact of these projects and programmes on the contribution of the sector to the food security of the populations in West Africa is very difficult to perceive or evaluate.
- The weakness or absence of a system for monitoring and evaluating the implementation of national fishery and aquaculture policies, with effective indicators, including those needed to track the sector's contribution to food and nutrition security and poverty reduction.
- Chronic institutional instability¹⁰ over the last ten years or so has resulted in a major loss of technical skills, as well as mistrust and a decrease in staff motivation to train in a sector that is apparently not highly regarded and in which posts are precarious.
- The insufficiency and/or non-existence of structures and mechanisms for consultation and exchanges between the different sector stakeholders (administration, profession, TFPs, civil society, etc.) at national level, which could support policy dialogue and implementation of the fishery and aquaculture policies in force in the countries.

¹⁰ Institutional instability refers to the transfer, in recent years, of ministerial responsibility for the fisheries and aquaculture sector, between the Ministry of Agriculture and the Ministry of the Environment or the Ministry of Water and Forestry, depending on the country.

- Weak private sector incentives to invest in the sector and, in aquaculture, the absence of an enabling environment for investment (secure access to land rights, water and other facilities) while providing guarantees for small-scale aquaculture producers.
- Insufficient dissemination and popularization of documents relating to the national fishery and aquaculture policy and the key elements of laws and regulations, which can weaken ownership of the national policy by actors and stakeholders and result in poor understanding of the sector's management and regulatory measures.

5. Resource allocation

To what extent are the existing policies and strategies adequately resourced (from national resources and other sources), implemented, monitored and, in case of inadequate or incomplete implementation, what are the implications for the achievement of the intended food security and nutrition impacts?

5.1. Problems of funding to implement the existing fishery and aquaculture policies and strategies in the ECOWAS zone and Mauritania

5.1.1. INSUFFICIENT NATIONAL FUNDING FOR THE SUSTAINABLE DEVELOPMENT OF FISHERIES AND AQUACULTURE IN WEST AFRICA

Funding is allocated for the sustainable development of the fisheries and aquaculture sector in the framework of sectoral budget programming in each ECOWAS Member State. However, the main difficulty lies in the practical mobilization of resources from the national entity responsible for the State's public finances (Ministry of Economy and Finance and the Ministry of National Budget), despite the tax revenues generated by the sector for the national treasury through fisheries agreements with the EU, China, Russia and the sale of private fishing permits and other financial fees. While it is very difficult to obtain comprehensive and relevant information from the competent public services on the exact level of funding provided to the fisheries and aquaculture sector, domestic funding for the sector is still considered insufficient, covering just 20-30 percent of needs for the effective implementation of national fishery and aquaculture policies and for achieving FNS objectives in all Member States. One of the main consequences of this situation is the sector's heavy reliance on external financing (more than 70 percent of needs) through the various TFPs in programmes and projects implemented in the fisheries and aquaculture sector in West Africa. But these face challenges owing to the lack of coordination between the donors' different development agendas and sector concerns at the national and regional levels.

Furthermore, the amount of investment channelled to the fisheries and aquaculture sector in the National Agricultural, Food Security and Nutrition Investment Plans (PNIASAN / NAIFNSP) still does not surpass 10 percent of the total NAIFNSP budget in any ECOWAS Member State (*see table 5*). Moreover, information on this rate of funding is often not available, either because it is not disaggregated into the various segments of agriculture, or simply because it is not included in the total NAIFNSP budget in some Member States. It should be noted that the NAIFNSP is the single national strategic framework through which each national government mobilizes national and international investment in agriculture, including fisheries and aquaculture and FNS, in all ECOWAS member States.

Table 5: Financing of the fisheries and aquaculture sector as a percentage of the total NAIFNSP budget (or equivalent document) in the ECOWAS Member States and Mauritania

Country	Level (%) of funding*	Comments
Benin	4.12%	Relative to the total NAIFNSP budget (2017-2021)
Burkina Faso	0.48%	In relation to the total budget of the Second National Rural Sector Programme (PNSR 2016-2020)
Cape Verde	5.0%	Relative to the total cost of NAIFNSP II (2018-2021)
Ivory Coast	3.9%	Relative to the budget of the Second Generation National Agricultural Investment Programme (PNIA II 2018 - 2025) and the Strategic Plan for the Development of Fisheries and Aquaculture (PSDEPA 2014 - 2020)
The Gambia	--	Not available
Ghana	1.96%	As a proportion of the total budget of the Ghana Agricultural Investment Plan (2018-2021) (GhAIP 2018-2021))
Guinea	5.7%	Compared to the total cost of the NAIFNSP (2018 - 2025)
Guinea Bissau	4.9%	Relative to the total cost of PNIA / NAIP II (2015-2020)
Liberia	2.01%	Relative to the total cost of NAIP II
Mali	0.91%	Relative to the total cost of NAIP (2015-2025)
Niger	0.8%	Relative to the total cost of the 3N Initiative Plan of Action 2016-2020
Nigeria	1.34%	Relative to the total cost of NAIFNSP II
Senegal	9.25%	Relative to the total cost of NAIFNSP II (2018-2022)
Sierra Leone	--	No budget is indicated in NAIFNSP II.
Togo	--	No specific budget for the fisheries and aquaculture sector. But the NAIFNSP document emphasizes the development of fish farming (tilapia, shrimps, oysters) and the introduction of euryhaline species.
Mauritania	9.0%	Relative to the sector's contribution to the State budget (9%), FNS and poverty reduction.

* The percentage is calculated on the basis of the funds allocated to fisheries and aquaculture in the total budget of the NAIFNSP or equivalent documents.

5.1.2. ALLOCATIONS AND FUNDING REQUIREMENTS OF THE FISHERIES AND AQUACULTURE SECTOR

The analysis of financial resource allocations and needs is based on information available in sectoral planning documents (particularly for the rural sector) such as the NAIFNSP. Other information on the budgetary execution of Ministries in charge of the fisheries and aquaculture sector; and the current and prospective contributions of TFPs in financing programmes and projects in the sector are also used as much as possible. Given the very different contexts prevailing from one ECOWAS country to another, the analyses are summarized below by country.

For **Bénin**: the **Programmatic Framework for the Agriculture Sector** (2017-2021) is the first NAIFNSP operational implementation document, consisting of four components or framework programmes (agriculture, livestock, fisheries and aquaculture, steering and support to the sector). The total financing requirement of these four components amounts to CFAF 608,205,618,156, including CFAF **84,951,203,315**, or 14 percent estimated for the country's **fisheries and aquaculture programme** (see table 6). This total for the fisheries and aquaculture sector consists of CFAF **83,590,628,315 in investment costs and CFAF 1,360,575,000 in operating, personnel and transfer expenses**. Funding comes from the internal budget of the Ministry of Agriculture, Livestock and Fisheries (MAEP) and from projects financed by the TFPs.

Table 6: Financing requirements of the four agricultural framework programmes (in CFA francs).

Framework Programme	2017-2021	2017	2018	2019	2020	2021
Fisheries and aquaculture	84 951 203 315	10 281 011 050	18 395 032 375	18 805 968 680	18 676 882 868	18 792 308 342
Agriculture	256 436 579 403	28 216 362 200	62 209 731 065	68 736 314 984	57 156 626 092	57 436 438 729
Livestock	35 193 919 578	4 093 993 995	6 950 446 410	9 621 405 657	7 186 816 566	7 341 256 950
Guidance and support to the sector	315 817 835 438	62 641 285 667	66 395 974 350	68 690 852 978	62 892 270 382	62 137 874 063
TOTAL	692 399 537 734	105 232 652 912	153 951 184 200	165 854 542 299	145 912 595 908	145 707 878 084

Source: NAIFNSP agriculture sector programmatic framework (2017-2021) of Bénin.

For **Burkina Faso**: the second National Rural Sector Programme (PNSR / NRSP II), which represent the government's ambitions in terms of structural investments and strategic reforms as stated in the National Economic and Social Development Plan, has a total estimated cost of about CFAF 3,620 billion over the 2016-2020 period. Of this total, the estimated cost of the "Development of fisheries and aquaculture production" subprogramme is CFAF 17 539 million, or just 0.48 percent of the total cost of NRSP II. This subprogramme budget comprises capital expenditure, overall implementation costs (personnel and operating expenses) and current transfers. The cost of structural investments and strategic reforms amounts to CFAF 4.994 billion, of which CFAF 4.025 billion is for structural investments and CFAF 969 million for strategic reforms.

For the "Development of fisheries and aquaculture production" subprogramme, table 7 below shows the annual breakdown of: (i) financing requirements; (ii) financing already obtained; and (iii) financing still to be mobilized.

Table 7: Financing requirements for the subprogramme "Development of fishery and aquaculture production" (in thousands of CFA francs).

Costs	2016	2017	2018	2019	2020	TOTAL
Financing needs	1 940 709	1 688 876	3 929 162	4 823 207	5 157 606	17 539 560
Financing already acquired	1 940 709	1 553 129	3 790 467	4 675 668	3 587 992	15 547 965
Additional funding requirements	0	135 747	138 695	147 539	1 569 614	1 991 595

Source: ETN/NRSP II from DGESS data.

Under the financing agreements existing between the State of Burkina Faso and its development partners, funding for the "Development of fisheries and aquaculture production" subprogramme in NRSP II is estimated at CFAF 1.991 billion, or 11.4 percent of subprogramme's total financing requirements (see table 7 above). The necessary funding will be mobilized from the State, its partners and non-State actors. The second NRSP prioritizes food and nutrition security, enhancing the resilience of vulnerable populations, access to water and sanitation, and improved living conditions. This programme should thus make it possible to raise fish production from 20,950 tons in 2015 to 30,000 tons in 2020 (NRSP II, 2016-2020).

For **Guinea**: the financing requirements of the Ministry of Fisheries, Aquaculture and Maritime Economy (MPAEM) are estimated at **2,046 billion Guinean francs (GNF)**, or 5.6 percent of the overall cost of NAIFNSP (see table 8).

Table 8: NAIFNSP implementation costs per programme and category of actor (in millions of GNF)

Programme	Global	MA	MEPA	MPAEM	MEEF	Private
Productivity	26 776 871	9 987 461	1 140 421	999 626	1 048 927	13 600 436
Market access	2 559 753	1 369 976	278 670	178 898	173 897	558 312
Resilience and food and nutrition security	2 625 317	296 810	92 717	408 632	1 816 238	10 920
Human Capital	460 356	131 042	113 915	111 385	104 014	0
Governance	3 847 909	2 225 661	410 241	347 679	864 327	0
Total NAIFNSP	36 270 206	14 010 949	2 035 964	2 046 220	4 007 404	14 169 669
Share	100%	38.6%	5.6%	5.7%	11.0%	39.1%

Source: NAIFNSP (2018-2025) of the Republic of Guinea.

The domestic financing projection was based on the average of the 2016 and 2017 MPAEM budgets. Then, an inventory was taken of external financing (projects and programmes financed by TFPs at the MPAEM level) to estimate the overall volume of financing actually available over the period 2018–2025. Based on the estimated financing secured and implementation costs, the MAEP’s financing needs have been calculated for the period 2018-2025 considering two possible budget execution rates. The first hypothesis (low) assumes a budget execution rate of 75 percent, while the second (high) assumes a theoretical rate of 100 percent. The domestic resources likely to be available to the MAEP thus vary from GNF 314 billion to GNF 418 billion in 2018–2025 under the two hypotheses, respectively (see table 9).

Table 9: Estimated MAEP budget for the period 2018-2025 (in millions of GNF)

Projects and programmes	Domestic budget		Total acquired budget	
	Assumption 75%.	Assumption 100%	Assumption 75%.	Assumption 100%
93 479	314 000	418 000	407 479	511 479

Source: NAIFNSP (2018-2025) of the Republic of Guinea.

The total additional MAEP financing needs range between GNF 1.535 and 1.639 billion, representing 75 and 80 percent, respectively, of total MAEP financing needs for 2018-2025 (NAIFNSP 2018-2025).

For **Nigeria**: the National Agricultural Investment Plan (NAIP II) consists of three programmes (productivity improvement, private investment and institutional realignment) to be implemented in 2018-2020, and 10 subprogrammes including livestock, fisheries and aquaculture development. Table 10 below shows the total cost of the “Fisheries and Aquaculture Development” subprogramme and then compares it to the Government’s planned expenditure as specified in the activities of the Medium-Term Sector Investment Strategy (2017-2020).

Table 10: Estimated cost of NAIP II (2017-2020) and additional financing requirements for the fisheries and aquaculture sector, in thousands of Nigerian Naira (NGN).

Fisheries and Aquaculture Development Subprogramme / Project	Amount in thousands of NGN
Amount allocated to the project in 2017 - Approved budget	1 050 038
Amount required for the project in 2018	3 215 323
Amount required for the project in 2019	3 509 267
Amount required for the project in 2020	4 562 047
Estimated total amount for the project (2018-2020) (Funding needs)	11 286 637
Estimate 2017 x 3 in cumulative credits expected relative to 2018-2020 (amount secured)	3 150 115
Additional needs (funding gap)	8 136 522

Source: NAIP II of Nigeria.

Thus, for the 2018-2020 period of Nigeria’s NAIP II, the total financing requirement for the fisheries

and aquaculture sector has been estimated at NGN 11,286,637,000. The financing to be mobilized to enable the sector to achieve the objectives assigned to it in this NAIP II amounted to NGN 8,136,522,000 or 72.10 percent of total requirements. The additional funding needed will be raised from the private sector and the country's TFPs.

For **Mali**: the total cost of the National Agriculture Sector Investment Plan (PNISA) is estimated at CFAF 6,951,439,366,145 between 2015 and 2024. The total cost of the fisheries and aquaculture sector in this PNISA (2015-2025) is estimated at CFAF 63,448,500,000, or 0.91 percent of the total, distributed among the five PNISA programmes (see table 11).

Table 11: Financing needs of the fisheries and aquaculture sector in the PNISA (2015-2025) (in thousands of CFA francs)

Programme	Year										TOTAL
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Capacity building	1 585 750	1 155 750	1 155 750	1 175 750	707 500	897 500	707 500	687 500	707 500	687 500	9 468 000
Investments	3 979 000	6 343 000	6 175 000	4 279 000	4 343 000	4 245 000	4 277 000	4 145 000	4 277 000	4 145 000	46 208 000
Production and competitiveness	435 000	590 000	590 000	590 000	590 000	590 000	590 000	590 000	540 000	540 000	5 645 000
Research and training	559 000	259 500	559 500	258 500	73 500	323 500	23 500	23 500	23 500	23 500	2 127 500
TOTAL	6 558 750	8 348 250	8 480 250	6 303 250	5 714 000	6 056 000	5 598 000	5 446 000	5 548 000	5 396 000	63 448 500

Source: PNISA (2015-2025) of Mali.

The investment programme accounts for a large share of the financing needs of sector. These include the construction of infrastructures for aquaculture and for the processing and marketing of fishery and aquaculture products. The total amount of domestic and external financing already obtained for fisheries and aquaculture for the period 2015-2025 is estimated at CFAF 10,431,838,000. On this basis, the financing needs for the sector for the period 2015-2025 were estimated at CFAF 53,016,662,000, or 83.5 percent of total requirements. This financing gap will need to be mobilized from the private sector and the country's TFPs to give the expected results a chance of being achieved.



©FAO / Luis Costa. A fish seller receives money from a buyer in the Mindelo market (Cape Verde).

For **Cape Verde**: activities in the fisheries and aquaculture sector are conflated with those of the other agro-sylvo-pastoral sectors. It was therefore necessary to make a detailed budget breakdown of the NAIFNSP to be able to separately calculate the costs of implementing NAIFNSP activities linked to the fisheries and aquaculture sector. Table 12 below shows the costs of implementing these activities.

Table 12: Costs of implementing NAIFNSP activities in the fisheries and aquaculture sector (in thousands of Cape Verde escudos (CVE))

NAIFNSP activities in the fisheries and aquaculture sector	Year				TOTAL (2018-2021)
	2018	2019	2020	2021	
Promote small-scale fishing and value-added products	57 710	193 415	76 665	54 915	382 705
Reduce post-harvest losses from the current 30% to 20%.	2 500	2 500	12 500	2 500	20 000
Upgrade the quality and value of agro-pastoral and fishery products	86 000	157 000	55 000	2 500	300 500
Strengthen the action capacity of stakeholders	28 500	107 000	92 500	93 500	321 500
Promote ICTs in all parts of the fisheries value chain	0	1 500	3 000	0	4 500
Create technology parks for the incubation of adapted agro-pastoral technologies and promotion of the knowledge economy.	3 000	0	400	0	3 400
Promote farmer organization, microfinance, microinsurance and information communication technologies (ICTs) in value chains	3 000	0	0	0	3 000
Dissemination and implementation of the technology packages available to the fisheries sector	5 900	101 400	105 750	73 250	286 300
Ensure employment of the population, especially young people	575	5 875	975	875	8 300
Strengthen the national early warning system and food safety surveillance arrangements	31 250	37 250	32 500	32 500	133 500
Regulation of agro-sylvo-pastoral and fisheries legislation and strengthening of inspection services	1 500	0	0	0	1 500
Harmonize legislation on sector governance	2 500	0	0	0	2 500
Strengthen consultation frameworks	8 500	8 500	9 000	9 500	35 500
Strengthen institutional and stakeholder capacities for monitoring and evaluation.	36 000	47 350	40 000	40 000	163 350
TOTAL	266 935	661 790	428 290	309 540	1 666 555

Source: NAIFNSP (2018-2021) of Cape Verde

The financing needs of the fisheries and aquaculture sector in this NAIFNSP were thus estimated at CVE 1,666,555,000, or 5.0 percent of the total NAIFNSP budget, including the sector's operating and investment costs. The operating budgets allocated to the Marine Resources Administration for 2018 and 2019 are estimated at CVE **45,212,057** and CVE **56,803,208**, respectively (www.mf.gov.cv).

Table 13: Estimated funding needs for the fisheries sector (in CVE)

Type of financing	Year				Total (2018-2021)
	2018	2019	2020	2021	
Total funding requirements (F)	266 935 000	661 790 000	428 290 000	309 540 000	1 666 555 000
Financing already acquired (G)	241 004 745	236 066 636	272 485 690	272 485 690	1 022 042 761
Financing gap (H) = (F) - (G)	25 930 255	425 723 364	155 804 310	37 054 310	644 512 239

Source: Ministry of Finance/NAIFNSP of Cape Verde.

Based on the total financing requirements of the fisheries and aquaculture sector and the domestic and external financing already secured for the NAIFNSP implementation period, it is possible to calculate the sector's financing requirements. Thus, for the fisheries and aquaculture sector, a **funding shortfall of CVE 644,512,239** will need to be mobilized from the private sector and the partners of the Cape Verdean Government to ensure that implementation of this NAIFNSP can fully and effectively achieve the results and impacts expected of it, particularly in terms of promoting the fisheries sector in the country (see table 13).

For **Côte d'Ivoire**: the total cost of NAIP II was estimated at CFAF 4,325.41 billion over the duration of the Plan. This cost already includes the amounts obtained by the various departments involved in this NAIP II, including the Ministry of Animal Resources and Fisheries. Table 14 reports the estimated investments required, which may be more or less directly linked with the fisheries and aquaculture sector in Côte d'Ivoire.

Table 14: Estimated public investments related to the fisheries and aquaculture sector in the period 2018-2025 (in millions of CFA francs)

Subprogrammes	2018	2019	2020	2021	2022	2023	2024	2025	TOTAL (2018-2025)
Promotion of aquaculture and aquatic biodiversity	1 000	1 000	1 000	1 000	1 000	0	0	0	5 000
Reduction of post-capture losses	11 000	11 000	11 000	11 000	11 000	11 000	12 000	12 000	79 000
Improving the framework for processing agricultural, forestry, pastoral and fishery products	80	80	50	100	30	40	40	30	450
Capacity-building and awareness-raising among stakeholders on opportunities for transformation	1 200	4 000	4 000	4 000	4 000	4 000	2 000	2 000	25 200
Integrated water resource management	745	1 750	2 069	2 029	1 539	1 359	914	690	11 095
Plan for the preservation and protection of the aquatic environment	737	1 710	1 665	1 540	728	50	40	40	6 530
Combating illegal, unreported and unregulated (IUU) fishing in continental and lagoon waters	2 075	2 115	2 200	2 200	2 060	1 050	1 050	50	12 800
Strengthening of the governance of the agro-sylvo-pastoral and fisheries sector with a view to facilitating access to financing and private investment	90	950	1200	350	350	350	300	300	3 890
Facilitation of access to financing by actors in the agro-sylvo-pastoral and fisheries sector	750	3 000	4 000	4 000	2 000	800	200	200	14 950
Reinforcement of the organization of the actors and the structuring of the agro-sylvo-pastoral and fisheries sector.	400	400	400	400	300	200	150	150	2 400
Professionalization of the actors of the agro-sylvo-pastoral and fisheries sector	150	50	80	20	80	20	80	30	510
Control of statistical data on the agro-sylvo-pastoral and fisheries sector	70	15	15	20	65	20	20	20	245
Strengthening systems for promoting public-private partnerships (PPPs)	800	800	800	800	800	800	800	800	6 400
								TOTAL	168 470

Source: NAIP II (2018-2025) of Côte d'Ivoire.

Thus, the total cost of investments in the sector could be estimated at CFAF **168.47 billion** for the entire period of execution of Côte d'Ivoire's NAIP II, or **3.90 percent** of the total cost of the Plan. Due to the lack of information on the domestic private and external financing of the TFPs already acquired for the NAIP II execution period, it was impossible to estimate the financing needs of sector. However, there is a large external contribution of **CFAF 1 529 691 724** under the Fisheries Agreement between the EU and the Ivorian State in the form of support to the fisheries sector for the period 2018-2024.

For **Guinea Bissau**: the total cost of implementing the very long-term NAIP II (2015-2030) is estimated at CFAF 341 508 250 000. The costs of the components and actions concerning the fisheries and aquaculture sector are set out below in table 15.

Table 15: Estimated costs of actions related to the fisheries and aquaculture sector in the NAIP II of Guinea-Bissau (in CFA francs)

Component	Actions	Budget
Promotion of small-scale fisheries and aquaculture	Support for the development of small-scale fisheries and aquaculture	4 075 000 000
	Enhancement of catches and local processing of fish production	1 900 000 000
	Improvement of marketing channels and conditions	1 300 000 000
	Strengthening the capacities of actors in the sector and institutional support	2 300 000 000
	Support for the creation of a credit fund for the fisheries sector	5 000 000 000
Subtotal 1		14 575 000 000
Strengthening of fisheries resource management mechanisms	Strengthening of control mechanisms for the exploitation of fishery resources	1 450 000 000
	Upgrade of the Fisheries Information and Analysis System	875 000 000
Subtotal 2		2 325 000 000
TOTAL		16 900 000 000

Source: NAIP II (2015-2030) of Guinea-Bissau.

The total cost of the investments required for the sustainable development of the sector is estimated at CFAF **16.9 billion**. The contributions expected from the Government and from beneficiaries, together with the financial support expected from development partners are distributed as follows: 10 percent from the Government, 5 percent from the beneficiaries and 85 percent from the TFPs. The promotion and development of the fisheries and aquaculture sector depends heavily on investments supported by TFPs in Guinea Bissau.

For **Liberia**: the total cost of NAIP II (2018-2022) is estimated at **USD 554 463 800**. Its budget is developed based on the operational capacity of Liberia's agricultural sector and is designed to address key challenges and gaps in the sector to enhance FNS in Liberia. Investments allocated to the fisheries and aquaculture sector are estimated at **USD 11 150 000** (2.01 percent of the total cost of NAIP II). The annual breakdown of investment costs in this sector is shown in table 16 below.

Table 16: Estimated investments in the development of the fisheries and aquaculture sector (in US dollars)

Subprogramme	Year					TOTAL
	2018	2019	2020	2021	2022	
Development and promotion of fisheries and aquaculture	2 240 000	2 265 000	2 240 000	2 190 000	2 215 000	11 150 000

Source: NAIP II (2018-2022) of Liberia.

Three main sources of funding are envisaged for NAIP II: the Government of Liberia, bilateral donors/PTFs and the private sector.

For **Mauritania**: the 2015-2020 investment plan for the sustainable development of fisheries and aquaculture is shown in table 17. The strategic vision underlying this investment framework is to derive maximum sustainable benefits from the country's fisheries wealth for the benefit of the Mauritanian people, and to participate more actively in efforts to develop an inclusive Blue economy, a source of wealth and employment.

Analysis of the structure of the investment plan shows that the volume of financing to be mobilized for the “Integration of the sector into the national economy” accounts for 85 percent of the investment framework funding requirements).

Table 17: Investment plan for the development of the fisheries and aquaculture sector (in USD)

Components	2015	2016	2017	2018	2019	2020	Total
Component 1: Improving fisheries governance and sustainable management	9 531 375	19 896 034	28 226 034	14 779 625	6 315 250	3 066 000	81 814 317
Component 2: Increased integration of the sector into the national economy	43 977 372	114 241 952	131 924 952	105 994 885	97 309 928	69 913 745	563 362 833
Component 3: Human capacity-building	200 000	1 700 000	1 500 000	1 500 000	500 000	500 000	5 900 000
Component 4: Inland fisheries and aquaculture development	-	1 000 000	2 069 333	2 236 000	2 386 000	1 166 667	8 858 000
TOTAL	53 708 747	136 837 986	163 720 319	124 510 510	106 511 178	74 646 411	659 935 151

Source: Final report on the investment framework for the sustainable development of fisheries in Mauritania (2015-2020).

Furthermore, the assessment of the needs identified in the investment framework for 2020, relative to available resources, revealed a funding shortfall of around USD 537 million. With USD 134 million expected thus far, the current financing plan covers just 20.6 percent of the identified financing needs, sourced as follows: 33 percent government, 7 percent private sector (including public-private partnerships) and 60 percent development partners.

For **Niger**: the 3N Initiative Plan of Action 2016-2020 is the country’s NAIFNSP, the main objective of which is to achieve “zero hunger in Niger”. The key areas of intervention of this plan are: (i) control of water resources for agro-sylvo-pastoral and fisheries production; (ii) promotion of the agro-sylvo-pastoral and fisheries sectors and value chains; (iii) integrated and sustainable management of natural resources and environmental protection; (iv) reduction of vulnerability to food and nutritional insecurity; and (v) improvement of the institutional environment for implementing the 3N Initiative. Each area of intervention is broken down into strategic programmes and then into specific objectives of the Plan of Action logical framework. The total cost of all areas of intervention of the Plan of Action was estimated at CFAF 1,546.627 billion.

The total cost of the strategic programmes directly related to the fisheries and aquaculture sector is estimated at CFAF **12.032 billion**, or 0.8 percent of the total cost of the Plan of Action (*see table 18*). The implementation of other strategic programmes could also involve fishing and aquaculture communities; but a lack of precise information made it impossible to estimate the share of the costs of these programmes.

Table 18: Estimated costs of strategic programmes in the 3N Initiative Plan of Action related to the fisheries and aquaculture sector.

Strategic Programmes	Estimated costs per year (CFAF million)					TOTAL (2016-2020)
	2016	2017	2018	2019	2020	
Increase fisheries and aquaculture production	185	1 109	1 009	609	459	3 370
Improve conditions for the marketing and commercialization of fisheries and aquaculture products	45	533	458	458	458	1 950
Strengthen monitoring and advisory support to the fishery product sectors.	550	700	500	500	500	2 750
Collaborate with and mobilize fisheries sector stakeholders	7	45	270	420	7	739
Promote marketing infrastructures and modern processing units for fishery products.	300	600	700	750	820	3 170
Improving the regulatory framework for the fishing industry	15	5	17	3	13	53
TOTAL	1 102	2 992	2 954	2 740	2 257	12 032

Source: Action Plan 2016-2020 of Niger’s 3N Initiative.

The cost of investments through projects in FNS and the sustainable agricultural development sector currently amount to an estimated CFAF 1,003.645 billion, corresponding to an **overall mobilization rate of 65 percent of the 2016-2020 Action Plan of Niger's 3N Initiative**. Assuming this rate of mobilization also in the strategic programmes for fisheries and aquaculture, the **financing requirement for this sector would around CFAF 4.211 billion**.

For **The Gambia**: As this country's NAIFNSP II had not yet been finalized at the time of this diagnostic study, it was impossible to estimate the percentage share of fisheries and aquaculture sector investments in the total cost of the NAIFNSP II, as was done for the other ECOWAS Member States. The analysis is based on The Gambia's Fisheries and Aquaculture Sector Strategy (2017-2021) document. This presents the strategic pillars for the sustainable development of the fisheries and aquaculture sector, with estimates of the financing needed to achieve the planned investments in the sector from 2017 to 2021 (*see table 19*).

Table 19: Budget of The Gambia's Fisheries and Aquaculture Sector Strategic Plan (2017-2021) in Gambian Dalasi (GMD).

Strategic Pillar	Year					TOTAL
	2017	2018	2019	2020	2021	
Institutional restructuring, redesign and capacity building	2 304 000	2 987 750	1 422 750	922 750	922 750	8 560 000
Legal and policy reforms	575 000	-	-	-	-	575 000
Capacity-building and awareness-raising among key stakeholders	890 000	-	-	-	-	890 000
Cross-sectoral linkages and global value chain optimization	6 300 000	8 400 000	8 460 000	7 960 000	7 960 000	38 930 000
Collaboration and partnership	275 000	-	-	-	-	275 000
TOTAL	10 344 000	11 387 750	9 882 750	8 882 750	8 882 750	48 065 000

Source: The Gambia's Fisheries and Aquaculture Sector Strategy (2017-2021).

The total funding requirement for the Fisheries and Aquaculture Sector Strategic Plan (2017-2021) is estimated at GMD 48,065,000 or USD 969,032, with no discrimination between investments funded by the Government and those supported by the TFPs. However, compared to the National Agricultural Investment Plan 2011-2015, it is highly likely that bilateral or multilateral TFPs will be required to cover 65 percent to 75 percent of the financing needs for the implementation of The Gambia's Fisheries and Aquaculture Sector Strategy (2017-2021).

For **Senegal**: the estimated cost for the fisheries and aquaculture sector is USD 398,883,600, representing 9.25 percent of the total cost of the country's NAIFNSP II. This sectoral cost is broken down into capital expenses (USD 378,073,020) and operating expenses (USD 20,810,580). Funding comes from several sources: the State, local authorities, beneficiaries, private sector, NGOs and TFPs.

An analysis of the shares contributed by the various donors highlights the State's pre-eminent role in financing the investment plan: 56 percent of the financial resources needed to implement NAIFNSP II. More than a third of the necessary funds will have to be mobilized from other sources. For the fisheries and aquaculture sector, **41 percent** of the declared needs, or **USD 163,542,276** remain to be met.

For **Ghana**: The analysis is based on two documents: (i) the Ghana Agricultural Investment Plan (GhAIP 2018-2021); and (ii) the Medium-term Expenditure Framework 2019-2022 of the Ministry of Fisheries and Aquaculture Development of Ghana (MTEF 2019-2022). The total cost of GhAIP for 2019-2021 has been estimated at **9,123.67 million Ghanaian Cedi (GHS)**. As regards the expenditure programmed by the Ministry of Fisheries and Aquaculture Development for the same period, the budgets for each programme are shown in table 20 below.

Table 20: Programme budget of the Ministry of Fisheries and Aquaculture Development of Ghana (2019-2021) in GHS

Programme	Year			Total
	2019	2020	2021	
Administration management	48 247 558	48 224 013	48 224 013	144 695 584
Management of fishery resources	3 820 577	3 820 577	3 820 577	11 461 731
Aquaculture development	5 136 684	5 136 684	5 136 684	15 410 052
Fisheries monitoring, control and surveillance	1 505 286	1 505 286	1 505 286	4 515 858
Aquatic animal health and post-capture	882 344	882 344	882 344	2 647 032
TOTAL	59 592 449	59 568 904	59 568 904	178 730 257

Source: Medium-term Expenditure Framework 2019-2022 of the Ministry of Fisheries and Aquaculture Development of Ghana.

Thus, the expenditure planned by Ghana's Ministry of Fisheries and Aquaculture Development for 2018-2021 is estimated at **GHS 178.73 million** or **1.96 percent of the total cost of GhAIP** for that period (see table 5). It would also have been interesting to compare these medium-term expenditures with the planned capital costs in the sector. Unfortunately, however, this was impossible because the document of the Medium-term Development Plan (2018-2021) of the Ministry of Fisheries and Aquaculture Development (final version of September 2018) that was available for consultation does not contain an estimated budget for the planned investments (the budget table exists but is not provided in the document).



© FAO / Cristina Aldehuela. Women at the fish area inside the Kaneshie market in Accra (Ghana).

For **Sierra Leone**: the cost of investments is not indicated in the country's NAIFNSP II, which contains a detailed chart of budget components and subcomponents, but no investment costs (the category is empty). This made it impossible to analyse the investment needs of the fisheries and aquaculture sector for this country.

In the case of **Togo**: the structure of the NAIFNSP (2017-2026) does not distinguish investments linked specifically to promotion and development of the fisheries and aquaculture sector. The budget as presented in the NAIFNSP II document is broken down by strategic pillar without any details on the activities or actions in each pillar. Consequently, it was impossible to estimate the costs and investment needs of activities specifically related to the fisheries and aquaculture sector. However, the focus is on the development of fish farming (tilapia, shrimps, oysters) and the introduction of euryhaline species.

5.1.3. FUNDING FOR THE FISHERIES AND AQUACULTURE SECTOR IS STILL INSUFFICIENT TO CONTRIBUTE EFFECTIVELY TO FNS

- From the government's annual budget trade-off:

Budgetary trade-off is an annual exercise undertaken by the governments of ECOWAS member States to allocate funding to their public sectors, based on the capital and operating budgetary needs of the Ministry responsible for the sector in question. The budget allocated for fisheries and aquaculture sector development is one of the smallest, covering less than 30 percent of the sector's real needs to enable effective implementation of national fishery and aquaculture policies that would make it possible to achieve FNS objectives in ECOWAS Member States. One of the main causes of this situation could be related to the chronic lack of reliable data and information collected and analysed on the importance of the sector for FNS and poverty reduction among populations in West Africa. The lack of an effective information system and operational monitoring of this input from the sector makes it impossible to assist policy decisions in favour of fisheries and aquaculture in national budgets.

- From technical and financial partners:

As can be seen in the foregoing analyses of investment needs, the development of the fisheries and aquaculture sector in ECOWAS Member States and Mauritania depends on external programmes and projects financed by TFPs for 60 percent to 70 percent of its funding. Over the last ten years, an estimated 100 programmes and projects, directly or indirectly related to the fisheries and aquaculture sector, have been developed and implemented by TFPs in West Africa. However, the lack of financial or in-kind mobilization of the national counterpart could make achieving the objectives of these programmes and projects uncertain in several States.

Some NGOs, especially international ones, actively mobilize funding for the fisheries and aquaculture sector in West Africa. However, the investments made by these NGOs in the field are not effectively monitored by the national sector authorities. It is therefore impossible to assess their impact on FNS and poverty reduction among the populations of the coastal communities on whose behalf this donor funding is mobilized.

- From the private sector:

In the absence of an adequate monitoring system, it is very difficult to assess the level of investment by the private sector (economic operators, professionals, etc.) in the sustainable development of fisheries and aquaculture in West Africa. Economic operators who invest in the sector do so in a very piecemeal manner and do not publicize it.

5.1.4. MONITORING AND EVALUATION OF THE IMPLEMENTATION OF NATIONAL POLICIES.

National fishery and aquaculture policies and strategies are poorly implemented in West Africa, owing to factors that were explained earlier, in the section on policy implementation capacity. In some countries, such as Côte d'Ivoire (which has a strategic plan for livestock, fisheries and aquaculture development), the strategy has a well-designed institutional mechanism for its implementation and monitoring-evaluation. Nonetheless, the lack of financial and human resources to make it operational is a major constraint on the effectiveness of such a mechanism.

The NAIP II subprogrammes that are directly or indirectly related to the fisheries and aquaculture sector aim to increase the sector's productivity and output, in order to increase the availability of fishery products for the community's populations and improve access to them. However, insufficient financial mobilization to implement the corresponding investments means that the expected results will not be fully achieved, which will undermine FNS in the populations concerned.

The **gender dimension** has not been highlighted in the preparation of Agricultural Investment Plans or other Fisheries and Aquaculture Sector Development Plans in ECOWAS Member States, except in Senegal where the NAIFNSP gives a gender breakdown of investment costs by programme.

6. Political Economy Analysis

What are the political economy factors that may prevent the adoption and/or implementation of the right set of measures, actions, and implementation mechanisms to eradicate hunger, food insecurity and malnutrition by 2030?

6.1. Considerations on political economy factors hindering the contribution of fishery and aquaculture policies to FNS in the ECOWAS zone.

In West Africa, the formulation, adoption, implementation and monitoring-evaluation of a national and/or regional fishery and aquaculture policy are likely to be influenced by several domestic and external political economy factors, in a dynamic environment sometimes involving different and conflicting interests among stakeholders. This part of the diagnostic study attempts to analyse the main factors that could hinder the effective implementation of national fishery and aquaculture policies. It will help to identify and understand the “driving and guiding forces” in political, financial and technical decision-making to enhance the effective contribution made by the fisheries and aquaculture sector to the eradication of hunger, food insecurity and malnutrition by 2030. In addition to the analyses made in earlier parts of this study, this section discusses some of the main political economy factors in the fisheries and aquaculture sector in West Africa.

6.1.1. INADEQUATE NATIONAL FINANCIAL AND HUMAN RESOURCES FOR THE SECTOR

The fisheries and aquaculture sector in West Africa still suffers from a lack of political clout. In particular, the importance of artisanal fisheries is not taken into account in the formulation of policies and strategies focused on FNS, social protection, the environment, etc. The sector remains in a state of flux, characterized by limited resources, a chronic information deficit and a lack of effective integration into national development strategies, such as on food and nutrition security. The financial resources allocated to fisheries and aquaculture in government budget trade-offs are among the lowest, not exceeding 30 percent of the funding requirements expressed by the ministerial department in charge of the sector’s sustainable development.

Moreover, mobilizing this already insufficient sectoral budget is also very difficult in some Member States, owing to the corruption of certain officials disguised as red tape in the national institutions in charge of the State’s public finances (Ministry of the Economy and Finance and Ministry of the National Budget). It is important to note that the sectoral budget appropriation is essentially spent on operating the agencies and departments in charge of fisheries and aquaculture (wages, office equipment and consumables, fuel, maintenance of administrative vehicles, etc.). Investments for development programmes in the sector are not included in the national funding allocated to the sector. Nonetheless, the sector generates significant financial resources for the country through fishery agreements (with the EU, China, Russia, South Korea, etc.), the sale of private fishing permits and other financial royalties. Part of this is destined for use by the public authorities to make useful investments for the sustainable development of the sector and to improve its contribution to FNS and poverty reduction, especially for vulnerable populations. This is the case of several fishery agreements between the EU and certain ECOWAS Member States, including Cabo-Verde, Côte d’Ivoire, Guinea and Guinea Bissau.

The quantity and quality of the human resources responsible for ensuring harmonious development

of fisheries and aquaculture in ECOWAS Member States are important in the implementation of FNS actions. Indeed, in most States, between 60 percent and 70 percent of civil servants or government agents are concentrated in the sector's ministries and central services, which are situated in the capital. In contrast, just 30 percent are located in the rural coastal marine and riverside areas where there is a real need for civil servants to supervise, support and monitor the sector's local development activities.

Moreover, the technical capacity of civil servants and government officials to address the problems facing the fisheries and aquaculture sector is insufficient, especially in the decentralized localities (rural marine coastal and riparian areas and watersheds). Thus, the meagre financial resources allocated to the sector means insufficient capacity to design and plan programmes and projects to mobilize the funds needed for basic investments in the fisheries and aquaculture sector. There is also a real lack of national capacity for scientific research (lack of personnel, low status, skills drain, etc.), and insufficient collaboration between research, central government and fisherfolk for the production of scientific advice, knowledge and relevant information that would enable policy-makers to take informed decisions.

6.1.2. HEAVY RELIANCE BY THE FISHERIES AND AQUACULTURE SECTOR ON EXTERNAL FINANCING

The financial analysis performed above (cf. 6.1.3.) showed that the fisheries and aquaculture sector in the ECOWAS zone and Mauritania relies heavily (up to 70 percent) on external financing through the programmes and projects funded by TFPs and NGOs. About 100 programmes and projects have been implemented in the fisheries sectors over the last ten years in West Africa, involving relatively large financial investments. However, only a very few have been successful in terms of outcomes and impacts on the sustainable livelihoods of local fishing communities. The lack of agreed monitoring and evaluation mechanisms to measure the real impacts of these programmes and projects on FNS, on poverty alleviation and on the sustainable management and exploitation of fishery resources (fisheries and aquaculture) is currently a major limitation of the initiatives taken in the sector. Similarly, the projects and programmes lack a strong and sustainable institutional anchor to sustainably influence national policies and fishery practices in West Africa. In the absence of substantial political support and real involvement by governments, intergovernmental organizations of the region (ECOWAS, WAEMU, SRFC and WECAFC) and stakeholders at the grassroots level, and without coordination among development partners, the success of these programmes and projects is limited or even non-existent.

Most of these programmes and projects are designed and developed outside the countries in which they will be implemented; and they are considered "turnkey" initiatives that have not been subject to real consultation with stakeholders, including those often considered as the "final beneficiaries", i.e. the fishing and aquaculture communities and the country itself. Thus, the lack and/or inadequacy of the financial capacities of countries to implement their national fishery and aquaculture policies and strategies gives free rein to proliferate interventions through programmes that are mutually inconsistent and sometimes even in contradiction with the objectives assigned to national policies.

6.1.3. CONFLICTING AND SOMETIMES CONFLICTING INTERESTS BETWEEN ACTORS IN THE SECTOR

- **Economic rent extracted from the sector versus the populations' FNS:**

Differences of interest in the objectives of national fishery and aquaculture policies and strategies are political-economy factors that can compromise the sector's contribution to FNS in West Africa. Some

countries, such as Mauritania, Guinea Bissau and Côte d'Ivoire, while considering food security as important in their policies, still prioritize the economic rent derived from the fisheries sector for government financing, rather than ensuring the supply of fish and other fishery products to the national market. However, in October 2013 Mauritania implemented a national strategy to improve the availability and accessibility of fish, to strengthen FNS among its populations, by creating a national fish distribution company (SNDP). The positive effects of this have not yet been evaluated on the level of fish consumption in Mauritania, which remains one of the lowest in the region, at 6 kg/year/per capita (see table 2).

- **Fish processed into livestock feed meal versus fish for human food and nutritional safety**

Small pelagic species (sardinella, bonga shad, horse mackerel and related species) are the fish most widely consumed in West Africa because they are available and accessible to the majority of the population. This makes them an important source of animal protein and micronutrients (minerals and vitamins) for the FNS of the region's populations. However, in recent years, foreign firms have been setting up fishmeal production plants in some West African countries, mainly using small pelagic species.

Every year since 2010, between 200,000 and 300,000 tons of pelagic fish (sardinella) previously destined for human consumption in Nigeria, Côte d'Ivoire, Ghana and other countries in West Africa has been diverted to these fishmeal manufacturing plants. There were five such plants in 2010 and 29 in 2016; and since 2017, 40 authorizations have been signed by the Governments of Mauritania, Senegal and the Gambia. The factories in question are financed by Turkish, Chinese, Moroccan and Russian capital. More than 200,000 tons of sardinella processed into fishmeal deprives 40 million West Africans of 5 kg of quality fish per person per year (<http://peche-dev.org/spip.php?article181#>). Governments and the private firms concerned justify this activity as a source of job creation, but in reality, it drastically reduces the availability of these widely accessible fish for human consumption, which seriously undermines the FNS of the populations of West Africa.

- **Importance of artisanal versus industrial fishing**

Artisanal fishing, both marine and inland, accounts for more than 70 percent of fish production in West Africa, of which almost 95 percent is for human consumption. However, barely 10 percent of industrial fishing catches reach the consumer's table in West Africa. This clearly indicates the importance of artisanal fisheries for FNS and poverty alleviation, especially in the coastal countries of ECOWAS. Unfortunately, artisanal fisheries do not yet benefit from national policies and strategies that provide support commensurate with their role in supplying markets, in order to make fish available and accessible to the vast majority of local populations. The importance of artisanal fisheries is still underestimated because their catches are not correctly reported, and the income they generate is not fully accounted for. Consequently, their economic and food importance never appear in the country's official statistics. This explains why small-scale maritime and inland fisheries are not considered as economic subsectors worthy of the name; and the fact that they provide animal proteins necessary for nutritional health is not sufficiently recognized. Thus, small-scale fishing does not benefit from the same level of investment as its industrial counterpart. In addition, conflicts also arise between artisanal maritime and industrial fishing owing to incursions by industrial vessels, sometimes with the complicity of the authorities, into areas reserved for artisanal fishing in some ECOWAS member States. This harms artisanal production which, as noted above, is wholly destined for human consumption and thus contributes to the FNS of local populations.

Based on the foregoing analysis of the main political economy factors, it is clear that the effective implementation of national fishery and aquaculture policies and strategies in ECOWAS Member States depends heavily on external investments through programmes and projects developed and implemented by TFPs that pursue their “own hidden agendas”. These are not often aligned with national policy objectives, which themselves differ from one country to another. Moreover, the pursuit, sometimes with the complicity of government agents, of economic gains from fishery resources to the detriment of human consumption seriously undermines the sector’s contribution to FNS among the respective populations. It is therefore imperative to work towards the development and adoption of a common endogenous and regional framework that would encourage and make it easier for Member States to mobilize domestic resources and more effectively steer external investments towards enhancing the contribution of the fisheries and aquaculture sector to FNS, in an effective and sustainable manner. With political assistance from the FIRST Programme, the ECOWAS Commission is currently working to create a policy environment suitable for the development and adoption of a regional fishery and aquaculture policy within a common endogenous regional framework, to improve the integration of food and nutrition security concerns and thus ensure effective implementation of national fishery and aquaculture policies and strategies in West Africa.

7. Policy Realism

Considering the above analysis, what is the realism/credibility of the current set of policies and strategies?

Given the difficulties in mobilizing the domestic resources required, national fishery and aquaculture policies and strategies are unrealistic, and reliance on external funding for up to 70 percent for their implementation significantly undermines their credibility in ECOWAS Member States. This section reviews some of the main challenges that need to be addressed to enhance the realism and credibility of policies and strategies in the fisheries and aquaculture sector to ensure their contribution to FNS and poverty reduction among local populations.

The main challenges to be addressed to enable national fishery and aquaculture policies and strategies to contribute effectively and sustainably to the FNS of local populations in West Africa include the following:

- **Effective integration of food and nutrition security issues into national policies and strategies:**

Food and nutritional security is one of the specific objectives of all current national fishery and aquaculture policies of ECOWAS Member States and Mauritania. Yet, this specific objective is not clearly translated into strategic pillars or specific actions to achieve it. Activities that address the availability, accessibility, use and stability of fish supplies for local populations are very weak and sometimes absent from the action plans of national fishery and aquaculture policies. Taking these four dimensions of food security into account and translating them into practical actions remains a major challenge for enabling the fisheries and aquaculture sector to contribute to food security among West African populations.

- **Strengthening integration of the fisheries and aquaculture sector into the national institutional and organizational framework for steering FNS:**

In some ECOWAS Member States, the analysis revealed the weak integration of the fisheries and aquaculture sector in the institutional and organizational frameworks responsible for promoting FNS in the different countries, and sometimes its total absence. However, the multidimensional nature of FNS requires integrated and complementary actions among the different structures involved at the local, national and regional levels. The weak integration of the fisheries and aquaculture sector into institutional and organizational frameworks is a major challenge for enabling the sector to play a full role in support of FNS. Another challenge is the lack of visibility of the fisheries and aquaculture sector in the NAIFNSPs, which are the single national frameworks for mobilizing domestic and external funding from Member States to support FNS in the various populations. The NAIFNSPs are implemented by several ministerial departments with different concerns; integration of the fisheries and aquaculture sector would enable better coordination and synergy of actions to achieve sustainable FNS in West Africa.

- **Population awareness-raising and communication on the nutritional value of fish for a balanced diet:**

The role of fisheries and aquaculture in improving nutrition is increasingly recognized around the world. For example, it is estimated that a 150-gram serving of fish provides about 50 percent to 60 percent of an adult's daily protein requirements. However, while the true nutritional value of fish in the daily diet is recognized by specialists, it is largely unknown and/or underestimated by the overwhelming majority of people in West Africa. Greater awareness-raising and communication with the general public and policy makers on the importance of fish for FNS is needed in national fishery and aquaculture policies and strategies. Raising awareness generally, and especially among political decision-makers, and developing a genuine strategy to communicate the importance and role of fish in nutritional health, remain major challenges for improving the contribution made by the fisheries and aquaculture sector to FNS in West Africa.

- **Monitoring and evaluation of national fishery and aquaculture policies and strategies:**

The total absence of monitoring-evaluation mechanisms and performance indicators in the implementation of national fishery and aquaculture policies and strategies makes it impossible to evaluate the sector's real contribution to the FNS of populations in ECOWAS member States. This absence is also seen in many of the programmes and projects developed and implemented in the sector. Given this situation, it is difficult and sometimes impossible to assess the real results and/or impacts of these programmes and projects on the achievement of national policy objectives, such as harmonious development of the sector in terms of increasing the availability and accessibility of fish in West Africa.

The absence of a monitoring-evaluation mechanism also compromises the accountability of the various categories of actors (government agents, artisanal and industrial fisherfolk organizations, women, NGOs, TFPs, etc.) vis-à-vis the populations. It fails to define and assign individual and collective responsibilities in the effective implementation of national fishery and aquaculture policies.

- **Private investment remains insufficient to support the sustainable fisheries and aquaculture sector development:**

It is important to recall here that fisheries and aquaculture are also based on private economic activities that need private investment to enable the sector to continue creating wealth and help the country to make fish available to its people. Despite the importance accorded to the sector in economic and strategic planning documents, private investment is still insufficient to sustain this economic activity in West Africa. For example, secure access to land, to water and to bank guarantees creates an environment that could encourage thousands of young people to engage in aquaculture and fishery activities (along the value chain), to provide employment for young people and meet the growing demand for fish for a population that is still growing relatively fast. The creation of such a favourable and attractive environment for private investment, together with approaches based on public-private partnerships, remain challenges in most ECOWAS Member States.

8. Priority areas for investment

Considering the above analysis and given a scenario of continued resource and capacity constraints, what areas of the policy framework and what implementation gaps should be prioritized for resource allocation?

8.1. Priorities for improving the contribution of the fisheries and aquaculture sector to FNS in West Africa.

The analyses performed and the results obtained in the earlier parts of this study make it possible to identify, under a financial constraint and limited capacities scenario, the priority areas for the effective implementation of national policies and strategies, with a view to improving the contribution of the fisheries and aquaculture sector to FNS in ECOWAS countries and Mauritania.

8.1.1. ESTABLISHING AND/OR STRENGTHENING ACTIONS TO ACHIEVE THE SPECIFIC FNS OBJECTIVES OF NATIONAL POLICIES AND STRATEGIES

All national fishery and aquaculture policies have specific objectives that include enhancing the sector's contribution to FNS among the various populations. However, practical actions in favour of the four dimensions of food security are virtually absent from the implementation of these national policies. Priority actions could include the following:

Increasing the availability of fish for all: The availability of fish for the FNS of the population can be significantly improved by increasing the quantity and quality of national fish production through (i) gradually stopping fish discards and reducing post-harvest losses and wastage at all stages of the value chain; (ii) immediately halting, through robust political decision, the establishment of fishmeal processing plants in the region to produce animal feed at the expense of human consumption; (iii) securing and enhancing protection for small-scale maritime and inland fisheries, where nearly all production is destined for consumption by local populations; and (iv) making it compulsory to land a certain percentage of catches under fishery agreements with third countries (for example, industrial pelagic fishing agreement).

Improving access to fish for all: the physical, economic and social access to fish, especially among populations living in remote, isolated and landlocked areas, can be improved through public and private actions, such as the following: (i) the creation and/or strengthening of national public-private partnership mechanisms to distribute fish throughout the country; and (ii) the improvement of intra-regional trade in fish and other fishery products through the elimination of tariff and non-tariff barriers, the effective fight against cross-border customs and police harassment and the respect of the Treaty on the Free Movement of Goods and Services adopted by all ECOWAS Member States.

Improving the use of fish for all: utilization could be improved through the following actions: (i) make fish an essential component of FNS strategies, policies and programmes, including nutrition interventions, paying special attention to promoting fish as a source of good protein and micronutrients; (ii) undertake appropriate awareness-raising and communication activities to encourage the fish consumption of by mothers and children and in school meals; and (iii) improve knowledge on the impact of fish consumption on nutrition, including through the collection of intra-household and gender-disaggregated data in West Africa.

Improving the stability of fish supply for all: stability in the availability, accessibility and use of fish should be based on participatory and inclusive governance of all actors in the fisheries and aquaculture sector through: (i) the establishment and/or strengthening of effective and transparent collaboration between the different groups of actors in the application of measures and regulations for the harmonious development of the sector at national and regional level; (ii) the elimination of harmful subsidies that encourage overfishing (such as subsidies for outboard motors, canoes) and their redirecting towards public-interest investments that support the contribution of fish to FNS and the diversification of activities; and (iii) the integration of climate-change adaptation into fishery and aquaculture policies to address present and future impacts on FNS, particularly in the most vulnerable areas.

8.1.2. THE DEVELOPMENT OF SUSTAINABLE AQUACULTURE TO IMPROVE THE AVAILABILITY OF FISH FOR ALL IN WEST AFRICA

Actions to foster sustainable aquaculture in the West African context must continue, as this activity remains below its real potential in most ECOWAS Member States. Obstacles that need to be significantly reduced or overcome include: (i) production-related constraints (access to land, water, fry, food and especially credit); (ii) marketing-related constraints (product standards and quality, marketing, market access, communication); (iii) research into alternatives to fishmeal in aquaculture feeds; and (iv) promotion of herbivorous species, domestication and genetic improvement, and integration into agro-ecological production models on farms and in the landscape.

The removal of these constraints will surely enhance the sustainability and productivity of aquaculture and its contribution to the various dimensions of FNS, in both small- and large-scale systems, while respecting the integrity of the ecosystems exploited in West Africa. The ECOWAS Commission could set conditions for developing and implementing collaboration to encourage knowledge sharing and learning from aquaculture experiences among its Member States.

8.1.3. STRENGTHENING THE GENDER DIMENSION IN THE FISHERIES AND AQUACULTURE SECTOR

Reducing gender inequalities is very important for the contribution of the fisheries and aquaculture sector to FNS in West Africa. Efforts must continue to support actions already under way in national gender policies, investments, programmes and projects to promote equality in fishing and aquaculture rights systems, including equitable access to fishery resources and raw materials, different credit systems, including microcredit, etc. In West Africa, women are particularly responsible for post-harvest activities, throughout the fisheries value chain, such as fish trading, processing, transport, distribution and retailing (fishing and aquaculture). Thus any action to reduce gender inequalities will make it possible to improve the performance of the fisheries and aquaculture sector for the FNS of the populations.

8.1.4. STRENGTHENING THE TECHNICAL AND HUMAN CAPACITIES OF THE FISHERIES AND AQUACULTURE ADMINISTRATION IN ECOWAS MEMBER STATES:

This diagnostic study has highlighted the fact that most fisheries and aquaculture administrations in ECOWAS Member States need technical capacity building to effectively implement national fishery and aquaculture policies and strategies. However, in-depth and detailed assessments of capacity-building and training needs in each country's administrations are required as a first step, in order to develop capacity-building programmes tailored to the needs identified.

The universities and higher education colleges that are currently operating in the region should be used to implement these capacity-building programmes, which should take food and nutrition security issues into account.

9. Conclusion

The analysis made of the effectiveness of national fishery and aquaculture policies and strategies in ECOWAS Member States and Mauritania has shown overall that their implementation faces with problems related to the low level of domestic funding allocated. This is compounded by their heavy dependence on external financing through TFP programmes and projects in which the objectives are not always aligned with those of national policies. Thus, the attractiveness of the sector will have to be improved by establishing a much more favourable environment for private sector investment in fisheries and aquaculture, given the substantial investment gaps highlighted by the financial analysis of the various national fishery and aquaculture investment plans. The sector's share in the State budget is also expected to increase, as it does not reflect the importance accorded to the sector in national development policy and strategic planning documents. This meagre budgetary appropriation is one of the main factors making policies in West Africa less effective. Moreover, despite the efforts of Member States, the fisheries and aquaculture sector still faces challenges such as weak participatory governance, low human and technical capacity, persistent IUU fishing, low levels of aquaculture production, high post-harvest losses, etc., which detract from the sector's contribution to the FNS among the different populations, especially in marine and river coastal communities.

Thus, aside from current funding and capacity constraints, and as part of medium and long-term strategic planning, the governments of ECOWAS Member States, the private sector and TFPs should strengthen actions to:

- Modernize and protect artisanal and coastal fisheries (both maritime and inland) to make them sustainable, with a strong focus on FNS, poverty alleviation and the equitable and sustainable use of fishery resources. Modernization should go hand in hand with good management through better equipment, improved approaches, etc.
- Support small and medium-sized aquaculture enterprises (aquabusiness).
- Promote public-private partnerships (PPPs) to develop processing infrastructure, value chains and trade in fishery and aquaculture products.
- Improve data collection and information on fish consumption and the nutritional status of the different populations.

These measures have all been identified as priorities for the future ECOWAS regional fishery and aquaculture policy. If these actions are implemented in a concerted and participatory manner involving all stakeholders, the sector will be able to make a sustainable contribution to FNS among West African populations.

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