The State of Artisanal Fisheries in West Africa in 1997

1. Mauritania
2. Senegal
3. Cape Verde
4. The Gambia
5. Guinea Bissau
6. Guinea
7. Sierra Leone
8. Liberia
9. Côte d’Ivoire
10. Ghana
11. Togo
12. Benin
13. Nigeria
14. Cameroon
15. Equatorial Guinea
16. Gabon
17. Sao Tome and Principe
18. Congo
19. Zaire
20. Angola
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THE VISION FOR IDAF PHASE III

INTRODUCTION

Development strategy during the 1960 and 1970s was based on the philosophy that developing countries lacked improved technology and capital for speeding up their development. Industrialization was promoted in order to capitalize on the abundant fish resources. However, the anticipated expansion of the economy did not happen and the development approach shifted towards an integrated rural strategy where emphasis is put on the community as a whole to upgrade incomes and the quality of life through technical assistance and the active participation of fisherfolk and the community.

In this context, emphasis was initially placed on the Community Fishery Centre (CFC) concept as a means of promoting artisanal fishery development. But it became apparent that the presence of a complex of facilities and services tailored to meet local needs was no guarantee that the structures/facilities would be used or that development would occur. The active participation of fisherfolk and the mobilisation of local and community resources was imperative in order to assure sustainability of initiatives undertaken by development projects and/or the community.

So far and in general terms, the IDAF Programme has worked under the context of abundant or seemingly adequate fishery resources with moderate population pressure. The scenario is however changing (and very fast for that matter) and we would soon face the triple constraints of reduced or depleting fish stocks, degrading environment and increasing population pressure. Like in other sectors, it must be anticipated that just to survive, parts of the population surplus in the fishing communities will enter the artisanal fisheries, which will increase the competition for the resources among the small scale fisherfolk in addition to the prevailing competition between the artisanal and industrial fisheries, with their attendant effect on the environment.

This scenario calls for a continuation of the integrated participatory strategy which remains relevant to the development of artisanal fisheries in West Africa. However, the emphasis needs to be placed on the elements and mechanisms that favour the sustainability of initiatives: responsible fishing, the empowerment processes that ensure the devolution of major resource management and development decisions to the local community, the strengthening of national human and institutional capacities at all levels for a sustainable and equitable fisheries resources management and development, as well as in the follow-up and consolidation of past achievements.

DEVELOPMENT OBJECTIVE

Thus the development objective of the Programme in the present phase III which started on 1 July 1994 is to ensure twenty coastal West African countries a sustainable development and management of their artisanal fisheries for maximum social and economic benefit of their fishing communities in terms of employment, proteins and earnings. This will be done through an integrated and participatory approach in which emphasis will be laid on equity, gender issues, the transfer of technology for development, environment protection, as well as the strengthening of human and institutional capacities.
The immediate objectives are:

1. To identify, assess and disseminate strategies and mechanisms for sustainable management and development of the artisanal fisheries in fishing communities;

2. To improve the competence of national Fisheries Departments staff in development and management planning of artisanal fisheries;

3. To enhance regional technical competence in the fisheries disciplines, particularly in fishing and fish technology;

4. To improve information and experience exchange related to artisanal fisheries within the region;

5. To promote regional and sub-regional collaboration for the development and management of artisanal fisheries

In this context, IDAF will among other things tackle the following major aspects in its work:

- assisting in the elaboration and implementation of a clear and coherent national development policy for the artisanal fishery sector;
- providing advice on management and allocation of resources between artisanal and industrial fishing fleets, both national and foreign;
- involving users in the design and management of on shore infrastructures;
- monitoring the sector's evolution by the setting up of an economic indicator system for the sector adapted to the financial and human availabilities;
- improving fishing technologies in accordance with the available resources;
- increasing the final product's value by improvement in processing and marketing;
- promoting community development in accordance with the lessons learned from Phase I and II and oriented towards the sustainability of actions undertaken;
- reinforce the Programme's information/communication system.

It is anticipated that by the end of the third phase of the Project, the region will have a nucleus of field oriented experts capable to respond to the challenges of the artisanal fisheries sector and to spur development in their individual countries in keeping with the aspirations and needs of fisherfolk.
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List of IDAF Technical Reports
For the fifth consecutive year since 1993, the Programme for Integrated Development of Artisanal Fisheries in West Africa (IDAF) publishes a report on "The State of Artisanal Fisheries in West Africa". The aim of this document is to give a synthetic but reasonably complete overview of recent trends in the sector, as well as of opportunities and constraints faced by the artisanal fishing communities in the region.

The present revision is essentially based on annual reports prepared by IDAF Liaison Officers and results of field works carried out by the Programme's staff in the region.


Obviously, it is impossible to present all the data available on the artisanal fisheries sector of twenty countries in a working document. That is why preference has been given to the presentation of information in the form of figures or tables. To better grasp the similarities and differences from one country to another, and therefore facilitate analysis, the countries are generally listed in the tables and figures according to geographical, and not alphabetical order.

The quality of statistical data on fisheries, and particularly artisanal fisheries, still needs to be improved. First, regarding stock assessment, catches estimates and fishing effort, then, regarding socio-economic information: costs and earnings, capital and labour remuneration, added value etc. It is to be noted, however, that since the first edition in 1993, serious efforts have been made to improve the monitoring of the sector.


Great efforts were made to improve data on artisanal fisheries through the installation of a standardized system based on the ARTFISH software, a statistical data processing programme developed by FAO. The system was recently installed in Benin, Togo, Cote d'Ivoire, Gabon, Angola, and Sao Tome and Principe. Other countries, The Gambia, Senegal, and Cameroon, plan to have it installed in 1998.

Finally, a Working Group on the studies of the costs and earnings of artisanal fisheries was constituted in 1995. Its members planned and successfully undertook a 12 month survey on costs and earnings of major types of artisanal fishing gears in nine countries in the region (Mauritania, Senegal, The Gambia, Guinea, Cote d'Ivoire, Ghana, Ghana, etc.).
Benin, Nigeria, Cameroon). These studies which were limited to fish production, were continued in 1997 through surveys on costs and earnings in fish processing and marketing in Cote d'Ivoire, Nigeria and Guinea.

In order to promote a regular monitoring of artisanal fisheries in the countries of the region, a global framework was elaborated by the Programme (Annex 2).

However, there is a fear that the budgetary constraints of the states in the region which limit the financial and human resources available to fisheries administrations, might have a negative effect on the collection, compilation and analysis of statistical data in artisanal fisheries.

Some of the data presented here are not available in any official publication. This is the case of artisanal fisheries production estimates. Official statistics provided by the countries and published by FAO are arranged according to fishing zones, fish species and the nationality of the vessels by flag. Estimates of industrial and artisanal production are then gathered and officially published. The process is the same for the estimates of total catches in the IDAF region, not found elsewhere. In actual fact, this area which extends from Mauritania to Angola does not constitute an FAO statistical division for fisheries. The closest statistical division is the Division 34, CECAF, which extends from the Straits of Gibraltar to the Democratic Republic of Congo. As for Angola, it is included in Division 47. It has thus been necessary to reorganize the data to give the most reliable picture of fisheries in the region covered by the Programme.

All this therefore requires the analyst to be careful in interpreting figures. It is rather a question of showing the order of magnitude and trends.

This document is divided into four chapters. The first presents the general socio-economic context of the fisheries sector. The second gives the most recent data available on the different components of fisheries. The third chapter presents institutional aspects. Finally, the fourth chapter briefly describes national and regional projects executed through foreign assistance.
1. GENERAL CONTEXT

1.1 Population

The population of the region reached 248.4 million inhabitants in 1995. Six countries have about one million inhabitants or less. They are: Cape Verde, The Gambia, Guinea Bissau, Equatorial Guinea, Gabon and Sao Tome and Principe (Tab. 1).

In all the region's countries, the population growth rate remained very high these past years. Between 1990 and 1995, it exceeded 2.5% per year in almost all the countries and equalled or exceeded 3% in nine of them. In such conditions, the region's population will double in 25 years. In most countries, it was observed that those who were less than 15 years old in 1996 represented between 45 and 50% of the total population. This figure is to be compared to the 19% average of the world's most developed regions. These demographic aspects will have serious consequences on employment and food demands.

This growth is very unbalanced between rural and urban areas. The increased urbanization observed in all the countries of

Table 1.- Baseline indicators (1995)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>2.3</td>
<td>51</td>
<td>n.a.</td>
<td>44</td>
</tr>
<tr>
<td>Senegal</td>
<td>8.5</td>
<td>50</td>
<td>33</td>
<td>46</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>0.4</td>
<td>65</td>
<td>72</td>
<td>42</td>
</tr>
<tr>
<td>The Gambia</td>
<td>1.1</td>
<td>46</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>1.1</td>
<td>38</td>
<td>55</td>
<td>44</td>
</tr>
<tr>
<td>Guinea</td>
<td>6.6</td>
<td>44</td>
<td>35</td>
<td>50</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>4.2</td>
<td>40</td>
<td>30</td>
<td>47</td>
</tr>
<tr>
<td>Libéria</td>
<td>2.7</td>
<td>54</td>
<td>n.a.</td>
<td>43</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>14.0</td>
<td>55</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Ghana</td>
<td>17.1</td>
<td>59</td>
<td>63</td>
<td>47</td>
</tr>
<tr>
<td>Togo</td>
<td>4.1</td>
<td>56</td>
<td>52</td>
<td>48</td>
</tr>
<tr>
<td>Benin</td>
<td>5.5</td>
<td>50</td>
<td>37</td>
<td>50</td>
</tr>
<tr>
<td>Nigeria</td>
<td>111.3</td>
<td>53</td>
<td>57</td>
<td>48</td>
</tr>
<tr>
<td>Cameroon</td>
<td>13.3</td>
<td>57</td>
<td>63</td>
<td>46</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>0.4</td>
<td>49</td>
<td>n.a.</td>
<td>46</td>
</tr>
<tr>
<td>Gabon</td>
<td>1.1</td>
<td>55</td>
<td>63</td>
<td>41</td>
</tr>
<tr>
<td>Sao Tome and Principe</td>
<td>0.1</td>
<td>69</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Congo</td>
<td>2.6</td>
<td>51</td>
<td>75</td>
<td>48</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>41.2</td>
<td>52</td>
<td>76</td>
<td>50</td>
</tr>
<tr>
<td>Angola</td>
<td>10.8</td>
<td>47</td>
<td>n.a.</td>
<td>51</td>
</tr>
</tbody>
</table>

Source: UNDP, 1997 and World Bank, 1997

IDAF Technical Report N° 122
the region (fig.1) will certainly have an impact on the structure of fish products demand and distribution costs. The relationship between rural and urban areas is also characterized by a high disparity in access to goods and social services (health, education, etc.), and infrastructures (roads, clean water, electricity, etc.).

Life expectancy at birth is very low and does not exceed 55 years on average in 15 countries, except for insular countries such as Cape Verde and Sao Tome and Principe, where it reaches 65 and 69 years respectively. It is observed in particular that the average life expectancy is lowest in the countries north of Liberia.

The number of literate adults is slowly increasing but
the rate is only higher than 50 % in nine countries. In most countries, the number of schooling years does not exceed two on the average.

1.2 Economic growth

The cumulated Gross Domestic Product (GDP) of the countries of the region was 80 billion US $ in 1995. By way of comparison, that of South Africa which has 41 million inhabitants was estimated at 136 billion US $ for the same year. The structure of GDP (fig.2) is characterized by the importance of the primary (agriculture) and tertiary (trade, administration, services) sectors. The industrial sector is weak, except in Guinea and Mauritania which have mineral resources and in oil-producing countries such as Angola, Gabon, Congo and Nigeria. Agricultural production often represents more than 30 % of GDP.

Except in Gabon, the Gross National Product (GNP) per capita remains low (tab.2). Between 1985 and 1995, it decreased in most of the countries of the region.

1.3 Monetary situation

The Ghanaian currency continued to depreciate in 1997 reaching 1,800 cedis to 1 US $ in April, that is a 22 % fall in two years. On the parallel market, the Nigerian currency remained stable in 1997 compared to the end of 1995 when the exchange rate reached 80 naira to 1 US $, a much higher rate than the official one re-evaluated at 22 naira in January 1994. The Gambian currency has remained relatively stable over the years at about 10 dalasis to 1 US $. Currency has been stable also in Cape Verde. In May 1997, Guinea Bissau joined the eight other CFA franc zone countries in the region. In 1997, the CFA franc which had been devalued by 50 % in 1994, slightly fluctuated against the US dollar thereby following the trend in the French franc to which it is linked.

Table 2.- GNP per capita (1995)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>460</td>
<td>0.5</td>
</tr>
<tr>
<td>Senegal</td>
<td>600</td>
<td>n.a.</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>960</td>
<td>n.a.</td>
</tr>
<tr>
<td>The Gambia</td>
<td>320</td>
<td>n.a.</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>250</td>
<td>2.0</td>
</tr>
<tr>
<td>Guinea</td>
<td>550</td>
<td>1.4</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>180</td>
<td>-3.5</td>
</tr>
<tr>
<td>Liberia</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>660</td>
<td>n.a.</td>
</tr>
<tr>
<td>Ghana</td>
<td>390</td>
<td>1.4</td>
</tr>
<tr>
<td>Togo</td>
<td>310</td>
<td>-2.7</td>
</tr>
<tr>
<td>Benin</td>
<td>370</td>
<td>-0.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>280</td>
<td>n.a.</td>
</tr>
<tr>
<td>Cameroun</td>
<td>650</td>
<td>-6.6</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>380</td>
<td>n.a.</td>
</tr>
<tr>
<td>Gabon</td>
<td>3,450</td>
<td>-8.2</td>
</tr>
<tr>
<td>Sao Tome and</td>
<td>350</td>
<td>-2.1</td>
</tr>
<tr>
<td>Congo</td>
<td>680</td>
<td>-3.2</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>120</td>
<td>n.a.</td>
</tr>
<tr>
<td>Angola</td>
<td>410</td>
<td>-6.1</td>
</tr>
</tbody>
</table>

Source: World Bank, 1997

With the exception of Nigeria, parallel exchange rates in the region have generally disappeared, thereby indicating an improvement in macro-economic policies. The monetary situation in Sao Tome and Principe is still alarming since the dobras lost 60 % of its value against the dollar in 1997. Disturbances in Sierra Leone, Democratic Republic of Congo, Angola and Liberia have led to a serious depreciation of their local currencies.

The CFA zone countries were for a long time used to very low inflation but witnessed between 30 and 40 % rates in 1994 and 1995 as a result of the devaluation of the CFA franc. The rate fell back to about 3 % in 1997. The average annual inflation rate over the 1984 - 1994 period has been high in Sierra Leone (67 %), Guinea Bissau (66 %), Nigeria (21 %), Ghana (29 %), Sao Tome and Principe (24 %) and The Gambia (10 %). However,
these rates seem to be decreasing these past years.

Such an inflation trend has of course severe consequences on artisanal fisheries which uses mostly imported inputs, including petrol which represents the first operating costs line item. Inflation also explains the difficulty many importers are faced with in renewing their stocks. In fact, in a situation of high inflation, earnings from the sale of stocks does not facilitate renewal; in the first place, because the seller does not often take inflation into account to permanently adjust his prices and if he does, he is immediately treated as a speculator. Also, because of the small quantities at stake, orders are placed not more than once a year and earnings in local currency inevitably lose value during this period. This is also true for administrations and development projects which have a working capital component based on the sale of imported inputs in local currency. This was noted, for example, in Sierra Leone and Sao Tome and Principe.

1.4 The fisheries sector

In such a context, the resources provided by the fisheries sector cannot be under estimated. With about 10,000 km of coast and an Exclusive Economic Zone (EEZ) of 3.6 million km, the region covered by IDAF associated countries represents 30 % of the whole African continent (tab.3).

Data related to the exploitable potential or Maximum Sustainable Yield

<table>
<thead>
<tr>
<th>Table 3.- Geophysical features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land area (km²)</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Mauritania</td>
</tr>
<tr>
<td>Senegal</td>
</tr>
<tr>
<td>Cape Verde</td>
</tr>
<tr>
<td>The Gambia</td>
</tr>
<tr>
<td>Guinea Bissau</td>
</tr>
<tr>
<td>Guinea</td>
</tr>
<tr>
<td>Sierra Leone</td>
</tr>
<tr>
<td>Liberia</td>
</tr>
<tr>
<td>Côte d Ivoire</td>
</tr>
<tr>
<td>Ghana</td>
</tr>
<tr>
<td>Togo</td>
</tr>
<tr>
<td>Benin</td>
</tr>
<tr>
<td>Nigeria</td>
</tr>
<tr>
<td>Cameroon</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
</tr>
<tr>
<td>Gabon</td>
</tr>
<tr>
<td>Sao Tome &amp; Principe</td>
</tr>
<tr>
<td>Congo</td>
</tr>
<tr>
<td>Dem, Rep. of Congo</td>
</tr>
<tr>
<td>Angola</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>In % of Africa</td>
</tr>
</tbody>
</table>

Source: FAO, 1993
(MSY) need to be updated. However, the estimates presently available amount to 3.2 million tons a year for the whole region (tab.4). This MSY includes pelagic and demersal resources in a proportion of 73% and 24% respectively. The remaining 3% is for shellfish and cephalopods. However, a great disparity is observed in the geographical distribution of the MSY. Thus, 60% of it is concentrated between Mauritania and Sierra Leone and 11% in Angola. As a result only 920,000 tons (29% of the total MSY) are shared among the 12 other countries of the region. Countries whose known potential is the most important are Mauritania (635,000 t.), Senegal (383,000 t.), Guinea Bissau (245,000 t.), Ghana (291,000 t.), Gabon (176,000 t.) and Angola (365,000 t.). It should be noted that, with the exception of Senegal and Ghana, these coastal countries only exploit a small part of their fish resources themselves. Expressed in kilogrammes per capita per year, the potential of the marine resources of the countries in the region illustrates this great disparity (fig. 3).

In economic terms, the fisheries sector represents up to 10% of the GDP in Mauritania, a country with an important industrial activity in the sector. Moreover, the fisheries sector ensures 50% of the currency inflow and contributes 20% of the state’s revenues. In Senegal, its contribution to the primary sector’s GDP is 11% and 7% in Cote

<table>
<thead>
<tr>
<th>Pelagics</th>
<th>Demersals</th>
<th>Cephalopods</th>
<th>Crustaceans</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>408,000</td>
<td>168,000</td>
<td>59,000</td>
<td>n.a.</td>
</tr>
<tr>
<td>Senegal</td>
<td>258,000</td>
<td>125,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>42,000</td>
<td>4,000</td>
<td>n.a.</td>
<td>125</td>
</tr>
<tr>
<td>The Gambia</td>
<td>140,000</td>
<td>11,000</td>
<td>1,000</td>
<td>400</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>180,000</td>
<td>65,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Guinea</td>
<td>110,000</td>
<td>114,000</td>
<td>24,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>135,000</td>
<td>45,000</td>
<td>10,000</td>
<td>n.a.</td>
</tr>
<tr>
<td>Liberia</td>
<td>35,000</td>
<td>9,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>sub-total</td>
<td>1,308,000</td>
<td>541,000</td>
<td>94,000</td>
<td>4,525</td>
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<tr>
<td>Côte d'Ivoire</td>
<td>51,000</td>
<td>11,500</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Ghana</td>
<td>250,000</td>
<td>41,500</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>Togo</td>
<td>12,000</td>
<td>800</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Benin</td>
<td>10,000</td>
<td>3,000</td>
<td>n.a.</td>
<td>400</td>
</tr>
<tr>
<td>Nigeria</td>
<td>80,000</td>
<td>40,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>sub-total</td>
<td>403,000</td>
<td>96,800</td>
<td>n.a.</td>
<td>400</td>
</tr>
<tr>
<td>Cameroon</td>
<td>40,000</td>
<td>12,000</td>
<td>n.a.</td>
<td>11,000</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>38,000</td>
<td>6,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Gabon</td>
<td>147,000</td>
<td>29,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Sao Tome &amp; Principe</td>
<td>8,000</td>
<td>4,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Congo</td>
<td>50,000</td>
<td>12,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>15,000</td>
<td>4,000</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Angola</td>
<td>307,000</td>
<td>52,500</td>
<td>n.a.</td>
<td>5,500</td>
</tr>
<tr>
<td>sub-total</td>
<td>605,000</td>
<td>119,500</td>
<td>n.a.</td>
<td>16,500</td>
</tr>
<tr>
<td>Total</td>
<td>2,316,000</td>
<td>757,300</td>
<td>94,000</td>
<td>21,425</td>
</tr>
</tbody>
</table>

Source: IDAF Liaison Officers, FAO 1993
d’Ivoire. In most countries, the sector represents between 2 and 3 % of total GDP, such as in Cote d’Ivoir, Togo, Benin, The Gambia and Ghana. It represents 4 % in Guinea and 5 % in Sao Tome and Principe.In Cape Verde, fish products, mainly tuna and lobsters, are traditionally the first, and are among the rare products for export.

Figure 3.- Marine fish potential (kg/caput/year)
2. RECENT TRENDS IN THE SECTOR

2.1 Trends in fish production

Total production in the CECAF area in 1995 was 3.2 million tons representing a 10.6% increase compared to 1994, which still falls below the 4.1 million tons produced in 1990. Countries associated with the IDAF Programme produced 1,245,000 t. (+7.5%), Morocco 805,000 t. (+12%), European Union countries 437,000 t. (-13%) and ex-USSR countries 600,000 t. (+50%) (fig.4).

Due to its considerable fisheries potential, most of the production is done in the CECAF northern zone (Western Sahara, Canary Islands and Morocco). Thus, in 1995, they represented 55% of production in all of the CECAF area with the exception of the great migrators, the tunas.

As can be noted, the evolution of the catches by the fleet in coastal countries has been relatively steady for more than 20 years since they increased by 50% between 1975 and 1995. Moreover, it was also noted that, for the second consecutive year, catches made by IDAF countries were higher than the ones by the non-coastal countries. Their composition in percentage, indicates the growing predominance of small pelagics and the light weight of demersal species (fig.5).

To obtain total catches made by all IDAF countries, catches by Angola in the statistical Division 47 should be taken into account.
account. They reached 88,000 t. in 1995 with a total of 1,333,000 t.

Most of the catches, whether by national or foreign fleet, consist of small pelagics (68%). This mainly concerns sardines, sardinellas, bonga and anchovies. Demersals represent 13% of catches, tuna 10%. The rest is made up of cephalopods, shellfish, and unidentified fish.

Catches made by foreign fleet can be divided into catches by countries of the European Union (EU), especially France and Spain, and those of former USSR particularly Russia and Ukraine, and to a lesser extent Lithuania, Latvia, Georgia and Estonia. Division by groups of species according to fleet for 1995 shows a relative concentration of foreign fleet on tuna and small pelagics (fig. 6 to 9).

As for catches by French fleet in the CECAF area, they reached 93,000 t. in 1995 and consist exclusively of tuna (99%). Catches by the Spanish fleet reached 328,000 t. but are more diversified with a strong presence of sardines (37%) and tuna (33%). The remaining catches consist of cephalopods, kakes and diverse fish as well as shellfish. Other EU countries that fish in the area are Italy, Portugal and Greece.

In recent years, catches by foreign fleet have greatly decreased because many units of the former USSR fleet, subject hitherto to economic profitability criteria have stopped operating. The catches of this fleet, which was still fishing in the CECAF area, especially in the north, 1,688,000 t. in 1990, decreased to 1,468,000 t. in 1991 and 830,000 t. in 1992, 517,000 in 1993, and 394,000 t. in 1994. This represents a fall of almost 1.3 million tons, i.e. 77% in four years. Catches slightly improved in 1995 to 600,000 t. (fig. 10). More than 85% of the catches are small pelagics. The decreasing activity of these foreign fleet has a negative impact not only on the revenues of coastal countries but also on the supply of low valued fish. In some countries, part of these catches was used to pay for fishing licences in
kind. This was the case, for example, in Guinea Bissau where catches from former USSR countries decreased progressively from 78,000 t. in 1990 to 3,000 t. in 1995.

Catches by fleet from countries associated to the IDAF Programme are distributed between artisanal and industrial fisheries in a 3/4 - 1/4 proportion. The major countries with a national industrial fishing fleet are Angola, Mauritania, Senegal, Ghana, Nigeria and Cote d'Ivoire.

It is estimated that artisanal fisheries production significantly exceeded one million tons for the first time in 1996. Generally, a fairly important stability was noticed. Nevertheless, increases in production were registered in many countries with very different situations according to the country.

The distribution of artisanal marine catches by country in 1996 shows a high predominance of Ghana and Senegal, which together represent 54% of landings in IDAF countries (tab. 5). Catches in Nigeria represent not more than 12%, a figure to be compared to the 18% reached in 1992.

In Senegal, catches reached a new record of 328,000 t. in an increasing trend since many years. In The Gambia, production nearly doubled since 1993. In Ghana, catches reached 298,000 t. i.e. almost the level reached in 1992 after a serious fall these past years. In Nigeria, production estimated at 138,000 t. is still far from the average 180,000 t. production between 1988 and 1992 and even the 159,000 t. captured in 1995. Catches greatly increased in Angola and Gabon. It is possible that in some countries, the estimated high production partly reflects an improvement in statistics. This could be the case of The Gambia, Gabon and Angola.

Owing to the unequal quality of statistical data and to the fluctuations of prices during the year, it is difficult to have an accurate idea of the value of catches at the Figure 10.- Catches by former USSR fleet in CECAF area (1972-1995)

Table 5.- Artisanal marine fisheries production (1996)

<table>
<thead>
<tr>
<th>Country</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>22,300</td>
</tr>
<tr>
<td>Senegal</td>
<td>327,900</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>4,800</td>
</tr>
<tr>
<td>The Gambia</td>
<td>30,500</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>52,000</td>
</tr>
<tr>
<td>Guinea</td>
<td>49,800</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>46,800</td>
</tr>
<tr>
<td>Liberia</td>
<td>2,000</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>37,500</td>
</tr>
<tr>
<td>Ghana</td>
<td>298,200</td>
</tr>
<tr>
<td>Togo</td>
<td>9,900</td>
</tr>
<tr>
<td>Benin</td>
<td>7,300</td>
</tr>
<tr>
<td>Nigeria</td>
<td>138,200</td>
</tr>
<tr>
<td>Cameroon</td>
<td>45,000</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>4,100</td>
</tr>
<tr>
<td>Gabon</td>
<td>27,000</td>
</tr>
<tr>
<td>Sao Tome &amp; Principe</td>
<td>3,400</td>
</tr>
<tr>
<td>Congo</td>
<td>10,500</td>
</tr>
<tr>
<td>Dem, Rep. of Congo</td>
<td>3,700</td>
</tr>
<tr>
<td>Angola</td>
<td>46,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,167,800</strong></td>
</tr>
</tbody>
</table>

Source: IDAF Liaison Officers
landing site. However, it would seem reasonable enough to consider that it must be close to 2.5 billion US$, of which about 1.1 billion US$ (45%) would be contributed by the fleet from the region's coastal countries. For these countries, demersal species represent 51% of the total value of landings, small pelagics 15% - whereas they represent 56% in volume-, cephalopods 12%, shellfish 9% and tuna 4%. Nine percent of catches are unidentified.

Coastal countries in West Africa have the possibility of increasing their share of the catches in their waters. However, fishing effort should be geared towards small pelagic stocks which were until recently fished by foreign industrial fishing vessels, mainly from the former USSR. Unfortunately, with the current state of technology, these resources are generally out of scope of artisanal fishing fleet.

Catches from inland waters, also, in a steady increase, were estimated at 497,000 t. in 1995, i.e. 27% of total national catches (fig. 11). Aquaculture production is insignificant.

2.2 Means of production

According to the most recent estimates, there are 576,000 full-time artisanal fishermen working at sea and half of them are supposed to be Nigerians (tab.6). In addition to these professionals, there is a great number of part-time fishermen who are also farmers.

Artisanal fishermen's migration is an essential characteristic of marine fisheries in the region. Thus, in Gabon, Togolese, Beninese and particularly Nigerians represent more than 75% of marine fishermen. In Togo, 65% fishermen are foreigners and in Benin 55% are mainly Ghanaians. In Cameroon, they represent 80%, mainly Nigerians. In The Gambia, 67% are foreigners, mainly Senegalese. The latter are also found in Guinea Bissau where 27% of the fishermen are foreigners. In Congo, there is a community of 500 Popo fishermen from Benin who settled there in the early 1960s. They represent one third of the country's marine fishermen. On the other hand, migrant fishermen are generally not present in insular countries (Cape Verde, Sao Tome and Principe, Equatorial Guinea) and in countries where strong migrating tradition exists: Senegal, Ghana and Nigeria. Migrant fishermen, who often do not regularize their status, live in precarious situations. Their repatriation from Liberia, Mauritania and Gabon these past years can be recalled. Moreover, in many countries in the region, they have no right to land ownership.

There are about 135,000 artisanal fishing boats. These are canoes, with the exception of planked boats of 4 to 6 m. in length built in Cape Verde and the launches used by the Imraguen populations of the Arguin Bank in Mauritania.

Traditionally, the canoes were built from huge tree trunks. These dug-out canoes were, however, limited in length and volume by available trunks. But with the necessity of extending the canoes' range of action and/or due to the adoption of new fishing methods, they have progressively evolved. Thus, there are Senegalese canoes built with planks and

Figure 11.- Catches by IDAF associated countries (1975-95)
Table 6.- Full time artisanal fishermen and artisanal fishing boats per country (1997)

<table>
<thead>
<tr>
<th>Country</th>
<th>Fishermen</th>
<th>Fishing boats</th>
<th>Motorization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>16,000</td>
<td>2,054</td>
<td>90</td>
</tr>
<tr>
<td>Senegal</td>
<td>57,067</td>
<td>11,636</td>
<td>80</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>5,526</td>
<td>1,417</td>
<td>71</td>
</tr>
<tr>
<td>The Gambia</td>
<td>2,731</td>
<td>495</td>
<td>87</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>9,800</td>
<td>2,490</td>
<td>25</td>
</tr>
<tr>
<td>Guinea</td>
<td>10,488</td>
<td>2,563</td>
<td>40</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>14,670</td>
<td>5,690</td>
<td>16</td>
</tr>
<tr>
<td>Liberia</td>
<td>1,725</td>
<td>513</td>
<td>3</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>14,802</td>
<td>2,285</td>
<td>53</td>
</tr>
<tr>
<td>Ghana</td>
<td>101,741</td>
<td>8,641</td>
<td>59</td>
</tr>
<tr>
<td>Togo</td>
<td>2,876</td>
<td>403</td>
<td>46</td>
</tr>
<tr>
<td>Benin</td>
<td>3,596</td>
<td>840</td>
<td>48</td>
</tr>
<tr>
<td>Nigeria</td>
<td>272,000</td>
<td>77,000</td>
<td>21</td>
</tr>
<tr>
<td>Cameroon</td>
<td>24,136</td>
<td>7,335</td>
<td>27</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>3,736</td>
<td>1,290</td>
<td>12</td>
</tr>
<tr>
<td>Gabon</td>
<td>5,000</td>
<td>1,500</td>
<td>90</td>
</tr>
<tr>
<td>Sao Tome &amp; Principe</td>
<td>2,100</td>
<td>1,870</td>
<td>40</td>
</tr>
<tr>
<td>Congo</td>
<td>1,777</td>
<td>560</td>
<td>40</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>3,000</td>
<td>800</td>
<td>4</td>
</tr>
<tr>
<td>Angola</td>
<td>23,364</td>
<td>4,677</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>576,135</td>
<td>134,059</td>
<td>32</td>
</tr>
</tbody>
</table>

Source: IDAF Liaison Officers

using purse seines which measure between 14 and 20 metres and have a loading capacity of 20 tons. In many countries of the region, there are also dug-out canoes (Equatorial Guinea, Sao Tome and Principe, Congo) or planked canoes (Guinea, Sierra Leone, and Nigeria) of more modest dimensions adapted to less intensive fishing.

The Ghanaian-type canoes used on a large part of the coast are always dug-out canoes which can measure up to 14 metres in length. They use heavy and sophisticated fishing gears such as purse seines or large mesh nets. Wood scarcity is becoming a problem, so there is a need to review, in the near future, the very conception of canoes.

The average rate of motorization is growing steadily but seems relatively low (32%). This is mainly due to the poor motorization level in Nigeria due to its high cost. Outboard engine horse power is essentially 8, 15, 25, and 40. The large majority uses petrol. However, an increase in diesel engines is observed especially in The Gambia and Guinea Bissau.

The fishing gears used are similar from one country to another: gillnets, handlines, longlines, purse seines or even cast nets used by small dug-out canoes. Some are less widespread, for example, small dams in the Bijagos archipelago (Guinea Bissau), or trawl nets towed by foot in Cameroon or fixed nets in Sierra Leone.

One of the areas in which particular attention should be paid is the sea safety of artisanal fishermen. Recent surveys\(^1\) have shown the often under-estimated impact of accidents at sea. Thus, in the Programme's northern area (from Mauritania to Sierra Leone), 518 accidents were recorded retrospectively between 1991 and 1994 leading to 340 deaths, 285 wounded and material losses evaluated at 1.3 million USS. A similar survey undertaken in countries in the southern area (from Cameroon to Angola) estimated accidents at 152 between 1989 and 1996, causing 202 deaths, 112 wounded and 150,000 USS worth of losses. The fact that these accidents mainly happened to large canoes (12-22 m) in the northern areas and to smaller ones (3-12 m) in the southern area clearly shows the differences between fishing methods here and there.

2.3 Economic profitability

Between 1995 and 1996, the IDAF Programme financed and coordinated studies on costs and earnings in artisanal fisheries in nine countries of the region (Benin, Cameroon, Cote d'Ivoire, The Gambia, Ghana,  

\(^1\) IDAF/WP/71 and IDAF/WP/116
Guinea, Mauritania, Nigeria and Senegal). In this context, fishing units were monitored over a one-year period using a questionnaire structured for data collection on fishing activities, expenses, catches and revenues.

Data on purse seine, gillnet and handline fishing units in Benin, Cameroon, The Gambia, Guinea, and Senegal give a good idea of the sub-sector’s economic aspects.

Investment costs vary from one country to another and within the same country depending on the technology used. They are very high for purse seine fishing (from $8,300 in The Gambia to $23,500 in Cameroon) but are relatively low for gillnet fishing (from $2,800 in Senegal to $7,300 in Guinea). In Guinea, handline fishing requires the lowest investment cost ($2,700).

Variable costs are from $10 to $500 per fishing trip. The lowest costs per trip are observed in beach seines and gillnets. These costs exceed $100 and attain $500 in Senegal for line fishing units which go out to sea for 7 to 10 days. Fishing trips vary between 100 and 200 days per year.

The most important line item in variable costs is fuel expenses. The relationship between the value of a litre of fuel and the value of production expressed in kilo of small pelagics indicates some differences among countries in the region. In the extreme, there is Nigeria, on one hand, where fuel price is very low and where 180 gr. of fish can buy a litre of fuel; and on the other hand, Senegal where 9 kg is needed because of the very low price of sardinella and high price of fuel. In the other countries, 600 gr to 2 kg of small pelagics need to be sold to buy a litre of fuel (fig.12).

The lowest annual sales are recorded by gillnet fishing in The Gambia ($3,600). The highest are in handline fishing in Senegal ($80,100). In Cameroon, sales for seine fishing unit reach $74,000 whilst those for gillnet fishing vary between $3,600 in The Gambia to

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1 IDAF/WP/100

2 "Handline" is a general term which includes simple line and longlines. Units for fresh fish use longlines and their costs and earnings are generally higher than simple line fishing.
$23,000 in Guinea. Concerning line fishing, sales vary from $12,500 in The Gambia to $80,100 in Senegal. The variations observed in annual sales are due to the variations in the volume of landings and prices of fish.

Net incomes, that is, total sales of fishing unit minus operation costs, are, in most cases, shared between boat owners and the fishing crew. There are various types of sharing systems according to the countries and according to types of units. Very often, sharing is done on a 50% by 50% basis. In Senegal, there is the influence of capitalistic intensity on the structure of the sharing system. New equipment, echosounders or ice boxes are henceforth allocated part of the income in the same way as net, engine or canoe. In Cameroon, some fishing units are also beginning to remunerate not only the ownership of production means but also the management of these units.

Variations in earnings and sharing systems are reflected in the average monthly revenues of boat owners and fishermen. Generally, boat owners are better remunerated than fishermen. Average monthly incomes of boat owners are lowest in Benin ($23) and Cameroon ($24) for gillnet fishing units. They are highest for purse seine fishing in Cameroon ($1,370) and Senegal ($993), and for handline fishing in Senegal ($894). The best remunerated fishing unit for fishermen is handline fishing which gives the highest monthly income of $515 in Senegal and $160 in Guinea. The lowest remunerated units are: seine fishing in Guinea ($17), gillnet fishing ($21) and handline fishing in Benin ($21). Contrary to those of fishermen, the incomes of boat owners generally exceed the basic salaries paid in the public sectors as well as farmers' earnings.

The profitability rate of a fishing unit, the relationship between annual net incomes of the boat owner and investment cost, is positive for all units. The relatively low profitability rates are those recorded in gillnet fishing in Benin (6%) and Cameroon (10%) and handline fishing in Benin (14%). The highest profitability rates are recorded in handline fishing in Senegal (137%) and Guinea (128%).

Results of studies on the uses of incomes by boat owners in Ghana and Senegal show that artisanal fishermen generally make profits and should be able to cover their fixed and variable expenses. However, the boat owners' problem is often a lack of knowledge of managing their fishing enterprise, especially saving for the low season and carrying out the required replacement of equipment.

However, it is noted that the prices given in local currency are constantly increasing. This is inevitable because various inputs are imported (nets, engines, fuel) and national currencies are constantly being adjusted. The problem faced by both boat owners and fishermen is that the purchasing power of both rural and urban populations where unemployment rate is high due to Structural Adjustment Programmes, is low. Consequently, the operators in the sector cannot compensate the high production costs by a proportional increase of the selling price of fish. In having not much control over the costs, they suffer a reduction in income.

It should be noted that the strategy adopted by migrant fishermen differs from one country to another depending on the economic situation. In The Gambia, for example, Senegalese fishermen generally bring with them fuel which is subsidized in Senegal. On the other hand, in Cameroon, Nigerians often sell their catches and buy the material on the spot. The Beninese fishermen based in Congo buy their canoes from Ghana, like many of their colleagues who operate in Benin.

2.4 **Trade in fish products**

In terms of quantity, the trade balance of fish products had a deficit of not more than 560,000 tons in 1995 (fig.13). Whilst imports represented almost 1.3 million tons in 1989-90, they were only 780,000 tons in 1995. Comparing the average in 1993-95 to that of 1981-83, a 37% fall in imports was noted.
In terms of value, however, this traditionally negative balance has been positive since the mid 1980s. It reached 271.5 million US$ in 1995 (tab.7), a significant increase from 50 million US$ in 1993. This is partly due to a regular fall in imports since 1990 owing to national economic crises but also to the growth of exports estimated at 770 million US$ in 1995.

The main importing countries of the region in 1995 were Cote d'Ivoire (250,000t.) and Nigeria (311,000t.). The major suppliers of Cote d'Ivoire were Mauritania, ex-USSR countries and the Netherlands. Official imports are generally composed of frozen small pelagics (horse mackerels, sardinellas) as well as frozen tuna to supply the canneries. Nigeria imports small pelagics mainly from the Netherlands and Namibia. The Democratic Republic of Congo imported 108,000 t. in 1995 compared to 150,000 t. in the mid-1980s. They are mainly frozen horse mackerels from Namibia.

Ghana imports mainly during the low season (December - May). These imports consist of horse mackerels and mackerels mainly from Norway, the Netherlands and Belgium. They reached 26,000 t. in 1995.

Togo imports smoked or dried small pelagics from Ghana. It also imports frozen horse mackerels, sardinellas and canned fish from Mauritania and the Netherlands. After a sharp fall in 1993, these frozen fish imports increased to 36,000 t. in 1994 and 40,000 t. in 1995.

Unofficial imports are mainly composed of salted/dried or smoked fish from neighbouring countries.

Industrial or semi-industrial fleet in the countries of the region fish for export essentially. However, it must be noted that artisanal fishermen increasingly supply the export channels such as in The Gambia and Guinea. In Senegal, they ensure more than 60% of the needs of processing factories.

Fresh or frozen fish are generally exported to Europe and smoked and dried fish to countries of the region. Ghana and Cote d'Ivoire export canned tuna. Some additional products such as shark fins, for example, are exported to Asia or "poutargue" (mullet eggs) exported from Mauritania to Italy. The big
exporting countries are Senegal, Cote d'Ivoire and Mauritania. These three provide 73% of exports in the region. For some countries, exports of fish products represent an essential contribution to the national economy. This is the case of Cape Verde, The Gambia, Sierra Leone and Angola.

Exports in Cote d'Ivoire reached a new record of 233 million US$ in 1995 almost double its previous record of 134 million US$ in 1993. While exports in Senegal exceeded 200 million US$ in the early 1990s, they fell sharply to 120 million US$ in 1993 and 1994. They rose significantly again to 165 million US$ in 1995. Exports from Ghana and Nigeria were 60 and 55 million US$ respectively compared with 30 million US$ previously. Countries which traditionally were hardly exporters witnessed fish product exports increase significantly in the past years. Examples are The Gambia, whose exports doubled to 7 million US$, Guinea which exported 18 million US$ worth, an increase compared to 1993 and 1994 (7-8 million US$), Togo with 4 million US$ instead of 500,000 to 800,000 US$ and Benin with 1.5 million US$, more than the 100,000 to 200,000 US$ in the past.

Exports in Cameroon, on the other hand, fell. Composed mainly of prawns for the European Union, these exports were slightly lower than 2 million US$ in 1995, far from the 7 to 8 million US$ recorded at the end of the 1980s. Congo also exported only 133,000 US$ worth in 1995, as against 5 to 7 million US$ exported traditionally.

<table>
<thead>
<tr>
<th>Source: FAO</th>
</tr>
</thead>
</table>

Exports to neighbouring countries were not often recorded but represent significant amounts for some. Hence in Cameroon, for example, they represent 50,000 tons of which 20,000 are from the artisanal marine fishery, for an estimated value of 40 million US$.

Due to the different changes that took place on the international market, the domestic market supply for the region changed in a few years. In 1995, as the average since 1991, 63% of the local needs are supplied from the national production and 37% comes from imports (fig. 14). In 1990, the relationship was respectively 52% and 48% and between 1981 and 1983 it was 45% and 55%. This clearly shows lesser dependence on foreign markets,

### Table 7.- Balance of trade of fish products in value (1995)

<table>
<thead>
<tr>
<th>Country</th>
<th>Fish products imports (millions $)</th>
<th>Fish products exports (millions $)</th>
<th>Fish products balance of trade (millions $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>2.0</td>
<td>167.3</td>
<td>165.3</td>
</tr>
<tr>
<td>Senegal</td>
<td>17.2</td>
<td>165.3</td>
<td>148.1</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>0.5</td>
<td>1.7</td>
<td>1.2</td>
</tr>
<tr>
<td>The Gambia</td>
<td>0.3</td>
<td>6.9</td>
<td>6.6</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>0.5</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Guinea</td>
<td>4.0</td>
<td>18.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>3.4</td>
<td>20.3</td>
<td>16.9</td>
</tr>
<tr>
<td><strong>sub-total</strong></td>
<td>27.9</td>
<td>381.6</td>
<td>353.7</td>
</tr>
<tr>
<td>Liberia</td>
<td>1.8</td>
<td>0.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>164.8</td>
<td>233.3</td>
<td>68.4</td>
</tr>
<tr>
<td>Ghana</td>
<td>15.5</td>
<td>59.7</td>
<td>44.2</td>
</tr>
<tr>
<td>Togo</td>
<td>15.5</td>
<td>4.3</td>
<td>-11.2</td>
</tr>
<tr>
<td>Benin</td>
<td>9.3</td>
<td>1.6</td>
<td>-7.7</td>
</tr>
<tr>
<td>Nigeria</td>
<td>139.8</td>
<td>55.3</td>
<td>-84.5</td>
</tr>
<tr>
<td><strong>sub-total</strong></td>
<td>346.7</td>
<td>355.0</td>
<td>8.2</td>
</tr>
<tr>
<td>Cameroon</td>
<td>27.1</td>
<td>1.9</td>
<td>-25.2</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>2.8</td>
<td>1.7</td>
<td>-1.1</td>
</tr>
<tr>
<td>Gabon</td>
<td>6.0</td>
<td>6.7</td>
<td>-0.6</td>
</tr>
<tr>
<td>Sao Tome &amp;</td>
<td>0.6</td>
<td>0.0</td>
<td>-0.6</td>
</tr>
<tr>
<td>Congo</td>
<td>12.4</td>
<td>0.1</td>
<td>-12.2</td>
</tr>
<tr>
<td>Dem, Rep, of</td>
<td>48.0</td>
<td>1.1</td>
<td>-46.9</td>
</tr>
<tr>
<td>Angola</td>
<td>24.5</td>
<td>21.5</td>
<td>-3.0</td>
</tr>
<tr>
<td><strong>sub-total</strong></td>
<td>123.4</td>
<td>33.0</td>
<td>-90.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>498.2</td>
<td>769.7</td>
<td>271.5</td>
</tr>
</tbody>
</table>

Exports to neighbouring countries were not often recorded but represent significant amounts for some.
a fact that might be seen as positive. However, as mentioned above, this lesser dependence is due to a sharp fall in imports which has generally not been matched with a corresponding increase in local production. Exports also varied since 1990 between 15% and 20% of regional production, representing 18% in 1995.

Fish trade is largely ensured by women. The number of persons working in the fields of fish processing and marketing is estimated at 1.8 million. Two distinctive strategies can be noted: a "domestic" strategy whereby a fisherman's wives and female relatives process and market his catches; another is the "entrepreneurial" strategy used by women who finance fishing units and do not necessarily have a kinship relationship with the boat owners or fishermen. They thus ensure a guaranteed supply of fresh fish. Data on incomes from this trade are almost non-existent. Nevertheless, in 1995, O. N'Diaye estimated the annual income of a retailer in M'bour in Senegal at 1,200 US$ and that of a wholesale fishmonger at 3,200 US$. For the same year, I. Odotei estimated the income of fish traders at Elmina in Ghana at 80 US$, 700 US$ and 1,200 US$ respectively according to the volume marketed: low, medium or high.

Studies on fish processing and marketing by women in the region show that the profitability of these activities is often high. It depends on the fish species used, the level of processing, supply, nearness to markets and technology used. Women not only use their incomes for household maintenance and some social obligations, but also re-invest an important part in fishing-related activities.

2.5 Fish consumption

The apparent consumption of fish products in the region was estimated at 9.2 kg per capita in 1995 (fig. 15). This consumption is decreasing sharply compared to that of the early 1980s when it exceeded 15 kg. This is due, on one hand, to a fall in imports and on the other hand, to population growth. Fish consumption in the region is therefore less than the world average of 13 kg.

This relatively low consumption occurs in a context of malnutrition. Indeed, in ten years, the average index of food production per capita has fallen in most countries of the region (tab. 8) and the economic crises prevailing in all these
countries result in a high reduction of imports.

The situation is however very different from one country to another. In 6 of them namely Senegal, Ghana, Equatorial Guinea, Gabon, Congo, Sao Tome and Principe, consumption per capita and per year is equal to or exceeds 20 kg. In 7 countries, namely Guinea Bissau, Guinea, Liberia, Nigeria, Cameroon, Democratic Republic of Congo and Angola, it is less than 10 kg. In 7 other countries, it is between 10 and 20 kg per year.

In Ghana, the population increased from 15 to 17.3 million inhabitants between 1990 and 1995. At the same time, fish supply on the domestic market slightly decreased from 390,000 t. to 352,000 t. due to low production (from 394,000 t. to 344,000 t.), increased exports (from 26,000 t. to 36,000 t.) and a slight increase in imports (from 22 to 25,000 t.). Under these circumstances, consumption per capita decreased from 26.0 to 20.4 kg/year.

In Congo, which was importing 50,000 to 55,000 t. in the mid-80s and was producing 30,000 t. for a population of 1.9 million inhabitants, apparent fish consumption was 40 kg/capita/year. In 1995, the economic crisis led to a fall in imports to 21,000 t., while production reached 36,000 t. However, the population is 2.6 million inhabitants and apparent consumption is only 22.7 kg/capita/year.

In Angola, apparent consumption decreased from 25 kg to 9 kg from 1981-1988 and 1991-1995. Meanwhile, imports decreased from 130,000 t. to 9,000 t. per year. In Cameroon, during the same period, consumption fell for the same reasons from 12 kg to 8 kg. Even Cote d’Ivoire did not escape since apparent consumption decreased from 20

<table>
<thead>
<tr>
<th>Country</th>
<th>Fish consumption (kg/capita/year)</th>
<th>Share of fish (%) in total proteins</th>
<th>Share of fish (%) in animal proteins</th>
<th>Average index of food production per capita (1993) (1979-81 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>16.8</td>
<td>6.2</td>
<td>15.1</td>
<td>81</td>
</tr>
<tr>
<td>Senegal</td>
<td>27.6</td>
<td>11.4</td>
<td>39.3</td>
<td>111</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>18.2</td>
<td>8.3</td>
<td>22.9</td>
<td>n.a.</td>
</tr>
<tr>
<td>The Gambia</td>
<td>18.1</td>
<td>11.8</td>
<td>55.1</td>
<td>76</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>5.4</td>
<td>3.2</td>
<td>16.7</td>
<td>110</td>
</tr>
<tr>
<td>Guinea</td>
<td>9.7</td>
<td>6.3</td>
<td>48.9</td>
<td>98</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>14.3</td>
<td>12.2</td>
<td>63.4</td>
<td>66</td>
</tr>
<tr>
<td>Liberia</td>
<td>4.6</td>
<td>3.8</td>
<td>21.6</td>
<td>66</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>12.1</td>
<td>7.4</td>
<td>39.2</td>
<td>89</td>
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<tr>
<td>Ghana</td>
<td>20.4</td>
<td>13.3</td>
<td>57.8</td>
<td>115</td>
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<tr>
<td>Togo</td>
<td>12.6</td>
<td>8.5</td>
<td>44.0</td>
<td>106</td>
</tr>
<tr>
<td>Benin</td>
<td>10.8</td>
<td>5.5</td>
<td>31.9</td>
<td>119</td>
</tr>
<tr>
<td>Nigeria</td>
<td>6.0</td>
<td>3.0</td>
<td>22.5</td>
<td>129</td>
</tr>
<tr>
<td>Cameroon</td>
<td>8.8</td>
<td>4.9</td>
<td>23.6</td>
<td>79</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>22.9</td>
<td>34.7</td>
<td>66.9</td>
<td>n.a.</td>
</tr>
<tr>
<td>Gabon</td>
<td>34.7</td>
<td>12.4</td>
<td>26.2</td>
<td>78</td>
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<tr>
<td>Sao Tome &amp; Principe</td>
<td>24.3</td>
<td>15.5</td>
<td>61.6</td>
<td>n.a.</td>
</tr>
<tr>
<td>Congo</td>
<td>22.7</td>
<td>16.4</td>
<td>44.9</td>
<td>79</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>5.9</td>
<td>4.4</td>
<td>26.5</td>
<td>100</td>
</tr>
<tr>
<td>Angola</td>
<td>9.2</td>
<td>7.8</td>
<td>32.8</td>
<td>72</td>
</tr>
</tbody>
</table>

Source: FAO
kg per year in the second half of the 1980s to 12 kg in 1995 due to low production, high exports and imports as well as the growth of local production meant for uses other than human feeding (from 15% to 55%).

In Mauritania, changes in significant eating habits were due to the recent years of drought and rapid urbanization. Consequently apparent consumption increased from less than 10 kg in 1988/1989 to more than 16 kg in 1995.

Senegal maintained a high level of 27.6 kg in 1995 at the expense of a fall in exports which declined from 130,000 t. in the mid-80s to 83,000 t. in 1995.

In 9 countries in the region, fish provides 40% of animal proteins. In 8 countries, it supplies more than 20% of total proteins.

There is a risk of fish price increases in the future. This will be due to the joint effect of the supply deficit and the quick and steady progression of demand, and on the other hand the rise of production and importation costs.

In some countries, the fall in the activities of fleet in the former USSR which started in 1991, and will probably continue in the coming years, has a direct effect on the domestic market supply. Indeed, this fleet was often landing small pelagics for sale on the local market in compliance with the terms of fishing agreements. Moreover, this fish was a cheap source of supply for the local populations.

Post-harvest losses remain a source of waste. Indeed, these concern physical losses but they also represent economic losses resulting from the lack of infrastructures and adequate storage facilities.

Artisanal fisheries catches are sold fresh or processed according to the taste of consumers, storage conditions and the relationship between supply and demand. In many countries, cold storage methods are inadequate and fish unsold the same day is either dried or smoked. Thus in Senegal, 37% of the artisanal fishery catches are processed. It is estimated that 35,000 t. of processed fish were produced in 1994.

In Sao Tome and Principe, as well as in Cape Verde, more than 80% of the fish is marketed fresh. About 10% is salted/dried and 8% smoked.

In Cote d'Ivoire, 80% of the production is smoked, especially sardinellas, anchovies and herrings. In Benin, the major part of the fish sold is processed but it is noted that more and more quantities of bonga are sold fresh.

In all the countries of the region, the fish market is free and prices vary according to the law of supply and demand. There are, however, two distinct markets: the one for small pelagics of low market value and the other of demersal fish meant for more urbanized customers with a relatively higher income.

The price of small pelagics landed by artisanal fishing units varies seasonally according to their abundance. Compared to that of meat, it remains cheap. In Ghana and Senegal, the biggest producers in the region, sardinella is less expensive and is sold between 0.10 and 0.30 US$/kg. In Togo, anchovies are bought at 0.25 to 0.40 US$/kg. In other countries in the region, prices of small pelagics vary from 0.30 to 1.00 US$. These prices are still very competitive compared to the ones of meat which vary between 2 and 3 US$/kg.

Regarding species of high value, their price is close to that of meat which varies generally between 1.5 and 3 US$/kg according to the country, abundance and species.
As already mentioned in the first chapter, the economic situation in the countries of the region is very alarming. With a Gross National Product (GNP) per capita inferior to 500 US $ per year in most of the countries, and inferior to 1,000 US $ in all, except in Gabon (tab.2), the financial resources necessary to autonomously implement a sustainable development policy are limited. Moreover, from 1985 to 1995, the average annual growth rate of the GNP per capita was negative in most of the countries in the region.

The weight of the debt is particularly heavy, since the total debt exceeds one year of GNP (tab.9). In addition, the servicing of the debt, i.e. payment of interests, often represents an important part of exports. This is why the success of government policies often depends on the assistance which their development partners provide.

### 3.1 Objectives and priorities

The objectives assigned to the artisanal fisheries sector by national authorities are identical in most of the region’s countries. The major ones are:

- increase production to ensure food self-sufficiency;
- create jobs to fight unemployment and rural exodus;
- increase fishermen’s income and welfare;
- preserve resources;
- improve technology.

It should be noted that since a few years ago, the expression “food security” is replacing “food self-sufficiency”. There is therefore a move from a relatively economic national self-sufficiency concept, for agricultural production in particular, to the recognition of these countries’ integration in to the world economy, taking into account the importance of comparative advantages and trade exchanges. Contrary to the food self-sufficiency concept, which made explicit reference to food

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Debt in % of GNP</th>
<th>Debt service in % of exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>240</td>
<td>23</td>
</tr>
<tr>
<td>Senegal</td>
<td>99</td>
<td>15</td>
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<tr>
<td>Cape Verde</td>
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<td>n.a.</td>
</tr>
<tr>
<td>The Gambia</td>
<td>117</td>
<td>14</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>341</td>
<td>15</td>
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<tr>
<td>Guinea</td>
<td>95</td>
<td>14</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>187</td>
<td>n.a.</td>
</tr>
<tr>
<td>Liberia</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>339</td>
<td>40</td>
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<tr>
<td>Ghana</td>
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<tr>
<td>Togo</td>
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<tr>
<td>Benin</td>
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<tr>
<td>Cameroon</td>
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<td>Gabon</td>
<td>122</td>
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<td>Sao Tome &amp; Principe</td>
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<td>n.a.</td>
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<tr>
<td>Congo</td>
<td>454</td>
<td>52</td>
</tr>
<tr>
<td>Angola</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Source: UNDP, 1997
production, food security implicitly refers to income. Thus, the food security objective will be more easily achieved if income is higher. It should therefore be acknowledged that production should lead to the highest possible income. In this light, the fall in fish products imports recorded these past years, which was not compensated for by an increase in domestic production, represents a danger for food security among the populations in the region.

In the framework of macro-economic policies influenced by Structural Adjustment Programmes (SAP), the fishery sector is sometimes relied upon to attain the objectives of improving the balance of payments. Thus, one of the objectives sometimes assigned to the sector is its contribution to foreign currency earnings through exports. This primarily concerns industrial fisheries. However, it is observed that in some countries the contribution of artisanal fisheries is significant. This is the case in Senegal where the sector supplies more than 50% of the products for export. It is also the case in Mauritania and, to a lesser extent, in Guinea and The Gambia. In addition, reduction in fish imports and their substitution by domestic production is an objective pursued by many countries in the region.

However, in a context of intensive exploitation of the resources, some of these objectives are incompatible. Thus, for example, the increase in employment opportunities and the consequent entry of new operators in the fishery will cause, in the long run, a fall in productivity and therefore in individual income. The increase in exports will result in a decrease in the catches available on the domestic market. Although in this case it is possible for the income generated by these exports, generally comprising high valued products, to be used in importing large quantities of low market valued fish meant for populations with low purchasing power. A third example is related to the modernization of techniques which can entail, in the long run, a fall in job opportunities by substituting capital for employment.

This is why political decisions must be taken to arbitrate between different development options. It is the responsibility of administrative and research institutions, and also of the populations concerned to help make these choices. This is all the more necessary because more attention is now being given to "sustainable development", particularly in the case of a renewable and limited resource like fisheries, the overexploitation of which is a permanent threat.

In all the countries of the region, official priority has, for several years, been given to artisanal fisheries and not to industrial fisheries. This is due to several reasons. First of all the failure of industrial fisheries development policies. They were, on the whole, costly and non profitable. It should be noted that throughout the world, most industrial fishing fleet are highly subsidized, something the economic situation of the countries in the region does not naturally permit or no longer permits\(^1\). Secondly, in most countries in the region, fishing possibilities do not justify the operation and maintenance of an industrial fleet, in the absence of an effective sub-regional policy on exploitation and access to the resource. The general policy then is, on the one hand, to favour national production and the creation of jobs by the development of artisanal fisheries and on the other hand, to give foreign fleet the right to exploit the resources that are out of reach of artisanal fisheries against payment of fishing licences.

\[^1\] On the basis of the 1989 gross incomes, FAO estimated the annual operating deficit of the world fishing fleets at 22 billion US$, not to mention the cost of capital. If the latter is considered, the deficit would be 54 billion US$ a year.
3.2 Development policies

The trend now in most of the region's countries is to favour a policy of liberalization and decentralization. Liberalization through the promotion of private enterprises, the decontrolling of prices and the handing over of projects to the private sector or to the fisherfolk communities. Decentralization through communities taking responsibility for a number of activities and managing their infrastructures. The economic situation, and also, may be mostly, the need to hold the users responsible for the infrastructures and services leads more and more countries to require them to pay user fees. In the countries where the communities are involved in their own development through a participatory approach, the fisheries administrations practise this policy.

The handing over of development projects to private operators at the end of foreign assistance was practised, some years back, by Gabon and Guinea Bissau. Recently, infrastructures provided by development projects were handed over to communities instead of private operators in The Gambia, Gabon, Ghana and Sierra Leone. However, this can only happen after a real training process.

The integrated development strategy is still being carried out with the active participation of fisherfolk communities. The countries most involved in implementing this strategy are Benin, The Gambia, Ghana, Guinea, Nigeria and Sierra Leone. Cape Verde, Sao Tome and Principe, and Gabon are also making an effort in this sense. Guinea and Sierra Leone continue the development of fisherfolk cooperatives. In Senegal, the government wants to promote Economic Interest Groups (GIE). In Cote d'Ivoire, the fisherfolk communities of Aby lagoon are closely associated in the elaboration of the management plan of the lagoon. In Togo, the fisheries and aquaculture masterplan was prepared in close collaboration with representatives of various operators in the sector.

In some countries, the artisanal fisheries sector benefits from fiscal policy advantages. This applies usually to fuel for outboard engines and fishing nets. These measures generally consist of total or partial tax exemption, and are in force in Senegal, Cote d'Ivoire, Mauritania, Gabon, The Gambia and Ghana. In Cape Verde, fuel and ice are subsidized. In Guinea, fishing cooperatives are exempted from tax in the first ten years.

However, the use of these fiscal instruments is more and more questioned by international financing bodies within the framework of SAPs. Their removal automatically provokes a rise in investment and operation costs which are difficult to pass on to the consumers integrally. In past years, fuel subsidy, for example, was stopped in Nigeria, The Gambia, Togo, and Ghana.

In many countries, no subsidy or tax exemption policy is applied. This is the case of Angola, Benin, Cameroon, Congo, Guinea, Guinea Bissau, Equatorial Guinea, Sao Tome and Principe and Democratic Republic of Congo.

Faced with high production costs, artisanal fisherfolk have adopted a certain number of strategies. The most widespread is the carry over of all new investments and the reduction of maintenance costs. In Senegal, despite the duty-free fishing equipment and gears, and fuel subsidy, ice canoes use only one engine and purse seines abandon the second accompanying canoe, preferring, when catches are heavy, to find a canoe around the area to bring back part of the catch to the shore. Other measures recently taken by boat owners concern voluntary limitation of fishing effort and catches in order to maintain the price. In Ghana, some boat owners reduce the distance to fishing sites to save on fuel, thereby leading to reduced catches and high prices. They also purchase by-catches from industrial trawlers at sea to re-sell on shore. In
many countries, long line fishing units equipped with insulated boxes make long trips, sometimes as long as 7 days in order to save on fuel. In Sao Tome and Principe, Fish Aggregating Devices (FAD) were introduced to increase catches while reducing fuel costs.

Moreover, while the investment costs are ever increasing, the institutional financing systems often appear inadequate. The financing of artisanal fishing units through this channel has become very scarce, except when those institutions serve as intermediary for foreign financing institutions that supply the funds. However, these institutions have a role to play regarding the mobilization of savings for the development of the sector, especially when resources in the informal financing sector are low or when conditions are severe. Since the devaluation of the CFA franc, it has been observed that the informal sector has been limited in financing artisanal fisheries. In fact, the high investment costs and the fall in profit margins have reduced the renewal of fishing units in CFA franc zone countries.

In some countries, the government offers credit facilities to artisanal fishermen and supplies them with cheaper inputs compared to the ones available on the market. This can be achieved by the intermediary of fisheries administrations and parastatal organs. In the case of The Gambia and Cameroon, these measures are part of a more global policy aimed at equipping and training local fishermen in a sector where foreigners are predominant.

A few countries possess a financing structure dealing only with the development of the fisheries sector. However, it was noticed that in 1994, Congo adopted the working regulations of the Fisheries Management Fund established in 1988. Up to 1997, this Fund, whose receipts should consist of profits from the tax on fishing licences, canoe tax, fines, loans, gifts and legacies, was not yet functioning. In The Gambia, the Fisheries Development Fund finances a certain number of activities in the fisheries sector. The Artisanal Fisheries Support Fund (FADEPA) established in 1992 in Angola is also to be cited. Cote d'Ivoire is looking at the possibility of creating a Fisheries and Aquaculture Development Fund.

A matter of increasing interest to the administrators of the sector is insurance. However, the countries wherein it exists are very rare. That is why the experience of Senegal in this field is being given serious attention. Life insurance related to credit to artisanal fisheries is very common there. Its premium rate is 5%. An appeal for tenders was announced in 1994 for equipment insurance. Four companies have proposed a rate of 8%, which seems to be reasonable and is likely not to increase too much the cost of the credit. However, the boat owners are expected to fulfill a certain number of prerequisites: connecting the engine to the boat, use of life jacket, owning an extinguisher, carrying out control visits, etc. To date, the system has not yet been proposed to boat owners.

Finally, ensuring fishermen's physical safety at sea has become an issue of top priority and is gaining momentum in many countries of the region. A long and patient survey work on this issue was undertaken in 1994 by IDAF in the countries of the northern zone, i.e. from Mauritania to Sierra Leone, and also in Sao Tome and Principe. During the period 1991-1994, 518 cases of accidents were recorded and these caused 340 deaths and 285 injured fisherfolks. Material losses were estimated at 1.2 million US$. This work was undertaken in 1996-1997 in countries of the southern zone, from Cameroon to Angola. The results showed that there were 152 accidents resulting in 202 deaths, 112 injured and material losses estimated at 150,000 US$. In 1997-1998, the same work is underway in countries of the central zone. It should however be noted that, in the absence of efficient national sea-accident recording system, these estimates are much lower than reality. IDAF, in collaboration with FAO's Fisheries Department, organized, in 1997, a
training workshop on sea safety for member countries of the Sub-regional Fisheries Commission.

3.3. **National institutions supporting the sector**

3.3.1 **Administrative institutions**

In all the countries of the region, the fisheries sector depends on a Department or a Ministry. A specialized technical Ministry exists in five countries: Mauritania (Ministry of Fisheries and Maritime Economy), Cape Verde (Ministry of the Sea), Senegal (Ministry of Fisheries and Maritime Transport), Guinea-Bissau and Angola (Ministry of Fisheries). In Guinea, in 1997 the Ministry of Fisheries and Livestock replaced the Ministry of Fisheries and Aquaculture. In Equatorial Guinea, a Ministry of Fisheries and Forests is found and in Sao Tome and Principe, a Ministry of Agriculture and Fisheries.

However, the financial, material and human means allocated to the fisheries administrations in the region are really low. This situation, which is not new, is worsening under the effects of SAPs. As in other national administrations, there is a reduction in staff and running costs. Similarly, it is almost impossible to make the least investment without the help of foreign partners.

3.3.2 **Research institutions**

There is an important number of fisheries research centres in the region. Among these we can mention:

- Centre National de Recherche Océanographique et des Peches (CNROP), Nouhadibou, Mauritania;
- Centre de Recherche Océanographique de Dakar-Thiaroye (CRODT), Dakar, Senegal;
- Institut de Technologie Alimentaire (ITA), Dakar, Senegal;
- Institute of Marine Biology and Oceanography (IMBO), Freetown, Sierra Leone;
- Centre National des Sciences Halieutiques de Boussoura (CNSHB), Conakry, Guinea;
- Centre de Recherches Océanographiques (CRO), Abidjan, Cote d'Ivoire;
- Nigerian Institute for Oceanography and Marine Research (NIOMR), Lagos, Nigeria;
- Food Research Institute (FRI), Accra, Ghana;
- Fisheries Research Station of Limbe, Cameroon;
- Centro de Investigacao Pesqueira (CIP), Luanda, Angola.

Unfortunately, in addition to the limited financial resources - be it investment or operating budget - two main factors limit the scope of work of these Research Centres: first of all, there is too little consultation and coordination with fisheries administrations in the definition of research priorities. This often limits the operational character of the results obtained. Secondly, it is noticed that there is a high concentration on the study of the biological aspects of the resource, thus neglecting socio-economic issues.

It is encouraging to see, in recent years, a certain number of research programmes developed in cooperation with foreign institutions. The Bergen Institute of Fishery Research, Norway, has undertaken, in collaboration with FAO and the coastal countries, a number of studies financed by the Norwegian cooperation agency, NORAD. In this context, N/O Fridtjof Nansen undertook, in 1995 and 1996, acoustic campaigns in waters from Guinea Bissau to Morocco. A workshop on modern stock assessment methods took place in Casablanca in February 1997. Morocco hosted and funded the participation of 12 people in the CECAF region. France, through ORSTOM, cooperates with Mauritania, Senegal, Guinea and Cote
d'Ivoire in the fields of population dynamics and coastal areas development.

The Portuguese Research Institute (INIP) has undertaken some cooperation programmes with Guinea Bissau, Cape Verde and Angola. As for the Federation of Russia, it has some research programmes with Mauritania, Guinea Bissau and Sierra Leone especially with its R/V AtlantNIRO research vessel. Spain (IEO) and France (IFREMER) have signed some cooperation agreements with CNROP (Mauritania).

In Benin, the Canadian Cooperation financed a research programme on demersal stock. A restitution workshop was held in Cotonou in April 1997 to elaborate a management plan. Angola collaborates with Namibia and South Africa in stock assessment research programmes.

In 1997, three CECAF Working Groups met on sardine (February), cephalopods (May) and hakes and deep sea shrimp (May).

3.4 Fisheries legislation

All the countries of the region have a fisheries legislation. These legislations are recent or were up-dated recently.

Since 1995, especially with the assistance of the “Improvement of the legal framework for the cooperation, management and development of fisheries in West African coastal states” project, many activities were carried out in this field. In Guinea, a code on marine fisheries was concluded and an implementation regulation as well as a framework law on inland fisheries were elaborated; in Senegal fishing rights were revised; in Gabon, a law on fisheries and a general implementation regulation was elaborated; in Guinea Bissau, a law on fisheries, a general implementation regulation, and a regulation on artisanal fisheries were concluded; in Angola, a fisheries regulation was elaborated; in Sao Tome and Principe, a law on fisheries and an implementation regulation were elaborated.

This project has equally given support to regional and sub-regional organizations, particularly for activities in harmonizing legislations and marine regulations. Numerous activities have been conducted in this context, notably those that concern the Sub-regional Fisheries Commission and the Regional Committee for the Fisheries of the Gulf of Guinea.

In Benin, the updating of legislative texts and regulations is in progress, as well as the preparation of a Fisheries Code. In Ghana, the first draft of a new Fisheries Code (Law on Management and Development of Fisheries) has been prepared. Many seminars have been organized in 1996 and 1997 to sound the opinion of different operators on the text. The Code will be submitted to Parliament at the beginning of 1998.

Unfortunately, in many countries, the implementation regulations are not complete or are non-existent. This deprives the legislation of every possibility of enforcement.

However, all the countries of the region really need a legislation which is both adequate and whose enforcement cost is acceptable. The absence or non respect of these regulations endangers resource, creates a loss of financial revenue for the state as well as the multiplication of conflicts with their adverse effects for artisanal fishermen.

It has been observed that exporting countries, particularly Senegal, Mauritania, The Gambia and Cote d'Ivoire, have made considerable efforts since 1994 to strengthen the norms of hygiene and sanitation. Such a compliance is henceforth necessary to meet the requirements of the international market and mainly the European Community's new guidelines on the issue.

It was noted that during the revision of national legislations, special consideration was given to the formulation of measures related to
fisheries surveillance, in particular to the improvement of norms applicable to surveillance. This is the case in Angola, Guinea, Guinea Bissau and Senegal. Among the measures proposed is the effort being made to better channel the authority of surveillance agents by clearly defining their functions. Other measures are the clarification of reporting procedures and offence detection procedures; thorough study of the issue of on the spot reporting which is very important in aerial surveillance operations to facilitate offence detection with regard to licence and fishing infringement in prohibited zones and the clarification of sanction procedures and to facilitate the leaders' tasks, the search for a lightening of limits on fines.

A problem faced by most of the region's countries is the high cost of Monitoring, Control and Surveillance (MCS) which, in some cases, could even absorb all the benefits a country gains from the transfer of fishing rights. Several approaches can be used to limit the MCS cost. They are: regional, sub-regional or participatory. Regional or sub-regional cooperation can lead, for example, to the creation of a register for national and foreign fishing boats, the joint operation of surveillance airplanes, the harmonization of access policies and procedures, the use of satellites, etc. It is a strategy that the Sub-regional Fisheries Commission and the Ministerial Conference are trying to implement. Within the framework of a more participatory approach, it seems necessary henceforth to associate fisherfolk communities both in the preparation of the legislations and in their enforcement. These different approaches are not exclusive, but rather complementary.

A particularly interesting example is Senegal where fishery resources and the incomes generated are very important. The Fisheries Protection and Surveillance Project in Senegal (PSPS), established in 1983, meets a double objective: the protection of Senegalese territorial waters and a rational exploitation of its fisheries resources. The structure has five centres for coastal surveillance at the most sensitive landing sites. This permits the involvement of coastal populations. Since 1991, the PSPS has also been responsible for the management of conflicts and accidents at sea.

3.5. Regional fisheries policies

A certain number of regional structures specific to the fisheries sector have been set up. But apart from CECAF, they are all recent and do not often have the financial and human resources necessary to carry out their duty.

- The Fishery Committee for the Eastern Central Atlantic Region (CECAF) was created in 1967 in accordance with the FAO Constitutive Act and in application of an FAO Council resolution. It includes the coastal countries from Morocco to the Democratic Republic of Congo and 10 non-African countries operating in the region. The Committee is empowered to give its views to governments of member States to help them define the scientific bases of regulation measures aiming at ensuring the conservation and improvement of marine resources in all the areas under its authority. The Committee held its thirteenth session in Dakar in December 1995. The Sixth Session of the Working Group on Statistics and the Eleventh Session of the Working Group on Resource Assessment were held in Accra in September 1997. The CECAF Sub-Committee on resource management within the framework of national jurisdiction met in Lome in December 1997.

- The Sub-Regional Fisheries Commission (SRFC) composed of Cape Verde, The Gambia, Guinea, Guinea Bissau, Mauritania and Senegal, was created in 1985 and
constitutes a basis for cooperation in the field of fisheries management and development for those countries characterized by a geographical and biological interdependence of fish stocks. It allows, in the long run, the elaboration of joint policies and favours cooperation in the field of access to fishing areas among member states. The Commission has recently started some activities such as the creation of a regional register for fishing boats, the review of possibilities for sub-regional cooperation in the field of surveillance and enforcement, the harmonization of research programmes, the training of observers on a sub-regional basis and the creation of a sub-regional database for fishery statistics. The Eleventh Session of the SRFC Coordination Committee met in February 1997 in Banjul. It reviewed various on-going projects in SRFC countries. A Round-Table of donors on assistance to fisheries in the sub-region was held in Praia, Cape Verde, in March 1997.

- The Ministerial Conference on Fisheries Cooperation among African States bordering on the Atlantic Ocean whose first meeting took place in Rabat in April 1989 is composed of the states from Morocco to Namibia. On that occasion, the States of the region expressed their common will to reinforce and develop their cooperation in the fields of resource evaluation and preservation, as well as in fish production. For that purpose, they insisted on the development of marine scientific research and the reinforcement of professional and technical training. The third Session was held in Praia, Cape Verde, in July 1995 where Morocco was given the Permanent Secretariat of the Conference.

- The Regional Fisheries Committee for the Gulf of Guinea (COREP) was created in 1984 by Congo, Gabon, Equatorial Guinea, Sao Tome and Principe and the Democratic Republic of Congo. This Committee aims at coordinating, harmonizing, and developing the exploitation of common stocks which are in the Exclusive Economic Zone (EEZ) of member states and managing them. Up to now Equatorial Guinea has not ratified the Convention, which reduces the Committee to four countries. The secretariat is in Libreville, Gabon. For various reasons, the Committee is not yet really functional.

- The International Commission for the Conservation of Atlantic Tunas (ICCAT) was created in 1966. It is composed of 22 members of which 9 are from West Africa: Angola, Benin, Cape Verde, Cote d’Ivoire, Gabon, Ghana, Guinea, Equatorial Guinea and Sao Tome and Principe. The species the Commission deals with include tunas and related species. Considering that these species are highly migratory, ICCAT is essentially interested in deep sea fisheries.

- The Economic Community for Livestock, Meat and Fishery Resources (CEBEVIRHA) was created in 1964 together with the Custom and Economic Union of Central African States (UDEAC) which comprises Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon. CEBEVIRHA which recently became effective held its second quadripartite consultation meeting on fisheries in 1995.

- The Regional Information and Counselling Service for the Processing and Marketing of Fish Products in Africa (INFOPECHE) is a regional inter-governmental organization since
1994. Based in Abidjan, Cote d'Ivoire, it regularly provides information on the market, gives technical advice on products and processing, and ensures training in post-harvest specialized areas in the region. It is part of the regional information service network on fish marketing and technical advice (INFOFISH for Asia and the Pacific, INFOPESCA for Latin America and INFOSAMAK for Arab countries).

Mention should be made also of the Lagos Treaty of 28 May 1975 creating the Economic Community of West African States (ECOWAS). This treaty aims at establishing a progressive integration among the signatory countries as well as the free movement of persons and goods. Though the treaty does not provide any specific measure in the field of fisheries, some activities have been undertaken, sometimes through a sub-project on fisheries, in order to strengthen the economic cooperation and the integration of the countries of the region.

Finally, the Economic Community of West Africa (CEAO) has stopped financing the regional training centre which was the Higher Institute of Technical and Fisheries Sciences (ISSTH) in Nouadhibou, Mauritania, the Institute was closed in 1995.

3.6. Fisheries development and management planning

3.6.1 Constraints

The constraints to the development of artisanal fisheries are many: environmental, technical, financial, institutional and socio-cultural.

Due to the scattering and remoteness of the fishing sites as well as the lack of feeder roads, there is a great distance between producers and consumers. This causes substantial economic and physical losses. Moreover, some areas which are rich in resources but poor in market outlets, could be better exploited. Such is the case in the south of Gabon, Cape Verde and Sao Tome and Principe where the richest islands in fish resources are not the most populated.

In many countries, the environment is threatened by not only natural factors, like drought, but also by human actions. In oil-producing countries, and particularly in Congo and Nigeria, the fishing area is narrowing due to off-shore oil exploration. The latter is equally a source of severe bio-ecological damages. Another danger is linked to massive deforestation. Artisanal fisheries contributes, in part, to this situation through the use of wood for constructing fishing boats and above all, through the large quantities of wood used in fish-smoking activities. It is feared that the gradual disappearance of forests and the absence of a reforestation policy will make wood supply decrease in future. Anyway it is foreseeable that the cost of wood will increase due to the increasing distance to the collection sites.

In numerous coastal areas, the bar phenomenon is a source of dangerous capsizing to artisanal fisherfolk. This is one of the reasons why their activities are based in relatively sheltered fishing ports. Another natural phenomenon which threatens the disappearance of fishing villages is coastal erosion, most especially in the Gulf of Guinea.

The appearance and proliferation of some floating plants which dramatically decrease the natural productivity of water bodies is observed in certain inland waters. This occurs in Benin, Togo, Cote d'Ivoire and Nigeria. Moreover, the destruction of border vegetation has caused bank erosion and consequently the filling up of lagoons.

The main constraint linked to the environment is the fisheries potential. Current knowledge does not make it possible to hope for a great increase in the exploitation level. The consequence will undoubtedly be an intensification of the competition between...
artisanal and industrial fishing units, as well as an increase in the price of fish.

Among the technical constraints are the lack or inadequacy of infrastructures for fish preservation, inappropriate fishing boats and techniques, the lack of training of and equipment for the administrative personnel in the sector.

Onshore infrastructures are often inadequate and many fishing communities have no access to drinking water, electricity and communication networks. Social services like health and education are often lacking in these fishing communities.

The quality of some artisanal fishing boats is poor. Accidents at sea show it. Moreover, canoes are not always adapted to out-board engines. Improving fishing boats will generally allow for the use of low-powered engines and the reduction of fuel consumption.

Improving the technical competence of fisheries personnel is often not a priority for the fisheries administrations in the region. Despite limited financial resources, too few training and continuous training activities are undertaken.

As has been observed, the economic situation in the countries of the region is difficult. Financial resources allocated to fisheries will probably not improve in the coming years. It is well known, presently, that the operating budget and equipment granted to the fisheries administrations do not always allow the staff to simply operate in the field. Moreover, the trend of diminishing external assistance, which is now observed, will probably continue in the future.

At the microeconomic level, there is a crisis of private investment in many countries. The most affected are those where economic or political crisis is or has recently occurred: Angola, Sierra Leone, Liberia, Nigeria and Democratic Republic of Congo. In some countries, it is equally difficult to find private operators willing to invest in the distribution of fishing material and equipment. This has caused irregularity in the supply of inputs in Guinea, Cameroon and Sao Tome and Principe. In Guinea Bissau and Sao Tome and Principe there is a regular shortage of fuel that disturbs fishing activities.

Given the rise of operating costs, a certain number of strategies are being implemented by the fisherfolk communities. The most frequent one is the aforementioned non-renewal of equipment. In Guinea Bissau, it is very common to see as many as three boats being propelled by the same engine. It is the boat that takes the median position which carries the engine and the other two, often smaller, are connected to the towing boat with their prows fixed together with the latter's. The whole apparatus looks like the head of an arrow. In Senegal, motherships appeared in the early 80's with Portuguese, Korean and Spanish units. This practice, prohibited by the legislation of Senegal in 1987, was transferred from Senegalese EEZ waters to the waters of the neighbouring countries of Guinea, Guinea Bissau and Sierra Leone. Each of these trawlers of 100 to 400 gross tonnage carries about forty canoes with a crew of 5 to 6 fishermen in each canoe.

There is a shortage of credit on financial markets, due to the inadequacy of the institutional banking system to finance the artisanal fisheries sector. A fall of the credit from the informal sector or a rise in its cost is to be feared, because of the prevailing high increase in production costs and the fall in the profitability of fishing units. In these circumstances, the government sometimes steps in to compensate for the weaknesses of the private sector. There are also problems associated with the personal contribution requested by credit institutions. In fact, the fisherman hardly ever has enough capital to meet this condition. Consequently, he borrows the necessary amount from the informal sector to cover the personal contribution which will guarantee the receipt of the loan. This strategy
questions the fisherman’s capacity to pay back the loan, especially since, for social reasons, the informal sector will always be a priority with regard to repayment.

On the other hand, fishermen are often wary of banking institutions mainly because of the loss of their savings when some banks go bankrupt as was the case not so long ago in Benin and Cameroon. Since then, they use informal systems such as rotating savings and credit schemes, savings and credit cooperatives or neighbourhood funds.

It is also observed that incomes from fishing licences are rarely re-invested into the sector. They are very often allocated to the state’s general budget, while part of these profits could be used to preserve the very source of these incomes. Moreover, the decrease in activities, and sometimes the withdrawal of some former USSR fleet, causes considerable losses to some countries of the region.

Institutional constraints are well known: lack of personnel, particularly for research and MCS, inadequate monitoring and extension means, lack of necessary skills in fisheries planning and management. As already mentioned, the general context is not favourable for the reduction of the weight of these constraints. Nevertheless, greater coordination and collaboration among different institutions could gather, even temporarily, resources which do not exist within fisheries administrations. This is particularly desirable in planning and research.

In many countries, there is serious institutional instability due to the inclusion of the fisheries sector in different ministries according to changes. This is a handicap during planning.

Socio-cultural constraints are related to the low level of education and social status of the artisanal fishermen who, in many countries, are given little consideration. Some of them consider fishing as a subsistence activity or share their time between fishing and agriculture. This is often a strategy of risk minimization which is often considered as lack of professionalism.

In countries where the majority of the professionals are foreigners, as in Cameroon, Gabon and Congo, it is noticed that the national manpower is getting old, which is a sign of the youth’s lack of interest in the profession.

In certain social groups, such as the Bijagos society in Guinea Bissau, productive work is not considered as a priority for the pre-initiation age-group (20-30 years). Their assets must be redistributed to the old people who have authority and power. This is not likely to promote private initiative.

3.6.2 Opportunities

The liberal policies carried out for some years by governments of the region have encouraging and positive effects for private initiative. In many cases, they have induced private operators or fisherfolk communities to take responsibility of some duties formerly reserved exclusively for the state. These new orientations helped privatize the management of some projects and set up new associative structures.

In administration, a reduced but better trained staff, convinced that a decentralized and participatory approach is henceforth indispensable, will undoubtedly be more motivated to accomplish tasks. Recent training efforts in participatory approaches as well as pilot activities carried out in close collaboration with fishing communities are certainly experiences to be repeated and reinforced.

The opportunity to increase the landings of artisanal fisheries seems limited to the localisation of some underexploited stocks. The latter exist in the Guinea Bissau - Guinea -
Sierra Leone zone and in the waters extending from Cameroon to Angola. It is unlikely that the pelagic resources which are up to now less exploited by foreign fleet will be within reach of artisanal fishing units. A stock of hardly exploited demersals has been identified in the south-west region of Côte d’Ivoire.

The lack or the inadequacy of on shore preservation infrastructures certainly creates some economic losses, especially regarding high value fish species. However, many women take advantage of this situation to process and market the unsold fresh products. A policy of improving preservation, for example through the introduction of small cold rooms and ice machines, should take into account the risk of seeing these processors and traders lack raw materials.

Under the effect of demographic growth, the demand for fish will continue to increase, which should favour the economic profitability of artisanal fishing units. The supply of high value fish to operators oriented towards export can also enable artisanal fishermen to substantially increase their revenues, as is the case in Senegal, Mauritania and The Gambia.

The idea of regional collaboration is not new, but it is rather a long term process. Considering the very nature of the resource and the common problems faced by the region’s countries in its exploitation, regional collaboration must be pursued and encouraged. Unfortunately there is yet no regional forum which gathers the Directors of Fisheries of West Africa.

Finally, foreign assistance still remains available for the development of the artisanal fisheries sector in the region. These financial resources, which have in the past some times been squandered, even when reduced, is an opportunity for the region’s governments to make the best use of them.

3.6.3 Planning process

The adoption of political and economic reforms by the region’s countries requires the reinforcement of analysis and planning capacities at the national level. Indeed, it is more and more important to be able to optimize the use of the resources that are becoming increasingly scarce whether they are natural, financial or human.

Unfortunately, the national capacities in planning are often inadequate. Development plans are most of the time nothing but a list of project proposals submitted for the appreciation of donors. It should be noted, however, that fisheries departments have rare possibilities to recruit economists and that only a few countries have a real planning unit within the fisheries department. A possible solution to this problem is the setting up at the national level of a multidisciplinary team. Its members, coming from various administrations, would meet periodically to develop coordination and monitoring of actions undertaken. Such a team met for the first time in Cameroon and Senegal in 1997 with the assistance of the IDAF Programme. A similar exercise is envisaged for 1998 in The Gambia, Ghana, Benin and Sao Tome and Principe.


The participation of and consultation with the operators of the sector is more and more noticed. Thus a regular use of the Participatory Rapid Appraisal (PRA) techniques is made in Benin, Guinea and The Gambia to identify and solve problems. Other countries have shown interest in this approach and have recently familiarized themselves with
it: Sao Tome and Principe, Cape Verde, Senegal, Togo, Gabon and the Democratic Republic of Congo.

Since 1995, the Fisheries Master Plan was elaborated and adopted in Togo, The Gambia, Mauritania, Guinea Bissau, Equatorial Guinea and Guinea. In Senegal, public authorities had talks with all the actors in the sector in 1997 (administration, professional organizations in the artisanal and industrial sectors, research) to study the sector’s problems. This reflection has led to three determining results for the sector’s future: a draft policy reform, a draft revision of the fisheries code and a draft programme of priority actions.

There are few national professional organisations in the sector, with the notable exception of the National Association of Senegalese Artisanal Fishermen (CNPS). In Benin, artisanal fishermen are part of the National Union of Artisanal Marine Fishermen of Benin (UNAPEMAB). In Guinea, the Committees of Landing Sites Users are a recent but really operational structure. In Gabon, the government is eager to redynamize the Fisheries Centre of Owendo by handing over its management to economic operators’ representatives. In The Gambia, representatives of various communities formed a Management Committee of 7 Coastal Community Fisheries Centres. In Ghana, the Yei Community Fisheries Centre has entered its active stage.

It is clear then that planning is no longer considered as a directing process, but rather as the search for a consensus among all the operators in the sector on the great orientations, a short-term programme of action and the implementation of facilitating measures. This concept was applied in 1995 in Togo. Its efficiency will, however, depend on a better adequacy between human resources and planning tasks on the one hand, and the effective participation of the populations concerned in the development process on the other. It should however be acknowledged that external financial resources are often necessary for the implementation of some recommendations.

3.7 Fisheries resources management

There are few examples of a national policy on fisheries management in the countries of the region. This can be explained by the lack of indicators, especially biological and socio-economic. Another reason is the difficulty to take the decision to limit access to the resource, even when the proposal is documented. This also becomes a very difficult question when it concerns foreign fleet that generate substantial monetary incomes and whose governments have close political and economic relationships with the countries of the region.

In Guinea, the fisheries management policy is based on a fisheries plan fixed annually through a Ministerial Decree. This Fisheries plan is designed on the basis of data and information supplied by the National Marine Science Centre of Boussoura (CNSHB) and the National Fisheries Surveillance Centre (CNSP). The measures stipulated in the plan determine the exploitation level of resources, the conditions for technical, economic and legal exploitation, the potential for groups of species, the effort quota according to fishing type, and the protection of endangered species.

Two measures are commonly in force. First of all the delimitation of an exclusive fishing area legally reserved for artisanal fisheries or more generally forbidden to trawling (tab.10). These zones seem to vary according to the size of the continental shelf, protect the coastal zone including breeding zones and nurseries and are destined to limit artisanal and industrial fishing activity zones. The second is the regulation on the minimum mesh size of the various types of fishing nets.

Moreover, many countries have
Table 10.- Zone reserved to artisanal fisheries

<table>
<thead>
<tr>
<th>Country</th>
<th>Nautical miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>3</td>
</tr>
<tr>
<td>Senegal</td>
<td>6</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>trawling prohibited</td>
</tr>
<tr>
<td>The Gambia</td>
<td>7</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>12</td>
</tr>
<tr>
<td>Guinea</td>
<td>6</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>5</td>
</tr>
<tr>
<td>Liberia</td>
<td>n.a.</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>1</td>
</tr>
<tr>
<td>Ghana</td>
<td>&lt;30 m depth (+/- 5-14)</td>
</tr>
<tr>
<td>Togo</td>
<td>3</td>
</tr>
<tr>
<td>Benin</td>
<td>2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>6</td>
</tr>
<tr>
<td>Cameroon</td>
<td>2</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>n.a.</td>
</tr>
<tr>
<td>Gabon</td>
<td>3</td>
</tr>
<tr>
<td>São Tome &amp; Principe</td>
<td>n.a.</td>
</tr>
<tr>
<td>Congo</td>
<td>8</td>
</tr>
<tr>
<td>Angola</td>
<td>3</td>
</tr>
</tbody>
</table>

adopted the minimum commercial size for some species. This measure concerns, according to the country, cephalopods, shellfish, oysters, sardinella, chinchar, horse mackerel, mackerel and tuna. The use of explosives and toxic substances is prohibited in all the countries. It is rare to prohibit fishing techniques in artisanal fisheries. However, there is one exception: prohibition of the use of beach seine in The Gambia.

In artisanal fisheries, controlling the mesh size is almost non existent due, on one hand, to the enormous resources required and, on the other hand, to the socio-cultural character of the environment. In addition, some fishermen make their own nets.

However, resource management is an essential element for the success of development policies. Over-exploitation will inevitably entail a fall in investment profitability, a decrease in job opportunities and consequently the impoverishment of fisherfolk communities and a loss of revenue for the whole country. Also the fact that many stocks are shared among several countries will require a subregional cooperation both in the elaboration of management measures as well as in their implementation.

Presently, reduction in the activities of the former Soviet Union fleet will alleviate the pressure on the stocks of small pelagics, especially since it is difficult to imagine, in the absence of national industrial fleet oriented to this resource in the region's countries, a substitute taking over the exploitation of such resource of low commercial value. As for demersal species, it seems, apart from some very localised stocks, that they are presently exploited at a level close to the sustainable maximum.

There is increasing anxiety regarding the degradation of the coastal environment. Even if the situation is not as alarming as in some other regions of Asia, the use of pesticides, the silting resulting from deforestation, the destruction of mangrove swamps, the oil exploration, bear harmful consequences on the reproduction capacity of fisheries resources.

Economic problems and the rising cost of inputs also incite the development of explosive or poisonous fishing substances. It is the case, for example, in Senegal, Nigeria and the Democratic Republic of Congo.

A rational management of the environment for a sustainable development will require a multisectoral integration, as well as the participation of the populations concerned. However, it is very difficult to control access to resource in an economic crisis context. Such a control is much more difficult to implement in coastal fisheries than in inland fisheries. It can, however, be foreseen that in a situation where the resource is already highly exploited, with few alternative job opportunities, and a rapid population growth, the management issue will soon be, and for a long time, a major concern.
for fisheries administrators.

Thus, the principle of free access to fishing resources is still in force in artisanal fisheries, despite fast growing fishing efforts, a direct consequence of policies related to subsidies in fishing equipment and fuel, loans under very good conditions and other stimulating policies practised in many countries in the region. Measures on fishing effort regulation have been less successful in their actual implementation. Everyone knows, however, that the major challenge in marine fisheries management is the regulation or limitation of fishing effort.

The most recent initiatives in these areas were taken in 1995 in Mauritania and Senegal. In Mauritania, following a fall in industrial fisheries catches from 470,000 t. in 1993 to 280,000 t. in 1994, the government decided to close deep-sea fishing, i.e. that which catches demersal species, during the month of October 1995. The measure, though not sufficient in itself, aimed at reducing fishing pressure on the cephalopods whose exploitation represents a substantial source of income for the country. This biological rest period extends to the months of September and October and applies to both artisanal and industrial fishing. Seasonal fishing prohibitions were adopted to protect oysters in Guinea, lobsters in Cape Verde and sea turtle in Guinea Bissau.

In Senegal, the initiative came from the National Association of Senegalese Artisanal Fishermen (CNPS) which established in 1995, in Kayar, a daily quota policy on the sea bream, a species mainly caught for export. The measure which limits to 3 boxes of 13 kg each per fishing unit of authorized landings, is respected. It was followed, in the “Petite Cote” region, by a measure to reduce fishing effort for purse seines. They are only authorized to make one daily trip instead of the two which most of them were previously making. Severe sanctions were levied against those who broke this rule going as high as a fine of 60 US $ and the grounding of the canoe. It is too early to determine the impact of such measures on resources, but their positive effects can be noted in the prices offered by the Senegalese fish-mongers just when the profession was liberalised.

Apart from these measures which aim mainly at adjusting demand and supply establishing exclusive user rights, which enable fishing communities to participate in the exploitation of resources and grant interest in future profitability, is a channel which should be explored.

The “Improvement of the Legal Framework for the Cooperation, Fishing Management and Development in West African Coastal States” project has supported some countries in elaborating regulations on artisanal fisheries. The texts try to define zones where all fishing activities are normally subject to artisanal fishermen’s interests. They define the status of management structures involving the administration and fishermen and having consultative skills but likely to develop into a true association in fishing management, even into co-management systems. In this, the Cote d’Ivoire government has elaborated a plan and a regulation for the management of the Aby Lagoon fisheries; in Guinea Bissau a regulation on artisanal fisheries was elaborated after preliminary technical and socio-economic studies; a survey prior to regulating the artisanal sub-sector was undertaken in Senegal, in Guinea a frame-law on inland capture fisheries and fish culture was elaborated.

In Guinea Bissau, community participation is at the centre of many projects. The Buba Rio Grande is one of the favourite barracuda (sphyraenidae) migration and reproduction zones in West Africa. Precautionary management measures have led to the promulgation of a decree which defines and specifies the period when fishing is closed to barracudas in reproduction. Moreover, the Bijagos Archipelago was the subject of a hierarchical identification of sensitive zones and the official creation of the Bijagos
Archipelago Biosphere reserve. In Mauritania, motorized fishing units are prohibited in the Banc d'Arguin natural reserve.

After a long process involving all the actors in the fisheries sector, the Code of Conduct for Responsible Fisheries¹ was unanimously adopted on 31 October 1995 by the FAO Conference. This Code of Conduct, which is world-wide but not mandatory, defines principles and norms applicable to the conservation, management and value-adding of all fisheries. The adaptation of the Code to West African realities and its implementation is, undoubtedly, one of the most important challenges of the coming years.

¹ "Responsible fisheries" is defined, among other things, as an approach implying «...a sustainability of fisheries resources in harmony with the environment; catching methods and aquaculture which do not destroy ecosystems, the resources or their quality; introduction of added value to products, through methods of processing respectful of required health norms and the vigilance of commercial practices, in order to guarantee to the consumer access to quality products.»
4. EXTERNAL ASSISTANCE

4.1. Major orientations

The Gross National Product (GNP) is very low in all the countries of the region. When expressed per capita, it has even decreased these last years in most of the countries of the region. In such conditions, it is clear that foreign assistance is vital to ensure a certain number of development activities. Expressed in percentage of the GNP, this foreign assistance may sometimes seem very high (tab.10) in countries with a million inhabitants or less. This can be easily explained by the fact that assistance projects or basic infrastructures are of a minimum size and as such when their budget is related to the number of inhabitants, it inevitably appears high.

The trend observed in the last two years has increased. Despite the priority given to artisanal fisheries by governments in the region, external assistance is becoming increasingly difficult to come by. It occurs that some projects end and there are almost no new ones starting. This is true for both bilateral and multilateral assistance, as well as for grants and loans.

Many projects focus on the fishing activities essentially carried out by men. Less assistance is given to the processing and marketing sector which is largely dominated by women, except for one regional project. Institutional support projects are also few while the SAPs have important negative effects on fisheries administrations and would often require these administrations to keep pace with the new situation.

One of the major concerns of both donors and beneficiary countries is henceforth the sustainability of the results obtained. But this is not always easy when in the past external assistance replaced, for various reasons, the national private sector. This happens, for example, where there is shortage of hard currency, or high inflation, and therefore difficulty to guarantee a regular supply of inputs at reasonable prices.

4.2. National projects

In Mauritania, the African Development Bank (ADB) is financing a 5 million US $ project on the “Development of Artisanal Fisheries in the South” which covers the coastline from N’diago to Cape Timiris.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>99</td>
<td>21.5</td>
</tr>
<tr>
<td>Senegal</td>
<td>82</td>
<td>13.7</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>292</td>
<td>30.4</td>
</tr>
<tr>
<td>The Gambia</td>
<td>43</td>
<td>13.4</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>113</td>
<td>45.2</td>
</tr>
<tr>
<td>Guinea</td>
<td>62</td>
<td>11.3</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>45</td>
<td>25.0</td>
</tr>
<tr>
<td>Liberia</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>87</td>
<td>13.2</td>
</tr>
<tr>
<td>Ghana</td>
<td>38</td>
<td>9.7</td>
</tr>
<tr>
<td>Togo</td>
<td>47</td>
<td>15.2</td>
</tr>
<tr>
<td>Benin</td>
<td>53</td>
<td>14.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Cameroon</td>
<td>35</td>
<td>5.4</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>85</td>
<td>22.4</td>
</tr>
<tr>
<td>Gabon</td>
<td>136</td>
<td>4.0</td>
</tr>
<tr>
<td>São Tomé &amp; Príncipe</td>
<td>600</td>
<td>171.4</td>
</tr>
<tr>
<td>Congo</td>
<td>50</td>
<td>7.3</td>
</tr>
<tr>
<td>Dem. Rep. of Congo</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>Angola</td>
<td>40</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Source: UNDP, 1997
The target group of this five-year project which started in 1992 is the Imraguen fisherfolk community and the young and unemployed. Its objective is to create direct or inducing jobs for the youngsters and to supply the domestic market with fish. It intends to train 300 artisanal fishermen and 160 outboard engine mechanics. The ADB helps to finance the “Assistance to the Fisheries Sector” project with the Mauritanian government. It includes the construction of an artisanal fisheries port at Nouakchott, the laying of a fisheries fuel pipeline at Nouadhibou, the restoration of the Nouadhibou autonomous port sanitation network and the supply of security equipment. This 15 million US $ project which started in 1995 will end in 1999. The German external assistance, through GTZ, finances and executes the “Counsel-Assistance to the Ministry of Fisheries and Maritime Economy” project which will end in December 1998. It also helps the Government in the surveillance sector.

Three projects have recently ended. First, the “Management of the Baie du Repos” at Nouadhibou financed by the Arab Fund for Economic and Social Development (AFESD). This 7 million US $ project started in 1993 and ended in 1996. It helped construct the Baie du Repos port with an artisanal fishing harbour, fish storage and preservation units as well as a quay for boat repairs. The second phase of the 6 million US $ “Coastal Fisheries” project funded by the Japanese Cooperation helped supply Imraguen villages with drinking water by building a sea water disalinating unit and by buying tank-lorries. The project also included supplying out-board engines, canoes, stores for spare parts and equipment for radio communication. Moreover, Japan financed the construction and equipment of the fish market at Nouakchott. Work began in 1995 and ended in 1997.

In Senegal, the “Assistance, Experimentation and Extension Centre for Artisanal Fisheries” (CAEP) replaced the “Assistance Centre for Canoe Motorization” (CAMP). Apart from providing technical assistance to artisanal fisheries, the project emphasizes experimentation and extension of fishing techniques. Efforts are being made presently to adapt out-board engines to traditional canoes. From 1989 to 1994 Japan financed the Missirah Community Fisheries Centre located in the Fatick region. The project aimed at improving fishing techniques and the processing and marketing of fish, the training of fishermen, the expansion and organisation of distribution networks and the betterment of the target population’s living standard. A second phase of the project that started in 1995 includes a programme for material and equipment supply amounting to 1.7 million US$. The European Development Fund (EDF) and the Caisse Française de Développement (CFD), until 1992, co-financed an artisanal fisheries development project in Zinguinchor (PAMEZ). Since then, they have been financing a second phase called “Artisanal Fisheries in the Casamance Project” (PROPAC) which aims at consolidating achievements, creating additional fishing and processing infrastructures, etc. The “Artisanal Fisheries Development on the Small Coast” Project (PAPEC), financed by ADB, began in 1988. This project is specialized in the financing of equipment, fishing materials, and working capital, as well as the construction of fishing and fish processing infrastructures, etc. It ended in 1995 and a second phase is under study. The Canoe Improvement Project (ATEPAS) consists of studying the possibilities of improving the traditional canoe in terms of stability, longevity and performance. Improved model canoes were produced at the Mbour experimental camp and the popularization process is in progress. Finally, there is the Fisheries Protection and surveillance Project of Senegal (PSPS) whose role is the surveillance of fishing zones.

In Cape Verde, the ADB and the International Fund for Agricultural Development (IFAD) co-financed, since 1987, an “Artisanal Fisheries Development” project. This project which aimed at developing
technical conditions to help increase production and improve fishermen’s living conditions, ended in 1995. Due to progress made by the project, an extension has been approved. In 1993-1994, FAO executed the preparatory phase of a “Fisheries Development” project financed by the Netherlands. This one year phase helped to define the objectives, expected results and activities of the main phase of the three-year project which started in 1994. It aims at increasing fish production, maximizing the use and adding-value of products, mainly for under-privileged local populations and for external trade, through the development of artisanal fisheries on a healthy and sustainable basis. The FOPESCA project is financed by Germany and executed by GTZ. It aims at increasing production and improving marketing conditions on Fogo and Brava islands as well as creating technical conditions to help improve fishermen’s living conditions. The project started in 1995. The French Cooperation and the Netherlands each have a technical counselor at the Ministry of Sea.

In The Gambia, the Japanese Cooperation ended in 1994 after the coup d’etat. No foreign assistance, with the exception of regional and sub-regional projects, is active in the country.

In Guinea Bissau, the Japanese Cooperation is financing the second phase of the 4.5 million US $ Artisanal Fisheries Development Project. The project mainly helped to equip the Uracane Island in the Bijagos Archipelago with two ice plants. In addition, the significant quantity of fishing gears and out-board engines have helped equip almost all the marine areas in fishing equipment. The third phase which consists of constructing an artisanal fisheries complex at Cacine should begin early 1998. The Construction and Equipment of the Bissau Artisanal Fishing Port project, co-financed by ADB, EC and China is at the implementation phase. The boarding ramps for artisanal fishing boats were inaugurated in December 1996. The second phase of the International Union for Nature Preservation project (UICN) for the Sustainable Development of Artisanal Fisheries in Rio Grande de Buba started in 1995. The objective of the project is to guarantee a sustainable utilization of coastal resources for the benefit of communities by providing material and scientific support to these populations and to the institutions concerned. The second phase ended in 1997. The Iles de Paix NGO Development project based in Bolama continues and largely contributes to training in fishing techniques and boat construction in the Bijagos archipelago. The project facilitated regular supply of prime quality fish to the capital. The Advanced Artisanal Fisheries Development project financed by ADB for 5 million US $ and which aims at training and equipping artisanal fishermen is operational.

In Guinea, the Canadian Cooperation and the Cultural and Technical Cooperation Agency of Francophone Countries (ACCT) financed a project on micro-enterprise for female fish-smokers for 300,000 Canadian dollars. The project seeks to increase the production and quality of smoked fish as well as help women to improve their managerial skills through training and literacy classes. It ended in December 1997. The National Fisheries Surveillance Centre (CNSP) is co-financed by Canada and the Word Bank for 7 million US $. It aims at collecting and updating scientific and technical data for the elaboration of a development strategy for the sector and ensuring monitoring, control and surveillance of fisheries in order to enforce the exiting rules. The Fisheries Observatory was established with the help of ORSTOM (150,000 US $) to analyse the dynamics and challenges of the fisheries sector for a rational management of resources. The Kamsar Integrated Artisanal Fisheries Development Project was financed by the United Nations’ Capital Development Fund (UNCDF) for 2.3 million US $, UNDP and the Guinea government for 0.5 million US $ each. The project, which is ending, established an
artisanal fisheries centre and supplied fishing equipment. The Boussoura Motorization Centre and its regional branches in Boffa and Kankan were financed up to 1996 by the Japanese Cooperation and the Guinea government for 5.4 million US$. The project imported and marketed fishing equipment, trained and equipped local mechanics and experimented with fibre-glass boats equipped with in-board diesel engines. Finally, at the government's request, FAO started, at the end of 1995, a TCP project to implement a Master Plan for Fisheries and Aquaculture. The project ended in December 1997.

In Sierra Leone, few projects were suspended since the coup d'etat on 25 May 1997. This involves the West-North-West Artisanal Fisheries and Community Development project (AFCOD), financed by EC since 1989. It is executed by GOPA Consultant Company. The project covers the villages of Goderich, Mahera/Yongoro, Konakridee, Bailor and Rokai. Its objective is to create the conditions for the sustainable development of the activities of the Programme through a decentralization policy in both private and public sectors. Its main achievements include improved boat building, creation of a central supply co-operative establishment of smoking centres at district level, building of social infrastructures, training, etc. It is the same for the Assistance to Artisanal Fisheries project financed by FAO under its Technical Cooperation Programme for 244,000 US$. The project which started in January 1997 should have ended in November 1997. It aims at helping the Sierra Leone government assist fishermen, traders and fish processors who had been displaced because of the war, to renew their activities in the Tombo region and in three other districts. Moreover, the activities of the Integrated Development Project of the Shenge Region financed by UNDP and implemented by FAO and the Sierra Leone government since 1985 were suspended in 1995 due to insecurity in the region.

In Liberia, FAO approved the financing in 1994, from the TCP fund, of an "Emergency Relief to Artisanal Fisheries Sector" project for the benefit of the country which lost almost all its boats and fishing gears during the civil war. The 244,000 US$ project is expected to supply boats, equipment and engines to 1,725 fishermen in 3 counties (Montserrado, Grand Cape Mount and Grand Bassa). The project which started in 1995 should have ended in May 1997. However, it had to be suspended because of renewed disturbances in 1996. FAO, in collaboration with another project (OSRO/LIR/702/DHA) financed by the United Nations' Humanitarian Affairs Department, started a new TCP project in September 1997 which will end in February 1998 and benefit 1,500 disadvantaged fishermen, old soldiers and fish processors by offering them training and material assistance.

In Côte d'Ivoire, the Aby Lagoon project whose first phase was financed by IFAD became operational again in November 1992 with funds from the government. An Advisory Committee was created and an important "statistics and monitoring" component set up. One of the activities undertaken in 1997 was the seasonal closure of fishing and the changing of parts of the nets. The San-Pedro Fishing Harbour Renovation Project financed by Japan for an estimated amount of 10 million US$ started in 1995 and ended in 1997. The project includes the supply of fishing equipment for the development of fisheries in the south-west region (landing quay, smoking hall, ice-making plant, storage, etc.). FAO financed and implemented the TCP project: Elaboration of a Management Plan for Inland Fisheries. The 93,000 US$ project started in 1995 and ended in 1997. The Fight Against Floating Plants Project which concerns lagoon and inland waters began in 1997 with funding from the World Environment Fund (WEF).

In Ghana, the second phase of the Yeji Artisanal Fisheries Integrated Development project started in June 1994 to
end in December 1996. This project is financed by UNDP for an amount of 1.4 million US $ and executed by FAO. The second phase of the project will consolidate the achievement of the first phase in the fields of statistical data collection, basic works for stock assessment, a stock evaluation programme, the improvement of technology in the areas of boat building, fishing and fish processing techniques and engine maintenance. The major activity of the second phase was the construction of and institution of the management of the Community Fisheries Centre. The Centre is almost finished. It cost 1 million US $ and was under the responsibility of the Japanese Cooperation. The “Training and Equipment for the Fisheries Sub-sector” project financed by the government and the World Bank for 10.5 million US $ started in 1996. Its objective is to ensure the long-term sustainability of fisheries resource as well as maximize its contribution to national economy. The project includes the re-organization and training of the Fisheries Department’s staff, stock evaluation and preparation of management plans, development of aquaculture, institution of an MCS system and institutional and legal reforms.

In Togo, the European Union finances the National Agriculture Survey Project, which includes fisheries. Some on the spot financing of activities of young fisherfolk groups is sometimes offered by the French Development Fund and the World Bank.

In Benin, the Lagoon Fisheries project, financed by the German Cooperation (GTZ) since 1986, will continue its activities until end of 1998. It assists the Fisheries Department in seeking solutions to the overexploitation of inland water bodies and the decrease of production and productivity. Its activities aim at rehabilitating the environment through mangroves reforestation, biological fight against water hyacinth, development of alternative sources of income, local management of resources as well as reinforcement of the Fisheries Department. There is also the second phase of the “Fishing Material Gift” from the Japanese government received in 1996. It represents 4 million US $, including the construction of a training centre at the Fisheries Department in Cotonou. The Mono Integrated Rural Development Project financed by ADB includes capture fisheries and fish culture. The project aims at assisting maritime artisanal fishing by granting credits for the purchase of inputs and construction of cold-room infrastructures.

In Nigeria, IFAD is financing the Artisanal Fisheries Development Project for 20 million US $. This project which started in 1991 is still operational in 1997. It grants loans to artisanal fishermen and fishermen’s wives to help them carry on their productive activities. It also provides technical assistance to develop those activities, and ensure the setting up of necessary community facilities. The project also includes a training component, as well as the experimentation and introduction of improved inputs. The project is implemented in Rivers, Cross River and Akwa-Ibom States. The project for an increase in artisanal fisheries production is financed by the ECOWAS Fund. This project mainly aims at supplying artisanal fishermen with credit so that they can buy the inputs necessary for their activity. The total amount of this project, which started in 1991 is 6 million US $, including a loan of 4.5 million US $. The project which is implemented in Bendel, Ondo and Sokoto States still continues. The World Bank finances a project for the monitoring, control and surveillance of marine resources. This project aims at preserving marine resources through a regular assessment of coastal stocks. For an amount of 9.3 million US $, this project started in 1991 and will end in the year 2000. ADB is assisting the government in the implementation of the Lagos Fishing Port Project at Kiriki since 1993.

In Cameroon, FAO is financing, with the funds of its TCP, a project to support the
implementation of a financing unit for artisanal fisheries. This 173,000 US $ project started in 1997 and will end in 1998.

In Equatorial Guinea, the African Development Bank financed the elaboration of a Fisheries Master Plan in 1997.

In Gabon, there was no foreign assistance project in 1997. However, the French Cooperation placed an advisor at the Fisheries Department and offered an ice plant with a capacity of 2.5 t. per day for the Etimboue Community Fisheries Centre.

In Sao Tome and Principe, the second phase of the Artisanal Fisheries Project is co-financed by IFAD (a loan of 1.5 million US $), the FAC (donation of 900,000 US $) and Japan (donation of 1.8 million US $ in equipment). The major activities of the project which started in 1990 are: the improvement of fishing techniques, the sale of material and equipment as well as socio-economic support to fishermen and women fish traders. As for Canada, it financed a project of fishery resources evaluation which ended in 1997. The 600,000 US $ project had started in 1993. A computerized statistical data system project, which was financed by FAO for 102,000 US $ started in 1996 and ended in December 1997.

There is no national project for the fisheries sector in Congo since the end in 1991 of the Artisanal Maritime Fisheries Assistance Project Financed by CFD.

In the Democratic Republic of Congo, the fisheries sector did not benefit from any foreign assistance since the 1993 suspension of the project of assistance to the implementation of the Fisheries Master Plan, as a result of socio-political disturbances. This project which started in 1989 was financed by UNDP and executed by FAO. In 1997, UNDP however gave 145,000 US $ to the National Service for the Promotion and Development of Fisheries (SENADEP) to elaborate a plan for the re-enhancement of fisheries.

In Angola, the French Cooperation provides technical assistance to the Artisanal Fisheries Institute (IPA). The government undertook the restoration of some centres for the support of artisanal fisheries and IPA provincial delegations. Moreover, some projects are operational in industrial fisheries: a naval repairs workshop financed by Kuwait, delivery of 3 fisheries surveillance patrol boats by CFD, the renovation of many cold storage facilities by the EU.

4.3. Regional projects

Regional projects are an essential element of regional cooperation in fisheries. Unfortunately, because of political reasons, but also, and perhaps even mainly, because of the administrative procedures imposed by the multilateral donors (UNDP, EU) their financing is always difficult.

The Regional Aerial Surveillance of Fishing Zones Project financed by Luxemburg started in 1993 with a preparatory phase. The main phase started in July 1995 with its base in The Gambia. The countries covered are those of the Sub-Regional Fisheries Commission (SRFC) as well as Sierra Leone. The project’s objective is to indirectly help in the establishment of a national maritime fisheries management systems. Its major activities include aerial surveillance, on-shore and flight training for monitoring, control and surveillance (MCS) operations and the development of a sub-regional database.

The Canadian International Development Agency (CIDA) will implement the “Assistance to Fisheries Resources Management” Programme (AGREH) in collaboration with SRFC to provide the Commission and member states with necessary elements for taking decisions on sustainable resource exploitation. The Programme has four components: resource management;
monitoring, control and surveillance; resource evaluation; and training - sensitization. It will be managed by a coordination unit based in Mauritania. A preparatory phase to the programme was undertaken under an Assistance to Fisheries Resources Management Initiatives project (SIGREH). The 18 month project is for 1 million Canadian dollars.

The West African Regional Programme for the Utilization of Fishery Products (WADAF) is financed by EU. The programme, with its head-office in Abidjan, covers ECOWAS countries. It aims at reducing the physical losses in fish, improving the quality of fresh and processed products as a means of obtaining an increase in private operators' incomes, and expanding regional trade in artisanal fisheries products. In 1994, this Programme entered its main phase of five years and is operated by a consortium of four NGOs, namely INADES (Cote d'Ivoire), Credit Union (Ghana), CREDETIP (Senegal) and CEASM (France).

The Regional Committee for Fisheries of the Gulf of Guinea (COREP) has some identified projects in various fields: training (Cap Esterias, Gabon), research (Pointe Noire, Congo) and boat building (Sao Tome and Principe). However, it should be noted that none of these projects is operational yet.

Still with the financing of Denmark, the Programme for Integrated Development of Artisanal Fisheries (IDAF) with headquarters in Cotonou, Benin, started its third phase planned for a period of 4.5 years in July 1994. It aims at strengthening the national capacities as regards the management and development of fisheries resources while focusing on artisanal fisherfolk communities. It also seeks to promote empowerment and decision-making at the level of these communities through a participative approach, training and access to information. It will end in December 1998.

4.4 Projects in the pipeline

A number of national and regional projects have been identified and are at various stages of progress in relation to their financing.

4.4.1 National Projects

In Mauritania, Japan was contacted for the construction of a fish market in Nouadhibou and the development of fishing villages.

In The Gambia, a feasibility study financed by the Islamic Development Bank for the construction of a fishing port was carried out in 1993. The Japanese government was contacted to finance the structure and it showed interest. A draft proposition to extend the Tanji and Gunjur coastal fishing centres was elaborated. The project intends to provide infrastructure and land facilities to improve fish handling and processing thus reducing post-harvest losses. Preliminary contacts have also been made with the Japanese government.

In Guinea, the government is seeking funding for various projects identified during the elaboration of the Master Plan. Well advanced contacts have been made with the French and Canadian Cooperation Agencies, and ADB.

Liberia introduced 4 requests to donors for artisanal fisheries and aquaculture development projects which are a priority to the country.

Cote d'Ivoire is studying the creation of a Fisheries and Aquaculture Fund.

In Togo, the fisheries and aquaculture master plan has identified a number of projects whose financing will be sought at the forthcoming donors’ round-table. Discussions are being held with Japan for a new aid to the fisheries sector.

Benin is holding discussions for a third phase of the Japanese grant aid. A feasibility
study of a water bodies management project in the south of Benin was financed by ADB's Technical Assistance Fund. A project for the management of humid zones, including fisheries, may also begin in 1998.

In Nigeria, a project for assistance to women in some fishing communities has been submitted for financing to UNFPA.

Cameroon has a project for the construction of small ice plants in some landing sites. China has indicated its interest and the project could start in 1998. Moreover, a donors'round-table is expected to discuss the various projects identified during the elaboration of the master plan on fisheries and aquaculture. A request was also submitted to FAO for assistance in establishing a computerized fisheries statistical system.

At the end of 1997, Gabon negotiated a 12.5 million US $ loan from ADB for a programme to support artisanal fisheries by establishing community fisheries centres, developing fish culture and helping in coastal surveillance.

In Angola, IFAD recently prepared a project for artisanal fisheries in the Zaire province, in the north of the country, which should begin in 1998. A project on assistance to artisanal fisheries in Ambriz was also prepared for co-financing by an oil exploration company, AMOCO. The Artisanal Fisheries Institute (IPA) will be the government implementation agency and FAO the supervisory Agency. This projet should start in 1998.

4.4.2 Regional Projects

At the sub-regional level, the IDAF Programme helped SRFC member states and Sierra Leone to prepare a project document for the improvement of safety at sea for artisanal fishing units. The budget is estimated at 2.4 million US $ for a 3 year period. It was submitted to the donors by the Sub-regional Fisheries Commission.

The Fisheries Information and Analysis System (SIAP) project is being prepared by the EU and SRFC. The budget is estimated at 3 million ECU from EDF regional resources for a 3 - 4 year period. The main aim of the project is to strengthen national capacities in statistical data collection and processing and establish a centre to centralize and analyze data at the sub-regional level for better management of fisheries resources and sustainable fisheries development.

A second phase of the Improvement of the legal framework of cooperation, management and development of fisheries in West African Coastal States project which was financed from May 1994 to July 1997 by the EU is under study. The project's general objective was to provide the states of the region, members of the Ministerial Conference, with assistance on legal issues so that they could maximize their opportunities within the framework of the new Law of the Sea.

To help West African countries associated with the IDAF Programme implement the Code of Conduct for Responsible Fisheries beyond 31 December 1998, a project proposal entitled West African Programme for Responsible Artisanal Fisheries was elaborated and submitted by FAO to potential donors. The 5 year Programme, is centred around 4 basic components: (i) improving the institutional framework at the national level for the implementation and dissemination of the Code of Conduct in artisanal fisheries; (ii) elaboration and implementation of coherent national policies on responsible artisanal fisheries; (iii) identification and promotion of sustainable and responsible management strategies at the national, sub-regional and regional levels; and (iv) establishment of an effective system for the social, economic and biological monitoring of artisanal fisheries.
ANNEX I

Bibliographical References

I. Published documents


II. IDAF Liaison Officers Reports


## ANNEX 2

### General framework for monitoring artisanal fisheries in West Africa

<table>
<thead>
<tr>
<th>Type of survey</th>
<th>Objectives</th>
<th>Main activities</th>
<th>Data to be collected</th>
<th>Periodicity</th>
<th>Tools</th>
<th>Key informant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frame survey</strong></td>
<td>Inventory of production means</td>
<td>Census of fishing units and fishermen</td>
<td>Number, activity et size of fishing boats, types of fishing gear, origin of boat-owners, means of propulsion, number of fishermen</td>
<td>At least every 3 years with spot checking every year</td>
<td>Records, interviews, Focused Group Discussions (FGD), Semi-Structured Interviews (SSI), Mapping</td>
<td>boat-owners, crew, representatives of economic operators, local fisheries administrators</td>
</tr>
<tr>
<td></td>
<td>Regular updating of the dictionary of fishing villages</td>
<td>Survey on fishing villages and landing sites</td>
<td>Infrastructures and services related to fisheries (water, health, education, electricity, markets, supply centres, engine workshops, development projects, boat-building workshops, fish products utilization, profile of fishing activities, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Catch assessment survey</strong></td>
<td>Assessment of total production and productivity per type of fishing unit</td>
<td>Data collection on fishing effort and catch</td>
<td>Catch per species, fishing effort, length frequency</td>
<td>Continuous monitoring</td>
<td>SSI, FGD, occular inspection, weighing</td>
<td>boat managers</td>
</tr>
<tr>
<td><strong>Survey of organizations and institutions</strong></td>
<td>Assessment of organizational and institutional arrangements</td>
<td>Analysis of local and external organizational and institutional arrangements</td>
<td>Number of organizations, memberships, structure, rights, rules, regulations</td>
<td>One-off every 3 to 5 years</td>
<td>Records, interviews, SSI</td>
<td>representatives of organizations and institutions</td>
</tr>
<tr>
<td><strong>Costs and earnings survey</strong></td>
<td>Assessment of the profitability of fishing units and value added secured by the sector</td>
<td>Survey of costs and earnings of fishing units</td>
<td>Fish price at landing site, operation costs, crew size, sharing system</td>
<td>Continuous</td>
<td>Interviews, visits</td>
<td>boat-owners or boat managers</td>
</tr>
<tr>
<td><strong>Socio-economic survey</strong></td>
<td>Assessment of the socio-economic structure of the system</td>
<td>Baseline survey of a sample of fishing units</td>
<td>Investment costs, fixed costs, social organisation, employment, socio-economic characteristics, perceptions and strategies, relations between the different elements of the system</td>
<td>One-off, every 3 to 5 years combined, for practical reasons, with frame survey</td>
<td>Interviews, FGD, occular inspection, SSI</td>
<td>boat-owners, boat managers, crew, fish processors, fish traders</td>
</tr>
<tr>
<td></td>
<td>Assessment of characteristics of stakeholders</td>
<td>Analysis of demographic, economic and socio-cultural features</td>
<td>Demography, economic activities, occupational structure, cultural features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marketing survey</strong></td>
<td>Assessment of the price structure, the profitability of the business and the flow of products</td>
<td>Survey of costs and earnings of fishmongers and distribution network</td>
<td>Fish price at each stage of the distribution chain, operation costs, fixed costs, volume of transactions</td>
<td>One-off, at least for two months</td>
<td>SSI, FGD, market visits, weighing, mapping, temporal diagrams</td>
<td>fish traders, consumers</td>
</tr>
<tr>
<td><strong>Catalogue of fishing gear</strong></td>
<td>To produce a baseline document for mesh size regulations</td>
<td>Data collection on fishing gear and techniques used in marine waters</td>
<td>Characteristics of fishing gear and techniques</td>
<td>One-off, depending on the evolution of the sector</td>
<td>Interviews, diagrams, measuring, fishing trips</td>
<td>fishermen</td>
</tr>
<tr>
<td><strong>Safety at sea survey</strong></td>
<td>To measure the importance of accidents at sea</td>
<td>Survey of accidents at sea</td>
<td>Causes and et effects of accidents at sea (material and physical damages)</td>
<td>One-off, every year</td>
<td>SSI, interviews, census, records</td>
<td>fishermen</td>
</tr>
</tbody>
</table>
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