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Marine Sciences in

Mauritania, Senegal, Sierra Leone, Ghana and Nigeria
and the Scientific, Technical Research Commission of
the Organization of African Unity

(OAU/STRC)
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Mission Report

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Mission Report

(Nouadhibou and Nouakchott, 3-6 March, 1977)

Summary

Introductory Remarks

Mauritania has an abundant living marine wealth which is virtually exploited by foreign fishing fleets. The Mauritanian participation in exploiting these marine resources is seriously hampered by (a) lack of trained manpower at middle and higher level (b) inadequate information based on scientific research directed to improved management of marine resources and the coastal area.

The main purpose of the mission is to establish contacts and explore ways and means to assist Mauritania in developing its national infrastructure, especially in training of specialists.

Observations

1. A considerable awareness of the role of the marine resources and its potential in the economy of Mauritania is emerging. The "Ministre des Pêches et Marine Marchande" was created in 1976.
2. The fishing grounds are exploited by foreign fleets, only a small portion of the catch is landed in the main fishing port of Nouadhibou. A new policy of establishing joint projects with foreign fishing fleets is expected to develop soon.
3. The present "Laboratoire des Pêches" in Nouadhibou is very weak and needs better orientation. An extremely interesting project "Centre de Sciences et de Recherches de l'Economie des Pêches" will be established in Nouadhibou, as a part of the Agreement with USSR regarding fishing rights in the economical zone of Mauritania.

Recommendations

1. To the Division of Marine Sciences, assistance under regular programs in training and education, e.g. fellowships, shipboard fellowships, travel grants, and training courses e.g. request of Mr. Sy for training in population dynamics.
2. To Education and Science Sectors, possibility of introducing marine sciences in the plans of higher education, if Unesco is called upon as a follow-up of the mission report (1977) "Stratégie et méthodologies de la réforme de l'enseignement mauritanien".

3. To Science Sector : to study the possibility of inviting the "Ministre des Pêches et de la Marine Marchande" by the ICG/ICP at appropriate time in future for the purpose of acquainting the Minister of Unesco programs in marine sciences and the activities of the Science Sector in general. Ways of rendering assistance to Mauritania through Unesco activities in this field can be discussed. It may be useful to prepare a brief visit for the Minister to one or two marine science institutions in France or Western Europe.

Introduction

The part of the Atlantic Ocean waters adjacent to Mauritania are known for their high fertility. Mauritania has a broad shelf area subject to annual upwelling which enriches the waters in nutrient salts, and provide excellent environmental conditions for abundant marine resources. Mauritania lies in a central position with respect to the region covered by the IOC/FAO/ICES Programmes "Cooperative Investigations of the Northern Part of the Eastern Central Atlantic" (CINCEA).

The Mauritanian waters are very attractive to fishing fleets of other nations, and it can be safely stated that the marine living resources of Mauritania are mainly exploited by foreign fleets with a very minor participation by Mauritanian vessels. It is estimated that about 300,000 tons of fish are caught each year in the fishing grounds off the Mauritanian Levrier Bay, by fishing boats of all nationalities; about 30,000 tons are landed in Nouadhibou, of which the greater part are dried. About 8,000 tons of fish are exported annually to other African countries.

After the independence in 1960, Mauritania attempted to develop its own marine fisheries. One should recognize that a large part of population are nomads and semi-nomads and are hardly adapted to seagoing activity. However, the nomadic life is declining in view of the recent draught, and also of various agricultural and industrial opportunities offered since few years. The earlier project of purchasing and operating fishing vessels independently met great difficulties, and was replaced by a policy to license foreign flag vessels to fish in Mauritania's waters. Mauritania has presently a number of agreements with foreign fleets, including those of USSR, Japan, Spain, France, Portugal, S. Korea, Poland etc... There are mainly two types of contracts. The first one sets a number of conditions based on the total tonnage of fishery vessels of one country in return to fishing rights in Mauritanian waters. At present the general conditions are to pay about 2000 per ton per year, to provide 800 kg of fish per ton per year for local fishing factories, and to train and give working opportunities to five Mauritanian personnel (normally sailors). In addition foreign vessels are required to carry out certain duties related to fishery statistics and management. The second type of agreements include certain types of technical assistance. Under this second type of agreement a "Centre de Science et de Recherches d'Economie de Pêches" will be established as a centre of oceanographic and fisheries research, within the framework of an agreement with USSR.

The continental shelf of Mauritania is 30 to 90 miles wide. It was decided in 1972 to extend the Mauritanian territorial waters to 30 miles. The envisaged 200 miles economical zone under consideration in the Law of the Sea Conference, will give Mauritania an abundant wealth, which will require corresponding responsibility in research, management and surveillance.

At present, the foreign fisheries vessels in Mauritania are not allowed to fish within the 3 miles zone, but according to their tonnage are allowed to fish in the 3-6 miles zone (less than 400 tons) or 6 to 12 miles (less than 800 tons) and 12 miles and beyond for fishing vessels of more than 800 tons.

The coastguard vessels of Mauritania are doing their best to protect the Mauritanian waters, but there are many reports of foreign fishing vessels operating in those waters without license. According to the Secretary General of the "Ministère des Pêches" the present policy of granting licenses to foreign vessels is being tightened and a new policy will be gradually developed to establish mixed companies for the exploitation of the Mauritanian marine wealth.

Landbased facilities and fish processing industry are based in Nouadhibou, the main fishing port, where the construction of a fishing harbour was started in 1965, and completed in 1968. Construction is presently going on to enlarge this port since the capacity of the present port could not handle the increasing activity in fish industry.

In order to emphasize the role played by the fishery industry in the national economy of Mauritania, a new ministry was created on 17 June 1976, the "Ministère des Pêches et Marine Marchande". This Ministry comprises the old "Direction des Pêches". A position paper setting up the guidelines for the state policy in fisheries, will be soon discussed by the Mauritanian National Council. Among the important points discussed in this document:

- Artisanal fisheries,
- Training manpower at the middle and higher level,
- Industrial fisheries,
- Protection of marine zone,
- Conservation of marine resources.

In order to fulfill these objectives, the Ministry will be reorganized to comprise a "Direction de l'Océanographie" which will include the "Laboratoire des Pêches" in Nouadhibou and will handle co-operative research programmes, visiting research vessels, and relations with international organizations such as IOC/Unesco ... etc.

Marine Science Research

Laboratoire des Pêches, Nouadhibou

The main activities of marine science research are situated at Nouadhibou (Ex Port Etienne) where the Laboratoire des Pêches was created in 1959. The Laboratory performs various functions including : oceanographic

research, sanitary control of the production, technology of the fishery products, fishery statistics and regulations. The Laboratory acquired in 1961 a small research vessel R/V L'ALMORAVIDE 17 m long, and 37 tons. The ship was active in the preceding years in making regular oceanographic observations along the Mauritanian coast and particularly on the "Banc d'Arguin". However, according to the ship's Captain (under bilateral agreement with France) the activity of the ship has been greatly diminished during the last few years (see also the Laboratory Bulletin No. 4, p. 5). The Laboratory publishes its annual "Bulletin" since 1972. Bulletin No. 4 December 1975 is the last issue.

The Laboratoire was a part of a veterinary clinique, and the "Direction des Pêches" was for sometime part of the "Direction d'Elevage et Production Animale". Almost all the directors of the Laboratory since its creation in 1950 were veterinarians. They were all French until 1966 when Mr. M'Dao became Director, followed now by Mr. Ba since 1975. This strong connection with veterinary sciences, has influenced greatly the development and the present structure and activity of the Laboratory.

The Laboratory was enlarged in 1974 to accommodate an FAO project, which is executed by Mr. Z. Gree, expert in Fish Technology.

The "Laboratoire des Pêches" is composed of the following laboratories:

1. Laboratoire de Chimie,
2. Laboratoire de Bactériologie.

These two laboratories are concerned with fish products. Their equipment was provided by a Swedish Norwegian food production company (ASTRA). A specialist from Sweden, Mr. Sangquist, worked for some time with a Mauritanian who has since left the Laboratory. The two laboratories are partially functioning through Dr. Ba, the Director of the Laboratoire des Pêches.

3. Laboratoire de Technologie du Produit des Pêches

This laboratory was established in 1974 through the FAO project. Almost half of the equipment ordered has arrived and the expert finds great difficulty in performing his duties without receiving the rest of the equipment. The main function of the laboratory is to develop the technology of the fishery products. It comprises two sections for artisanal fisheries and industrial fisheries.

4. Laboratoire de Biologie

This Laboratory is mainly concerned with statistics and population dynamics. It is also partially active by Mr. Si, and Mr. J. Jaset. The latter is a French specialist of background in veterinary medicine and oceanography, under bi-lateral agreement with France (Coopérants français).

5. Laboratoire d'Océanographie "Echantillonnages"

This laboratory contains salinometer, and a Beckmann spectrophotometer. The two latter laboratories are those which lie within the real scope of marine sciences. During my visit, I met Mr. Gree, the FAO expert. Unfortunately Mr. Ba and Mr. Si were outside Nouadhibou. I met Mr. Si later in Nouakchott. One can easily observe that the activity of the laboratory is seriously reduced by the shortage of manpower, and the occupation of the

two Mauritanian specialists by many administrative responsibilities.

The new "Centre de Sciences et de Recherches d'Économie des Pêches, Nouadhibou"

As a result of the "Accord Gouvernemental" between USSR and Mauritania, on 15 February 1973 and the Protocols of 5 May 1976, a research centre will be established in Nouadhibou at Connaître (10 km south of Nouadhibou) on the Gulf of Levaner. According to the Agreement, the Mauritanian Government has provided a plot 20,000 m² with a 100 m on the sea front. The centre is expected to be finished by 1978, and according to the detailed study furnished by the Soviet side, the Institute will comprise the following sections:

- Laboratoire des ressources des pêches,
- Laboratoire de l'océanographie des pêches (population dynamics and stock assessment, physical, chemical and geological oceanography)
- Laboratoire d'Hydrobiologie (plancton, benthos etc...)
- Laboratoire des instruments de pêches,
- Laboratoire de l'aquaculture
- Laboratoire de statistiques et d'économie
- Aquarium.

The six laboratories and aquarium will require 17 research workers, 15 technical assistants. It is envisaged that the Soviet side will furnish the required specialized manpower until such time when the Mauritanian trainees arrive back from their studies.

Such project will give Mauritania the essential base to develop its marine science capability. The project is one of the very few, well conceived projects, which I have seen in the developing countries.

Training in Marine Sciences

It is of interest to note the background and experience of the available staff.

- Dr. Mamadou M'Bared Esq., Director of the Laboratory/Veterinary sciences for five years in USSR. Visits to fishing industry in USSR. PAO fellowships of 9 months at the Institut Scientifique et Technique des Pêches Maritimes, ISTPM, Nantes, France.

- Mr. Mousa Arouna Sy, biologist statistician. Ecole Nationale des Cadres Bureaux, 4ème section : Océanographie des Pêches, Dakar (5 years study). Since 1970, participation on board research vessels visiting Mauritania waters (5-7 cruises). PAO/DANIDA Training Course on "La méthodologie de la science halautique", Tunis, 1974.

Several Mauritaniens are studying marine sciences, fisheries and related subjects abroad, mainly in USSR, France, Spain, Portugal, Romania, Bulgaria. It should be noted that in a young country like Mauritania, there is a considerable proportion of specialists who leave their technical fields to administrative and higher positions which are not always related to their fields of specialization. Example is the case of Mr. Dao, who was the previous director of the Laboratoire des Pêches, and presently chargé de mission au Ministère d'Etat à la Planification et Développement Industriel. He studied veterinary sciences followed by one year fellowship in marine biology and oceanography in Paris.

The problem of manpower training is a significant problem in Mauritania, and receives considerable attention from the Government. The "Ministre des Pêches et de la Marine Marchande" considers the problem especially that related to the middle level manpower as one of the most urgent, and gives it a high priority within its programme. However, Mauritania is completely dependent in training of the required high level specialists on training abroad. According to Mr. Diop the Minister of National Education, the country has no immediate plan to establish a University. Instead, the accepted policy is to establish specialized institutions. The need for high level specialists in marine sciences can be covered by introducing this specialization in one of the higher institutions under consideration. When I brought to his attention a previous proposal of including marine sciences in the new project of the "Institut Polytechnique", he informed me that he considers the Polytechnique less convenient for this purpose. The plans are already well advanced, and more important the nature of study is less compatible with marine sciences. On the other hand, the Minister referred to the project of the Institut Agronomique et Zootechnique, the feasibility study of which was carried out by Unesco (See Unesco Report : Mauritania, Stratégies et méthodologies de la réforme de l'enseignement mauritanien, No de série : 3183/HED.ED/AF, Paris, Juin 1975). The Minister proposed to include a section on marine sciences in this project and considered Unesco involvement with that feasibility study as opportunity to express such need, when the plans become more definitive in the future.

It was clear from my discussions and observations that training in marine science at higher education level could be seriously considered only after satisfying the basic needs of the country in higher education. The country is in severe shortage for highly trained manpower in essential fields such as teaching at the secondary schools, engineering and agriculture.