

INDIAN OCEAN PROGRAMME

**development of fisheries
in the exclusive economic zone
of the seychelles**



UNITED NATIONS DEVELOPMENT PROGRAMME



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

DEVELOPMENT OF FISHERIES IN THE EXCLUSIVE
ECONOMIC ZONE OF THE SEYCHELLES

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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ABSTRACT

Based on a review of existing resource data and past fishing experience in the Zone, the report recommends licensing of foreign tuna longlining and pelagic trawling, subject to annual review, as well as a two-year licence to a pole-and-line skipjack fishing company. A proposal is made for the upgrading of indigenous fishing.

A series of questions posed by the Government concerning legal aspects of the Zone are answered, including statements of international law and the domestic law of other countries regarding regulation of foreign vessels in the Zone.

The Mission, composed of Mr. Robert L. Payne, Senior Fishery Adviser, Indian Ocean Programme and Mr. Michel Savini, Legal Consultant, Indian Ocean Programme, visited the Republic of the Seychelles from 5 to 10 March 1978.

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1. TERMS OF REFERENCE

The initial terms of reference of the Mission framed by the Seychelles Government were:

"We would welcome immediate advice from FAO on how to deal with further applications from foreign concerns and Governments, in relation to fishing activity within our EEZ. Probably a two-man delegation, including somebody with legal competence, on a one-week assignment should be sufficient. I leave it to you to decide on the most suitable team to assist us. If I may add, it would be most useful if this mission could be accomplished in early February".

On arrival of the Mission in the Seychelles, the following questions were presented to it:

- "(a) Do the Maritime Zones Act of 1977 and the EEZ Order of 1978 adequately protect the fishing rights of Seychelles from the shoreline to the described limits of the EEZ in both pelagic and demersal phases?
- (b) How does international law enable us to deal with foreign registered vessels who are apprehended fishing within Seychelles' claimed EEZ without licence? Is there a recognized system of penalties?
- (c) What are the rights of the Government of Seychelles in respect of vessels licensed to fish? What types of restrictions are we able to place on them?
- (d) To what extent can the Government of Seychelles refuse to allow foreign vessels into our EEZ in view of the intention of Government to exploit them within the next two years?
- (e) What terms can normally be demanded in return for the licensing of vessels and what sort of legal recourse is open to Government if these terms are broken by the other party?
- (f) Are joint ventures preferable to straightforward licensing, and if so, in what form?
- (g) What is the recommended form of corporate structure for the proposed Seychelles Fisheries Corporation?"

2. SUMMARY OF FINDINGS

2.1 With regard to dealing with "applications from foreign concerns and Governments in relation to fishing within (the) EEZ" we recommend that the Government of the Seychelles adopts a tri-sectoral development policy under which:

- (a) Foreign tuna longlining and factory ship pelagic trawling would be licensed to produce the maximum net return to the Seychelles. The number of tuna longliners would be unlimited but the pelagic factory trawlers would initially be six or less.

The tuna longline license fee would be about \$15.00/GRT/month or any part thereof. Radio check-in would be allowed but physical checkout and license payment would be required. Catch reporting would also be required. The license and fee structure would be reviewed at the end of the year.

Pelagic trawling license fees would be about \$5.00/GRT/ month. Radio check-in would be permitted but physical checkout and license fee payment would be required. Provision would be made for Seychelles observers to be aboard and for the reporting of catch, and biological and oceanographic data.

The licence and fee structure would be reviewed annually and if, in the opinion of the Seychelles authorities, the bringing of the enterprise under Seychelles jurisdiction was warranted, the fishing entity would be allowed two years in which to decide, at its option, whether to establish a domestic Seychelles corporation or to leave.

- (b) A two-year licence would be granted to a qualified skipjack pole-and-line fishing company to operate up to ten pole-and-line vessels within Seychelles waters, at the end of which time the enterprise would, at its option, place its assets and enterprise under the Seychelles flag or leave. The license conditions would include:
- permission to catch bait and fish without restraint in Seychelles waters subject only to avoiding conflict with the indigenous fishery;
 - permission to offload at sea under observation of Seychelles authorities;
 - payment of a fee of \$10.00/ton of fish caught;
 - full reporting of all baiting and fishing operations;
 - provision for Seychelles observers to be on board the vessels.
- (c) A programme to upgrade the indigenous fishery (through technological change) will be instituted.

Trolling for large pelagics, gillnetting, purse seining with light attraction for small pelagics, crustacea fishing and small boat trawling would all be included in a programme of indicative fishing with a follow-up loan and grant programme to transfer the successful techniques to local hands.

A research programme to ensure that no permanent resource damage results from the programme is essential.

FAO can assist in the formulation and execution of such a programme. Large vessel trawling of demersal species would be prohibited.

2.2 Legal

In summary, the responses to the queries put to the Mission on legal aspects as set out in the first part of this report are the following:

- (a) The Maritime Zones Act of 1977 and the Exclusive Economic Zone Order of 1978 merely establish the EEZ. There is still need for implementing legislation providing for the management and conservation of fisheries in the zone.
- (b) Under International Law, coastal States are entitled to seize and take legal procedure against foreign registered vessels caught when fishing within the waters under their jurisdiction. There is no recognized system of penalties.
- (c) The present report describes various means already adopted by recent State practice, some of which the Government of Seychelles may wish to adopt.
- (d) The Government of the Seychelles may refuse to allow foreign vessels into its EEZ in view of its intention to exploit it within the next two years.
- (e) The present report describes the terms of licensing which are currently required according to recent State practice which the Government of the Seychelles may wish to adopt in whole or part. Legal recourses are normally laid down in national legislation. This could include forfeiture of catches, monetary penalties, imprisonment, if necessary, and suspension or cancellation of licences.

- (f) It is recommended an interim period of straightforward licensing for certain fisheries followed by domestication of the foreign fishing industries whether under joint venture or some other appropriate arrangement.
- (g) The corporation which is to be set up to hold the boats, facilities and other aspects could be a Statutory Corporation or a simple company under the Companies Act, albeit wholly owned by the Government. The structure of the proposed management company should be such as to enable professional management expertise to be brought in with relative flexibility to exercise management powers. At the same time it should ensure that the foreign manager makes an adequate financial contribution and has enough at stake to encourage effective management.

2.3 Enforcement

A twin engine small aircraft operating in conjunction with a fast patrol vessel and the necessary back-up personnel is the minimum enforcement mechanism required to ensure the integrity of the Seychelles EEZ.

3. BACKGROUND

3.1 Policy

The primary objective of fisheries development, according to the Government's First National Development Plan, 1977/81, is to ensure a sustained yield of fish at fair prices to meet the present and future needs of the Seychelles market. Economic growth, export earnings and the creation of employment opportunities are complementary policy objectives.

3.2 Resources

The following surveys and reports are relevant:

- Wheeler and Ommanney (1948-49)
The Estimated Annual Yield of demersal fish from the Seychelles Plateau was 52 080 short tons and from the Amirante Plateau 19 069 short tons. This summary concluded that 3 640 square miles of the Plateau were productive and that the central 7 450 square miles were comparatively sterile.
- "Koyo Maru" Shimonoseki University 1968 - Trawl Survey
- Ross Group, Australia, Survey of Crustacea - report unavailable
- France, Tuna Survey 1972 using the vessel VAUBON - report unavailable
- East African Marine Fisheries Research Organization by the vessel MANIHINE, prawn survey 1972 - report unavailable
- USSR survey - report unavailable
- FAO/IOP Research Vessel PROFESSOR MESYATSEV 1977 - report in preparation
- "A Preliminary Analysis of the Fishing Fleet of the Seychelles" April/May 1977 by Fisheries Development Ltd.
- Dr. John Tarbitt, Report of October 1977
- "Fish Consumption and Expenditures on Fish in the Seychelles" Fisheries Development Limited, February 1978

- "La Pêche Thonière à Madagascar" May 1973-February 1975; ORSTOM. This document reports the catch rates and other implications of a 9-boat skipjack pole-and-line joint venture based at Nosy-Bé in Malagasy which fished at times in the western Seychelles area.

A precise assessment of the magnitude of the standing stocks or their potential annual yields is not possible with the data available. The order of magnitude of potential annual yield estimates, however, might fall within the following ranges:

(i)	demersal, reef	5 000 - 40 000 tons/year
	demersal, trawl	5 000 - 15 000 tons
(ii)	small pelagics	40 000 - 80 000 tons
(iii)	large pelagics (skipjack, etc.)	20 000 - 30 000 tons

It must be emphasized that the data underlying the above figures are weak, and the figures are indicative at best, particularly with respect to large pelagics and reef demersal species.

3.3 Historical Highlights

A number of small boat mothership operations, using "baby clippers" or open boats as their supply sources, have operated in the past but none do now.

The "Seychelles Fishing Company" operated sequentially two motherships (the 394 ton MASCAREIGNES II and the 150 ton VENDOME) together with a fleet of handline reef fishing boats in cooperation with Reunion interests in 1974. Although the results were promising, the lack of a cold storage base impeded the operation and it was terminated.

The most recent, SEYCAT, 90% Greek-owned and 10% Seychellois, utilized two small Greek freezer trawlers as motherships and 21 dories (20 ft overall) as catches, and employed 121 Seychelles fishermen. It caught 478.5 tons of reef demersal fish from September 1976 to February 1977 in 79 fishing days and took the frozen product to Greece in the trawlers on a rotational basis. The licence fee was 12% of catch value, but the licence fees were returned upon suit by the Company. The Company no longer operates in the Seychelles.

A nine-vessel livebait skipjack joint venture, with Kagai Gyogyo of Japan as the offshore partner, operated from Nosy Bé in Malagasy from May 1973 to December 1974. The vessels fished seasonally in waters now (since August 1977) within the Seychelles EEZ. The vessels were 37 to 40 m overall and from 192 to 214 Gross Registered Tonnage. They caught 3 776 tons (of which 3 299 tons was skipjack) in 1973 and 11 183 tons (of which 8 956 tons was skipjack and 2 227 was yellowfin) in 1974. The daily catch rate varied from 1.89 tons/day in August 1973 to 10.49 tons in November 1974. The average annual catch per boat was in excess of 1 000 tons. Fishing was carried on throughout the year. How much of the catch was gleaned from what are now Seychelles waters is not known.

The French Government has provided a 100-ton cold storage and five ton/day blastfreezing facility in Mahé; it will be run by the Seychelles Government, and will commence operations in 1978.

Three local fishing companies are exporting frozen fish to Reunion (90%), to France and to South Africa.

3.4 The Present Situation

The present fishery consists of:

- pirogues, 16 ft to 22 ft (dugout canoes)	8
- catiolos, 16 ft to 22 ft (a clinker-built derivation of the pirogue)	131
- canots, 16 ft to 22 ft (hard chine transom stern boat)	134
- whale boats (24 to 35 ft)	48
- schooners (28 to 65 ft)	26
	<hr/>
Total	347
- beach seines	6
- total fishermen in Mahé (April/May 1977)	1 130
- landing sites in Mahé	36

The total catch of the domestic fishery is approximately 6 000 t/year.

Tuna longlining is executed in the area by ships of Japanese, Taiwanese, Kuwait and Panamanian registry. Mahé is used as a catcher ship to refrigerated carried transfer point. A fee is charged (about \$10.00/ton).

The Fisheries Department in the Seychelles is composed of Mr. Sandy Vidot, Senior Fishery Officer, an assistant fishery officer and supporting staff. The senior scientist is Dr. John Tarbitt. Present consumption of fish on the island of Mahé is 4 300 to 4 700 tons annually or 79 to 86 kg per caput.

3.5 The Future

3.5.1 Tuna

France will supply four 38-metre pole-and-line tuna boats with brine freezing capacity, costing nine million French francs each, under a loan and grant programme of which the loan portion is 20 million French francs. Deliveries will take place April to August 1979.

The U.K. will build a complementary 1 000 ton cold storage and jetty valued at Rs 22 million in its first phase. The construction is to be financed by a loan of £1 410 000 Sterling and is repayable over 25 years commencing 1986 and is interest free. The target production is 1 000 tons/year/boat for a total of 4 000 tons/year. It is hoped that a fifth boat will be added in due course.

The Seychelles Government will have complete ownership of the vessels and facilities and a separate management company, owned 75% by the Seychelles Government and 25% by ACF (Armement Cooperatif Finistère), will manage the enterprise under contract.

3.5.2 U.S.S.R.

A delegation will shortly arrive in the Seychelles (Spring 1978) to negotiate a fishing agreement.

3.5.3 Federal Republic of Germany

A mission arrived in early 1978 and discussed the possibility of supplying two vessels, a trawler and a handliner, with supplemental shore facilities, as an initial development step. The filleting and skinning of decapterus for export to Germany in frozen form was discussed.

3.5.4 Democratic Republic of Germany

A 540 ton freezer trawler and the 1 600 ton research vessel ERNST HENKEL will test fish the Seychelles area under agreement with the Seychelles Government.

3.5.5 South Korea is expected to send a mission shortly (1978).

3.5.6 A substantial number of international fishing companies have expressed interest in participating in the Seychelles fisheries.

4. DISCUSSION AND RECOMMENDATIONS

4.1 A Cohesive Fisheries Policy

In order to respond constructively to the various organizations interested in harvesting the marine resources of the Seychelles, the primary needs of the country require reiteration - the need for a continuing domestic food supply, for economic growth and for the creation of employment opportunities. To these might be added the need to protect the welfare of the existing indigenous fishery because it is a good employer and a supplier of food and because of the need to protect stocks from over-exploitation. It is noteworthy that, although some researchers have found a rich marine upwelling close to the Seychelles plateau, the area's resources are not extraordinarily large, and a certain amount of prudence with regard to initiating harvesting activities is warranted.

The Government has indicated that it wishes to move quickly with its development programme. That programme therefore, cannot await the execution of prolonged resource surveys.

Maximum economic benefit to the Seychelles from the fishery will accrue when the harvesting is done by economically viable enterprises operating as domestic Seychelles entities, subject to Seychelles taxes and laws.

Government-owned fishing enterprises are seldom viable in market economies and their role as a direct contributor to economic growth is seldom significant. They are, therefore, to be avoided except when they can fulfil other than economic objectives.

At present, however, the technology of economic harvesting of some species, and catch rates and returns have not been established. Furthermore, some of the harvesting will require significant capital investment and management capability beyond the present capacity of Seychelles citizens. Foreign investment and technology will be needed.

Foreign commercial fishing entities will be reluctant to establish units under Seychelles law unless they are satisfied in advance that the enterprises have a reasonable prospect of success.

A successful fisheries policy will take account of these various points. In addition, it will provide opportunities for income growth within the indigenous fishery.

To attract qualified foreign fishing enterprises the policy will encourage a limited number of selected entities to fish within Seychelles waters for a fixed period (say two years) under favourable, but not concessional, conditions. These will include obtaining supplies, using local facilities and services on a commercial basis, offloading ship to ship

in Victoria Harbour, and fishing under the control and regulation of the Seychelles Government regarding reporting, surveillance and licensing. They will retain their national flags and status during this period. Each vessel will supply its radio call sign and operating frequencies.

At the end of the two-year period each enterprise will be required, at its option, either to withdraw or to place its assets and operation under a Seychelles corporation. The corporation may be foreign-owned and have the right to repatriate profits but will be subject to Seychelles law, taxes and regulations. Foreign personnel will be limited to those essential to the operation. The corporation will export its products and repatriate the proceeds of sale, or sell domestically. The number of vessels will be limited.

In due course Seychelles nationals will be encouraged to purchase shares in the enterprises - possibly through concessional loans arranged by the Seychelles Development Bank.

4.2 Stocks

The groups of stocks may be considered individually.

4.2.1 Large yellowfin

This species is migratory, and the fish around Seychelles forms part of a large stock extending over much of the Indian Ocean. The stock of larger individuals, fished by long-liners from East Asia is heavily fished. Seychelles should, as part of its long-term fishery policy, push for regional arrangements that will reduce the overall amount of fishing. This will increase the net economic returns of the fishery, and thus allow the payment of higher licence fees to the coastal state, and facilitate its direct participation by these states.

In the short run, however, pending general regional agreement on reducing effort, a unilateral restriction by Seychelles on its effort in its waters would not be effective in controlling the total effort and would mainly benefit those vessels fishing uncontrolled beyond Seychelles jurisdiction. Therefore, unlimited licensing of longliners to fish within Seychelles waters is suggested, provided:

- each vessel is required to check out at Victoria Harbour at the finish of each voyage; radio check-in would be permitted;
- each vessel is licensed only for a particular period;
- the licence fee is related directly to the tonnage of the boat. A charge of \$15.00/GRT/per vessel per month or any part thereof is suggested.

4.2.2 Skipjack (pole-and-line)

The four vessel unit now being constructed will be unlikely to harvest all the skipjack available and as the baiting and catch rate data available for the Seychelles are conjectural, the licensing of a fleet of no more than ten skipjack pole-and-line boats to fish in Seychelles waters for a period of two years under the above-stated policy is suggested. At the end of two years the entity will be required to domesticate or withdraw. Full detailed reporting of baiting and catches will be required. Provision will be made for observers. Offloading to freezer carriers will be permitted (but not after domestication). The licence fee will be modest - say \$10/ton of tuna caught. The supply of crew amenities, vessel servicing and the use of base facilities, including cold storage, will be permitted at normal commercial rates and conditions.

Only one licence is suggested. As Kagai Gyogyo, a Japanese firm, was associated with the skipjack venture based in Malagasy, it is, therefore, the most experienced operator in the fishery.

4.2.3 Small Pelagics - Decapterus, etc.

Although the UNDP/FAO/IOP expedition vessel PROFESOR MESYATSEV discovered stocks of small pelagics, the survey was brief and no other investigator has commented on the stock. Seasonal fluctuations in abundance and availability, school sizes and behaviour characteristics are unknown. Furthermore, the market of frozen decapterus for human food is limited and, generally speaking, confined to the socialist countries. The reduction of this species to fish meal and oil on an economically viable basis is not indicated by the available data. The stock size and apparent distribution suggest capture by trawl - a method usually too expensive and limited for the fishmeal industry. Therefore, the programme recommended for harvesting small pelagics in accord with the needs of Seychelles will license up to six freezer factory trawlers.

Conditions of the licence will be that:

- vessels check in at Victoria Harbour at the initiation and completion of each voyage;
- complete reporting of fishing, catches, areas and such other oceanographic and biological data will be made as the Seychelles Fishing Department may require;
- provision will be made for Seychelles observers;
- voyage services, such as are available, will be offered on normal commercial conditions;
- offloading to refrigerated carriers will be permitted in Victoria Harbour;
- a license fee will be charged. \$5/GRT/vessel per month is suggested;
- the licence and fee structure will be reviewed at the end of one year;
- at the end of a subsequent two-year period the entity or entities may be required to domesticate or withdraw should the enterprise, in the opinion of the Seychelles Government, warrant this stricture.

4.2.4 Demersal Fishing

The available information suggests that the demersal species tend to inhabit the fringes of the plateau and the reefs, and that the resources found on the trawlable sectors of the plateau are not particularly abundant. Furthermore, the data indicate that the brood stock for some of the reef fishes, which are the prime elements in the existing handline fishery, inhabit the trawlable shelf.

Demersal trawling (with conventional gear), therefore, is unlikely to be particularly productive, will damage the indigenous reef fishery to a degree at present difficult to ascertain and will damage the coral structures and consequently the food chain of some of the demersals. A large vessel demersal trawl fishery should, therefore, be avoided.

Please note remarks regarding small-scale trawling below.

4.2.5 Small-scale Fisheries

The programmes recommended for 4.2.2 and 4.2.3 above will have the effect of moving toward the national objectives through the import of capital, technology and management to harvest Seychelles marine resources. They will not require direct government investment.

Under this programme, however, Seychelles nationals appear as employees and possibly minority shareholders of industrial enterprises. Their role can be expanded by a programme of crustacea catching, trolling, gillnetting and perhaps purse seining and small scale trawling using, for a start, equipment potentially within the financial and technical reach of the fishermen. Such a project would involve indicative fishing with appropriate equipment and the transfer of technology through a loan and grant scheme, supported and administered by the Department of Fisheries. It should be noted that FAO can assist the Department in the design and implementation of such a scheme at the request of the Government.

4.3 Legal Issues

4.3.1 Domestic Legislation

Points (a) and (b) of the terms of reference (Chapter 1) concern mainly the national legislation of the country.

The Maritime Zones Act, 1977, extends the territorial waters of the Republic to 12 nautical miles and establishes an Exclusive Economic Zone extending to a distance of 200 nautical miles from the base line. This Act came into force on 1 August 1977. It has been subsequently implemented by the Exclusive Economic Zones order of 27 February 1978.

Even though the concepts of Exclusive Economic Zones are not embodied in any general convention, it is now accepted by a very large majority of countries. More particularly, many countries in the western Indian Ocean, such as Comoros, France (for Bassas de India, Europa, Glorieuses, Juan de Nova, Mayotte, Réunion and Tromelin Islands), Maldives, Mauritius and Mozambique have adopted it.

The Maritime Zones Act refers to the "straight base-line system". Apparently such lines have not been drawn by the Seychelles. With regard to this aspect of the question it may be noted that the declaration on the issues of the Law of the Sea adopted by the Council of Ministers of the Organization of African Unity in June 1974 endorsed the principle that the base-lines of any archipelagic state may be drawn by connecting the outermost points of the outermost islands of the archipelago. Moreover, in this declaration, the African States recognized the need for a proper determination of the nature of maritime spaces of islands and recommended that such determination should be made according to equitable principles, taking into account all relevant factors and special circumstances including:

- (i) the size of the islands
- (ii) their population or the absence thereof
- (iii) their contiguity to the principal territory
- (iv) their geological configuration
- (v) the special interest of island states and archipelagic states

Mention should also be made of Article 47 (1) and (2) of the Informal Composite Negotiating Text (ICNT) now before the Third United Nations Conference on the Law of the Sea which, if adopted, would provide that "an archipelagic state may draw straight archipelagic base lines joining the outermost points of the outermost islands and drying reefs

of the archipelago provided that within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls is between one to one and nine to one. The length of such base-lines should not exceed 100 nautical miles, except that up to three percent of the total number of base lines enclosing any archipelago may exceed that length up to a maximum length of 125 nautical miles."

It appears from the EEZ order of 1978 that the outer limit of the Seychelles EEZ is a line lying at 200 nautical miles from the nearest land mass of the Republic of the Seychelles. In the southern area it follows the median line between the Republic of the Seychelles and the territory of neighbouring countries (Mauritius, France, Madagascar, Comoros, Tanzania). Such delimitation is consistent with the provisions of the ICM. It may be mentioned, however, that certain countries have expressed the opinion that those islands which cannot maintain human habitations or which do not have an economic life of their own cannot have an Exclusive Economic Zone.

In February 1973 the Government of Seychelles issued a chart entitled "Republic of Seychelles Exclusive Economic Zone and Continental Shelf". This chart shows two areas (A and B). Area A corresponds to the zone delimited by the EEZ order. The Mission understood that Area B, which is situated outside the 200 mile limit, corresponds to a claim on the continental shelf of Saya de Malha Bank. This claim is not formally expressed in any legal text. This situation should be clarified.

The Maritime Zones Act contains general provision covering fisheries. It proclaims, inter alia, that Seychelles has in the continental shelf and the Exclusive Economic Zone sovereign rights for the purpose of exploration, exploitation, conservation and management of all resources and that no person shall explore or exploit any resources of the continental shelf or the Exclusive Economic Zone except in accordance with the terms of any agreement entered into with the Seychelles or of license granted by or under the authority of the President. This prohibition does not apply to Seychelles nationals. Concerning foreign fishermen, it is noted that the present legislation does not permit implementation of the relevant provisions of the Maritime Zones Act. The Fishery Limits Ordinance 1971, which makes provision for the control of fishing and the taking of marine products by foreign fishing boats within the fishing limits of Seychelles, only applies to the territorial sea and the contiguous zone. A simple solution would be to decide that this ordinance could apply also to the EEZ. This does not seem advisable since many provisions of the ordinance do not square with the Maritime Zones Act. This is, inter alia, the case of section 3(1) which lays down the level of the fines and of section 4 which permits traditional fishing by foreign boats to be continued. Other provisions need to be improved. This is, inter alia, the case of section 3 (3) on licences. For these reasons it is deemed necessary to draft a detailed new order or ordinance dealing with foreign fishing. Of course, in the absence of any internationally recognized system of penalties, such text would include strong provision to dissuade foreign vessels from fishing illegally. It may be added that the Fisheries Ordinance 1942 needs to be updated since many of its provisions are obsolete or non-implemented.

4.3.2 International Law

Points (c), (d) and (e) of the terms of reference (Chapter 1) mainly concern relationships with foreign fishing countries and involve international law. In response to point (d) mention can be made of Article 62, Paragraph 2 of the ICNT which stipulates that when the coastal state does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements and pursuant to certain conditions give other States access to the surplus of the allowable catch. However, it should be pointed out that none of the numerous bilateral agreements recently concluded as a result of the new regime of the seas make any direct or specific reference to this provision. The Government of the Seychelles is therefore free to refuse to allow foreign fishing vessels in the EEZ in view of its intention to exploit them within the next few years.

As to point (c) in the terms of reference, the Government of the Seychelles is permitted to place a number of restrictions on foreign fishing vessels. It may first limit the number of authorized vessels and prescribe their gross tonnage and/or horsepower.

It may also designate the area in which they can operate. Such a limitation would ensure that the fishing activities of foreign vessels do not affect adversely the interests of local fishermen. When several countries are authorized, geographical distribution avoids concentration of fishing fleets on the same grounds.

The limitation of the number or size of foreign vessels may be considered as a sufficient measure to regulate the amount of foreign fishing. The Government may, however, wish to establish more detailed measures, including the fixing of catch quotas. This implies a fair knowledge of the condition of the stocks. In the present case this knowledge is probably not sufficient and, therefore, such allocation could not be made on a satisfactory scientific basis.

Foreign fishing vessels must also comply with domestic management measures concerning closed seasons, characteristics of gear, and minimum size of fish that may be caught. In the case of Seychelles it is particularly important to oblige such vessels to report detailed statistical data on their catches and effort. These data would improve the knowledge of the status of stocks and would facilitate their proper conservation and management. In order to permit a comparison between different reports, standard logbooks should be distributed to all foreign vessels.

With regard to (e), in the terms of reference (Chapter 1), the first element that can normally be demanded in return for the licensing of vessels is the payment of fees. The amount of such fees may be decided upon unilaterally by the Government when drawing up its national legislation. In that case the bilateral agreements concluded with foreign countries only refer to such legislation. Another solution would be to lay down the amount of the fees in bilateral agreements. This makes possible different fees for different partners. Fees may be based on the tonnage of the fishing vessels. This is the solution often adopted when the coastal state has not sufficient enforcement capacity. The fee level should depend on the economic value of the species concerned. Supporting vessels may also be charged but perhaps at a lower level. Fees may also be based on the total ex-vessel value of the fish caught. In this case the bilateral agreements must include specific provisions for controlling the catches and for fixing the value. These values may be commonly agreed upon in the bilateral agreement or unilaterally decided by the Government for a determined period of time (e.g. one year). Both criteria may be used. To give an example of such arrangements, an agreement concluded in 1977 between Chile and Spain provides for the following annual fee: U.S.\$ 1 000 per vessel on account of its foreign registration; U.S.\$ 60 per registered net ton; and U.S.\$ 20 per ton of fish caught.

Any comparison between the level of license fees must be based on all relevant factors and must take into account the other benefits received by the coastal State. Foreign fishing vessels may be obliged to land part of their catches to supply local markets or industrial processing plants.

With a view to enhancing the capability of Seychelles fishermen, the Government might include in bilateral agreements provisions for the acceptance of trainees on board foreign vessels.

In addition to the obligations assumed by the owners of foreign vessels, the granting of fishing rights to these vessels may entail a number of commitments on the part of the flag state. These commitments are aimed essentially at promoting financial, economic and technical cooperation between the flag states and the coastal states. For example, several bilateral agreements recently concluded between developing coastal states and developed

fishing countries provide that, in addition to licence fees paid by the owners of fishing vessels, the flag state will make financial grants or supply vessels or equipment free of charge to the coastal state. A number of bilateral agreements also contain provisions to the effect that the flag state will send experts to the coastal state to provide technical assistance in the fisheries. In other cases the flag state may agree to grant fellowships and to accept trainees in its own educational institutions. Agreements may also provide for the granting of technical and economic assistance in conducting scientific surveys or fish stock assessment. Some developed countries have accepted the idea of temporarily providing research vessels possessing the necessary fishing equipment and gear and manned with crew and scientists.

It should, however, be noted that in a number of cases the extent of such cooperation depends on political factors.

Most of the bilateral agreements concluded so far do not contain detailed provision for the settlement of disputes when the terms of the agreement are broken by one party. Many agreements contain provisions providing for their denunciation within prescribed time limits by one party. An original solution can be found in an agreement recently concluded between Mexico and U.S.A. which contains a provision to the effect that for each U.S. vessel willing to fish in Mexican waters there will be posted a cash deposit of performance guarantee, or a cash performance bond. Such deposits will be refunded upon application at the end of each year or when the vessel leaves the fishery if the bond has not been forfeited.

With regard to (f), joint ventures are sometimes preferred to straight licensing. A successful joint venture, however, requires each partner to make a contribution - and those joint ventures where one partner makes all the investment and supplies management and technology are seldom true joint ventures; they often result in an organization dominated completely by the partner making the major contribution, the minor local partner providing only a facade to cloak the true nature of the enterprise. In general, therefore, the joint venture form is less desirable than the policy of requiring domestication of industrial fishing enterprises in due course.

(g). The joint venture form, however, is particularly well-suited for the Seychelles enterprise which will build four pole-and-line vessels with French provided aid and a cold storage base with U.K. assistance. Many joint venture elements are subject to negotiation between the contracting parties, but in this case several principles are identifiable which, if incorporated into the structure of the enterprise, will enhance its prospect of success, namely:

- (i) The foreign partner must be qualified technically and have a record of successful operation in the skipjack pole-and-line fishing.
- (ii) The foreign partner must make a financial contribution of such magnitude that a failure of the enterprise will hurt him. He must have confidence in the success of the enterprise.
- (iii) The foreign partner must have available equipment and people in whom he has confidence. This means that the vessels must be of a design satisfactory to him and must be equipped in accord with his wishes. Similarly, the shore facilities must be in accord with his views. He must be responsible for the hiring and discharge of all personnel employed by the enterprise.
- (iv) He must have adequate working capital at his disposal and have free access to it.
- (v) He must be free to purchase the goods and services required by the enterprise.
- (vi) He must be reimbursed for the personnel and goods and services supplied directly from his own organization on an agreed basis. Cash cost plus 10% for overhead and service costs is suggested.

- (vii) He must ensure that all products are sold for maximum net return to the enterprise in the Seychelles.
- (viii) He will report to a Board of Directors controlled by the Seychelles Government, whose functions and authorities are clearly delimited, i.e., the Board will appoint auditors, approve capital expenditures above an agreed amount (say U.S.\$ 25 000) and formulate the policies of the enterprise.
- (ix) The foreign partner must be assured of the prospect of a good profit - although that cannot, of course, be guaranteed. His profit should be a share of the profit of the undertaking. The formula for reaching it is a matter for negotiation and will depend upon, among other things, the operating success of the enterprise, the charges which the Seychelles Government will levy for the use of its assets, the provision of funds for their maintenance, and the taxes which will be imposed by the Seychelles Government.
- (x) The foreign partner must be assured of the right to repatriate his profits in the currency of his choice. FAO can advise the Seychelles Government in the negotiation of the joint venture agreement.

4.3.3 Enforcement

Without enforcement of the Seychelles EEZ, there is little point in attracting foreign capital, equipment, technology and management if the marine resources are to be harvested in accord with the national objectives. An enforcement apparatus is therefore essential. Since financial constraints are significant, it is suggested that a minimum enforcement organization be mobilized. Such a force would consist of an extended range small aircraft (Britten-Norman Defender, or equivalent, with long range capability and positioning equipment), together with a fast gunboat (20 knots plus). They would move their base of operation from time to time and survey sectors of the EEZ sequentially. The aircraft would be used for detection, identification and location of fishing vessels and the gunboat, working in concert with the aircraft, would perform arrest and escort duties. Fines and penalties for offending vessels would be large. Confiscation of catch and fines up to U.S.\$ 1 000/GRT of vessel are suggested.

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