

THE ECONOMIC ASPECTS OF FISHERIES DEVELOPMENT AND
MANAGEMENT IN FRENCH POLYNESIA

by

Gilles BLANCHET
economist

- Paper presented by the Papeete ORSTOM Centre to the
Twentieth South Pacific Conference
(Port Moresby, Papua New Guinea, 18 - 24 October 1980)

30 NOV. 1987

ORSTOM Fonds Documentaire

N° : 24285, ex 1

Cote : B 27 M

RESTRICTED

SPConf.20/WP.13

22 August 1980

ORIGINAL : FRENCH

SOUTH PACIFIC COMMISSION

TWENTIETH SOUTH PACIFIC CONFERENCE

(Port Moresby, Papua New Guinea, 18 - 24 October 1980)

THE ECONOMIC ASPECTS OF FISHERIES DEVELOPMENT AND
MANAGEMENT IN FRENCH POLYNESIA

(Paper presented by the Papeete ORSTOM Centre)

1. When one considers the fact that French Polynesia is made up of over a hundred islands representing 4,000 km² of emerged land scattered over an area about the size of Europe, it is not hard to understand why fisheries resources hold a prominent place in the economy and are regarded as a key development factor.
2. The establishment, by Decision of 3 February 1978, of a 200 mile exclusive economic zone (EEZ) around the coast of the Territory enhances this potential, since French Polynesia now covers a total area of 4,867,000 km².
3. This extension of the territorial waters has come at a time where reduction of the traditional French fishing zones in Europe* is causing the French state to envisage making better use of its resources in the Pacific, and where French Polynesia, having run in the internal autonomy system set up in 1977, can take on new responsibilities in its own development.

* In an editorial titled "Transfers of fisheries technologies to Third World countries" the assistant managing director of the monthly magazine "La Pêche maritime" wrote: "As regards industrialised countries, the translocation of their fisheries activities to overseas countries has become absolutely necessary. Fishing fleets are at the moment up against such severe biological and political limitations in their traditional fishing zones, that they must seek to utilise their excess capacity in countries with under-exploited resources...".

(cf "La Pêche maritime" no. 1212 March 1979 p. 131).

4. The extension has also coincided with a situation of generalised economic recession which encourages the implementation of less costly and more self-centred development systems involving maximisation of local resources and aimed at better satisfaction of needs as well as better distribution of revenue.
5. Lastly this extension is concurrent with the new orientation of research. Besides ensuring the universal progress of science, the goal of research has become to find ways of employing science and technology to provide concrete answers to major development problems, in an endeavour to meet needs regarded as essential and to facilitate the advent of a new economic order based on greater justice and harmony on the world scale.
6. An inventory and comprehensive investigation of potential resources should lead to their rational exploitation if more effective and more appropriate techniques can be evolved and applied.
7. This was the belief underlying the symposium on the development of oceanic resources in the French Pacific territories which was held in Noumea from 16-20 September 1979 at the initiative of the Secretariat of State for French Overseas Territories. The preparatory report specified that the new oceanic development policies to be implemented were at the same time part of the overall national policy on the sea aimed at greater national independence and part of territorial development plans geared as closely as possible to local needs.
8. After making an assessment of the present situation, the symposium tried to reach consensus on suitable base lines for the establishment by each Territory of a development charter providing for better coordination of government departments and scientific institutions such as ORSTOM (in particular through research directed to specific aims) and a strengthening of their cooperation with private enterprise.
9. Recent fisheries development and management policies decided upon in French Polynesia take into account the guidelines set by the symposium and are integrated with the 8th Economic and Social Development Plan which is being prepared for the period 1981-1985.
10. They cover three separate areas of action and correspond to three priority programmes: tuna fisheries, coastal and lagoon fisheries, aquaculture. Before dealing with each one, it may be useful to recall some basic data illustrating the present status of fisheries in the local economy.
11. Apart from 2,000 tonnes of tuna longlined offshore by foreign fleets, 2,236 tonnes of fisheries products were marketed locally in 1979 (Papeete, Pirae and Utauroa district markets), 71% of this being made up of lagoon or reef fish, 28% of offshore fish, and less than 1% of crustaceans. Personal consumption was of the same order and imports amounted to 1,500 tonnes, bringing the total annual demand to 6,000 tonnes.

12. While there has been very little fluctuation in the quantities of local fish marketed, which have stayed between 2,000 and 2,500 tonnes since 1968, imports have increased both in quantity and in value, from 1,132 tonnes for 237,000,000 CFP francs in 1974 to 1,494 tonnes for 380,000,000 CFP francs in 1979. 78% of imports were fish, mainly tinned, and 22% crustaceans and shellfish, mainly fresh.

13. Exports of fisheries products have increased from 14 million CFP francs in 1974 to 192,000,000 francs, mainly because of the development of the pearl culture industry; the sale of black cultured pearls represents three quarters of the total exports (158,000,000 CFP francs) and is now second only to copra on the list of primary export products.

14. Although the local fishery covers 60% of domestic needs (in monetary terms), it occupies only a minor place in the territorial economy. Indeed the whole primary sector, which also comprises agriculture and livestock, only accounts for 7% of the gross domestic product (GDP), while the salaries paid by the Administration constitute an input of 30%.

15. The French fishing effort corresponding to these figures is insignificant. It has been estimated (for all the French Pacific territories together and in relation to the area covered by their exclusive economic zones) at 7.2 grams/km².

16. In this context a staged and coordinated development plan is gradually being set up. Its aim is to meet local needs and to provide revenue from export. In the first, 10-year, stage, the environment will be surveyed and present activities and operations pursued further, and in the second stage efforts will focus on rational management of stocks. As regards funding, for the duration of the 8th Plan (1981-1985) the Government will allocate 3 billion CFP francs to the development of living oceanic resources (as against 1.4 billion from 1971 to 1980, the period covered by the 6th and 7th Plans), and an additional 2 billion will come from private enterprise, making a total of 5 billion CFP francs of which 22% will be allocated to tuna fisheries, 26% to coastal and lagoon fisheries and 52% to aquaculture.

A. Tuna fisheries

17. The Pacific Ocean is the part of the world where tuna catches are highest, and the waters around French Polynesia are among the rare zones that are substantially underfished. Distant water fleets in that area catch skipjack and yellowfin on the surface, albacore deeper down, the annual potential being estimated by experts at 40,000 tonnes, made up in equal parts of surface and deep water species.

18. Two types of fisheries at present co-exist in the Territory:

- An industrial-type fishery is operated by large foreign companies, with Taiwanese, Korean and Japanese manned longliners whose catches from the EEZ of French Polynesia are estimated at 13,000 tonnes/year.

19. These fleets stop off at Papeete, where they use harbour facilities and cold storage plants (with a total capacity of 23,000 m³ of which 15,000 m³ are permanently available for fish). Since the beginning of the petrol crisis, the activity of this fishery has declined* and the quantities put in cold storage before being sent on to Pago Pago have dropped from 7,202 tonnes in 1974 to 2,052 tonnes in 1979. In the same period, the number of ships calling at Papeete dropped from 132 to 31 and the number of ships stationed there dropped from 60 to 16.

20. - A low-profit artisanal fishery is operated by a hundred odd skip-jack vessels, about 10 metres long and between 8 and 15 gross tons, which fish with pole and line, without bait or with a pearl-shell lure, while 200 smaller crafts (speed boats and canoes) fish by trolling or use handlines in "tuna holes" near the shore.

21. The two most economical industrial techniques for catching surface schooling tunas seem to be pole-and-line fishing with live bait and purse seining.

22. Very much affected by adverse conditions (clear water, deep thermocline, very small tuna schools) seining will need to undergo trials before the transfer to the Pacific of any part of the French tuna seining fleet can be contemplated.

23. Pole-and-line fishing trials with live-bait have been conducted in the past few years and, in addition to projects such as the one being implemented by the Tahitian Fishing Association (Société tahitienne de pêche, SOTAP), two local companies were set up for semi-industrial pole-and-lining with live-bait: the Rangiroa Fishing Company (Société de pêche de Rangiroa, SOPERA) and the Fishing and Fish Marketing Company (Société d'exploitation et de commercialisation du poisson, SCEP). Their failure was due to a baitfish shortage plus management difficulties and too rapid an expansion of their infrastructures which their activity and production was not large enough to offset, so that it was impossible for them to be competitive on the international market.

24. Cooperation between research scientists and commercial fishermen in exploratory surveys will enable these techniques to be adapted to local conditions and, in conjunction with further comprehensive, development-oriented research, improve tuna fishery prospects.

25. The most important prerequisites will be:

- A better knowledge of the fisheries operating and the species being caught.

- Radiometric localisation of tuna movements and concentrations.

* This decline in activity is of course linked to the constant rise in fuel prices, but also to the high cost of using Tahiti as a supply base, to the recent enforcement of the EEZ and to the problems involved in drawing up fisheries agreements with foreign interests.

- A more thorough understanding of the ocean environment (hydro-climates) and its influence on the stocks harvested.

- An assessment of live-bait pole-and-lining potential.

- Trials with new techniques (16 m multi-purpose skipjack boats, tuna aggregating devices in the form of anchored rafts) and training of commercial fishermen.

26. The pursuit of these objectives should lead to the gradual development of ocean fisheries and facilitate the transition from an artisanal type of fishery to semi-industrial and industrial forms, in accordance with one of the conclusions of the Symposium on the sea which reads as follows: "Artisanal fisheries currently appears to be the first feasible form of utilisation of oceanic resources, since the requisite structures can be set up immediately and at reasonable cost to the Territory and can prepare the way to larger-scale fisheries".

27. Long-term trials and research with a view to industrial fisheries cannot fail to produce spin-offs for artisanal fisheries whose development generates employment and income, and retains population in their home areas. The setting-up of production, marketing and financing structures for semi-industrial fisheries should provide a staged transition between family-scale subsistence and industrial fisheries while at the same time inducing economic activity all along the line (ship building, collection network, cold storage chains, packing, processing, and marketing of product).

B. Coastal and lagoon fisheries

28. Traditionally practised inside and outside the lagoon by individuals or coastal communities, coastal and lagoon fishing is a very important source of food and cash for islanders. Independently of home consumption which is difficult to assess, this importance is reflected in the quantities marketed which, in 1979, amounted to 1,593 tonnes of lagoon or reef fish and 9 tonnes of crustaceans plus 114 tonnes of trochus shell and 208 tonnes of pearl shell (200 tonnes of live shells for pearl culture, and 8 tonnes of shells for the manufacturing of souvenirs and mother of pearl buttons).

29. Many different techniques are used in this fishery, ranging from traps, nets and handlines to spears and spear guns, and catches are unevenly distributed (only a fraction - 30% - of the Tuamotu Islands catch is at present marketed) and remain, both for fish and crustaceans, well below the potential and the domestic demand.

30. Development of this fishery will involve increased fishing effort, extension of fishing grounds and improvement of fishing techniques. In addition, and despite the fact that so very little is being drawn at present from the existing resources, it requires a better understanding of the resources and of the environment, because of the vulnerability of atoll ecosystems.

31. This understanding is more urgent still in the case of molluscs, to enable rational stock management of species that are intensely fished, such as the pearl shell Pinctada margaritifera, or that were recently introduced, such as the trochus or the green snail, or which appear promising as an economic resource, such as bêche-de-mer and clam shells, to be undertaken as of now.

32. With this in mind, a number of actions have been initiated for the purpose of providing the base-line data essential for better resource management and increased production:

- Establishment of a fisheries statistics collection and processing system.
- Study of the biology and dynamics of pearl oyster, trochus shell, green-snail and bêche-de-mer stocks.
- Study of the lagoon environment.
- Study and development of artisanal fishing techniques (7 m multi-purpose boats, trap strings, trap nets, gillnets).
- Feasibility study on the development of a deep-water fishery on the outer reef slopes.

33. Parallel to these studies, which aim at linking research more closely to development, one aspect of the coastal and lagoon fishery was already given something of an industrial character by the Société d'exploitation et de commercialisation du poisson (SCEP) which, up to 1980* arranged for collection of fish from independent fishermen and then organised storing, processing and marketing.

34. This semi-industrial or transit stage between artisanal and industrial fisheries seems likely to be maintained within the planned increase of production. It will involve collection of fish from small-scale fishermen and establishment of semi-industrial marketing circuits, first of all to meet the domestic demand and subsequently for export.

35. This development must be supported by an active search for markets and continuation of research into ciguatera fish poisoning. Since it is dependent on regular production and supply, it must go hand in hand with improved basic services and facilities (harbour facilities, cold storage, repair workshops) as well as training and technical assistance activities. These are to some extent already being initiated within the 72 mutual benefit associations which have a total of 3,000 fishermen members and are gradually turning into a cooperative type organisation. Development would also be assisted by increased flexibility in the granting of credit and by a system of incentives based on existing patterns of social interaction.

C. Aquaculture

36. Great hopes are being placed on aquaculture. The territorial Fisheries Service started out by adapting conventional forms of oyster culture and

* The SCEP was wound up towards the end of 1979 but is to be resurrected in the form of a mixed economy company: the New Fishing and Fish Marketing Company (Société nouvelle d'exploitation et de commercialisation du poisson, SNCEP).

pearl culture to the local context and, in 1970, took preliminary steps towards shrimp farming. From 1972 onwards, the establishment in Tahiti of a branch of CNEKO, the Pacific Oceanological Centre (Centre océanologique du Pacifique, COP), enabled the launching of a very modern type of aquaculture centred around research/development activities that are as promising as they are costly and have in particular resulted in control being achieved over the fresh-water shrimp production cycle, with 10 tons of shrimps being produced in 1979.

37. The natural environment is in general rather favourable, with the advantages of satisfactory average temperature and salinity levels, slight seasonal variations, absence of pollution, and the natural protection of the coral reef, and the disadvantages of low mineral content of the water (which COP tries to offset by deep pumping), high production costs, small number of favourable sites and the absence of an adequate domestic market.

38. Rearing of shrimps, prawns and bivalves (oysters* and mussels) is reaching the stage where transfer to the private sector is becoming feasible, while pearl culture has already passed this stage and generated seven private companies and 14 cooperatives which, since 1975, have merged into an economic interest federation (Groupement d'intérêt économique (GIE)).

39. The activities in progress or provided for under the 8th Plan are part of a sustained research/development effort aimed at promoting an intensive, high-capital, low-labour form of aquaculture directed towards exportation of vanguard technologies and high added value products. They are also designed to facilitate extensive or semi-extensive aquaculture generating jobs and income in the islands and well integrated into the environment as complementary to agriculture.

40. The activities include:

- Further improvement of shrimp production techniques to reduce costs and facilitate transfer to the private sector.

- Improvement of prawn production techniques and running of farm-scale field trials.

- Production, in cooperation with the Livestock Division, of suitable feeds incorporating local products as much as possible (feeding of shrimps at present accounts for 40% of production costs).

- In cooperation with the Rural Economy Department, culture of spiruline algae for the production of compound feeds.

- Continuation of production of cultured pearls and collection of pearl oyster spat from the natural environment to offset shortage of stock.

* After good results had been obtained in the Leeward Islands and a start made on marketing, oyster culture is now being jeopardised by parasite (Polydora) infestation.

- Development of live-bait production techniques (mollies and milkfish).

- Geomorphological study of atolls suitable for pearl culture and aquaculture.

- Survey of sites and continuation of aquaculture trials in the lagoon by merging COP and Fisheries Division activities with a view to semi-intensive green mussel and prawn farming.

41. In addition to this comprehensive programme, which has not been and cannot be precisely dated, a number of ad hoc studies need to be done on activities leading up to and out from the actual fisheries operations (marketing circuits, market research, production outlets...) and a technical assistance and training scheme will have to be set up to facilitate transfer of technology to the private sector.
