PAPUA NEW GUINEA'S DISTANT-WATER TUNA FISHERY DURING 1979, 1980 AND 1981

By A. Wright, Biologist, D.P.I., Fisheries Research Station, Kavieng, N.I.P., and
D.J. Doulman, Economist, D.P.I. Fisheries Division, Kanudi

INTRODUCTION

During 1979, 1980 and 1981, the tuna in Papua New Guinea waters was fished by both a domestic fleet and a foreign based fleet. In 1982, the domestic fleet stopped operating. This is discussed in a separate article (see HARVEST, Volume 8, No.3, pp. 110-116).

Foreign-based vessels exploit tuna within the 200 mile Declared Fisheries Zone (DFZ) around Papua New Guinea, by pole-and-line fishing, long-lining and purse-seining.

These foreign vessels come mainly from Japan, Korea or the United States. Papua New Guinea benefits from their operations only through the payment of access fees. The vessels do not enter ports in this country to buy supplies, nor do they employ any Papua New Guinean fishermen.

This article outlines the development of the foreign-based fishery from 1979 to 1981.

FISHING AGREEMENTS

Foreign vessels enter Papua New Guinea's DFZ under agreements between Papua New Guinea and the fishing associations of the country concerned. Each agreement is negotiated separately.

For example, there have been several agreements with Japan, most of which have lasted for one year. The arrangement which now operates was signed in August 1981. It allows for:

1. A fee of 5% of the value of the likely catch of each boat (based on the average market price for tuna in Japan), calculated at the beginning of each trip.

2. A boat fee of K30.00 per metre of vessel, per year.

3. A fee for each fisherman of K1 per year.

The Japanese agreement will remain in force until either the Papua New Guinea Government or the Japanese tuna associations give 3 months notice to end it.

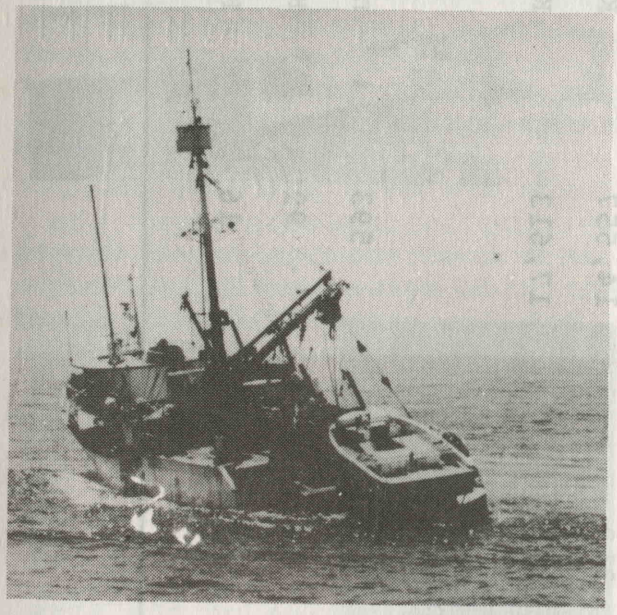
In 1981, up until August, Papua New Guinea collected K1,227,000 for 377 licences. Between August and December another K843,765 was collected under the present agreement, for 240 licences issued.

In April 1982, a temporary agreement was negotiated with the American Tuna Boat Association (ATA) to allow American seiners to fish Papua New Guinea's DFZ until the end of 1982. This resulted from the seizure of the *Danica*, an American purse-seiner. This agreement earned the Papua New Guinea Government about K357,140 during 1982.

An agreement with the Government of the Republic of Korea is still being negotiated. This will allow Korean long-line and purse-seine vessels to operate in Papua New Guinea's DFZ under similar terms and conditions to the present Japanese agreement.

THE PURSE-SEINE FISHERY

The Japanese and American seiners that operate in the Western Pacific are of similar design. For details of the design and fishing method, see HARVEST, Volume 5, No.3, pp. 140-151.



A purse-seine vessel at sea. A skiff used to assist in setting the net is on the stern.

The American seiners are commonly known as super-seiners. They range from 1000 to 1700 Gross Registered Tonnes (GRT) and often use helicopters to locate schools of fish. They usually have a crew of 22.

In 1982, 23 American vessels were licenced to fish in the DFZ. The expected annual catch of each of these vessels in the Western Pacific was 6000 tonnes compared with 3000 tonnes in the Eastern Pacific. It is estimated that these American vessels took a total of 50,000 tonnes of tuna in Papua New Guinea waters in 1982.

Japanese single-seiners are usually in the 500 to 750 GRT range with a crew of 18 to 24 men. They make between 5 and 7 trips to Papua New Guinea's waters each year. During 1981, reported catches of single-seiners operating within our DFZ ranged from 2640 tonnes to 4280 tonnes for the year.

In 1980, group-seiners which usually exploit Japan's near water tuna fishery, extended their operations as far south as Papua New Guinea. Group-seine operations usually involve three or four vessels, a seiner of 116 GRT, one or two carrier vessels of 325 GRT and an anchor vessel of 45 GRT. Each type of vessel is crewed by 23, 15 and 7 men respectively. Three group-seiners were licenced to fish in the DFZ in 1981, but no catch data are available for their operations.

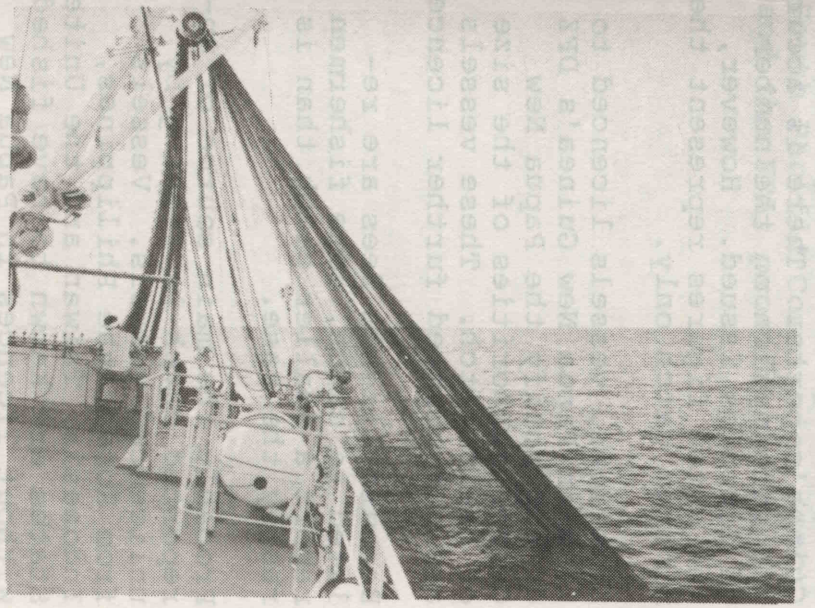
Purse-seining in the Western Pacific usually takes place on schools of tuna associated with logs, floating debris, whales or sharks.

During 1981, 85% of schools fished by Japanese single-seiners operating in Papua New Guinea waters, and 68% of those fished by group seiners, were associated with logs. Skipjack *(Katsuwonas pelamis)* and yellow-fin tuna *(Thunnus albicans)* together made up 99% of the Japanese purse-seine catch from the DFZ in both 1980 and 1981.

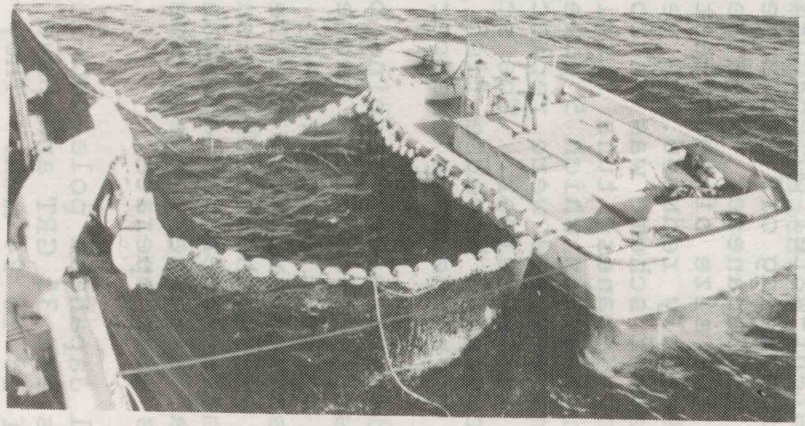
Data for the fishing operation in 1980 and 1981 are given in Table 1.

TABLE 1. DATA FOR THE JAPANESE FISHERY IN PAPUA NEW GUINEA'S DECLARED FISHERIES ZONE

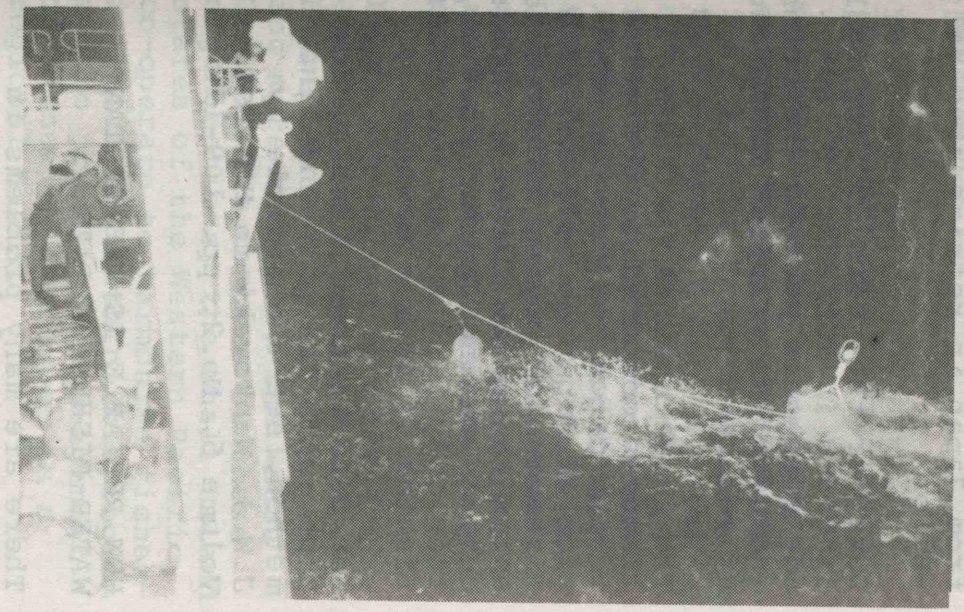
	Number of vessels	No. of licences issued	Total catch (tonnes)	Value of catch in Japan	Value of licences to Papua New Guinea
1. The purse-seine fishery					
1980	12	63	12,906	K12.5 million	K260,000
1981	23	103	14,938	K12.8 million	K611,000
2. The long-line fishery					
1980	123	312	14,557	K22 million	K519,000
1981	151	507	17,613	K25 million	K846,000
3. The pole-and-line fishery					
1979	24		593	not known	
1980	7	14	99	K95,797	K36,132
1981	5	7	16	K14,784	K11,191



A purse-seine net being hauled in to concentrate the catch in an area small enough for the fish to be scooped out



The skiff alongside the vessel, with the net between. The catch will be transferred to the seiner's freezing holds



Hauling a long-line

Gaffing the catch of a long-line on board

THE LONG-LINE FISHERY

Most long-line vessels operating in Papua New Guinea waters are Japanese. Most are 59 GRT, with a crew of 10 men. They make 5-7 trips to Papua New Guinea every year. Each trip lasts about 50 days, with half the time taken up in travelling from and to Japan.

Data for their fishing operations in 1980 and 1981 are given in Table 1.

In 1980, the catch included 79% yellowfin tuna and 14% big-eye tuna *(Thunnus obesus)*. In 1981, yellowfin made up 74% of the catch, and big-eye tuna 12%. The catch was sold mainly on the Japanese *sashimi* (raw fish) market.

For details about long-lining operations, see the article by Andrew Wright in HARVEST, Volume 5, No.4, pp. 221-231.

THE POLE-AND-LINE FISHERY

The distant-water pole-and-line fleet operating off Papua New Guinea is Japanese. Over recent years, the size of the fleet has been steadily reduced. A vessel replacement scheme was introduced by Japanese tuna fishing authorities, in which 5 pole-and-line vessels were replaced by one purse-seiner. The scheme was encouraged because fish caught by seiners is cheaper.

Most distant water fishing by Japanese pole-and-line vessels occurs between October and March each year. For the rest of the year (the northern summer months) there is a Japanese near-water fishery where these vessels also operate.

Typical Japanese pole-and-line vessels are 35 GRT and have a crew of 18 to 24 men. They carry 1.5 tonnes of live bait from Japan in refrigerated bait wells.

Data for the years 1979 to 1981 is given in Table 1. On average over this period, the catch included 94% skipjack tuna, and 6% yellowfin.

The large amounts paid for licences compared to the value of the catch reflect the practice of Japanese pole-and-line fishermen of buying licences to enter Papua New Guinea's waters before leaving Japan. However, they only fish in our waters if fishing is poor elsewhere.

For details about fishing for tuna using the pole-and-line method, see the article by J.W.J. Wankowski in HARVEST, Volume 5, No.2, pp. 109-118

HOW RELIABLE IS THE DISTANT WATER FISHERIES DATA?

There are many problems in getting information about the catch from foreign-based vessels which do not enter Papua New Guinea's ports. There is accurate information on the number of licences issued. However, the catch figures represent the minimum catch only.

Sometimes, vessels licenced to fish in Papua New Guinea's DFZ do not notify the Papua New Guinea authorities of the size of their catch. These vessels are not granted further licences.

Because licence fees are related to catch, some fishermen report a smaller catch than is really the case.

Probably the main source of unreported catch is fishing by unlicenced vessels. Vessels from Korea, the Philippines, Indonesia, Taiwan and the United States are known to have fished without licences in Papua New Guinea's waters.

MANAGEMENT

The Convention on the Law of the Sea

One part of this convention concerns highly migratory species, such as Papua New Guinea's tuna. First of all, a total allowable catch is worked out for particular fishing zones. If the country cannot fish all the resource itself, then the Convention states that the resource should be made available to fishing vessels from other countries.

Papua New Guinea supported the establishment of the Forum Fisheries Agency (FFA) in 1979 and more recently, the Nauru Group. The members of these organisations, the small island states of the Western Pacific, co-operate to harmonise fisheries policies within this region and to promote the management of fisheries resources on a regional basis.

Standard collection procedures, and centralised analysis by the South Pacific Commission (SPC) and the FFA, provide the basic biological and economic information necessary for good management decisions. The costs of checking the whole region and of enforcing fishing agreements are also lower.

FUTURE OUTLOOK

It is expected that the increase in purse-seining activity within Papua New Guinea's DFZ since 1980 will continue, although at a rather lower rate, over the next few years. Most of the increase will be due to seiners from the United States, Korea, Taiwan and the Philippines.

Long-line fishing will probably decrease as production costs increase. If the trend of Japanese acceptance of skipjack into the traditionally yellowfin and big-eye *sashimi* market continues, it will further accelerate the decline of the distant water pole-and-line fishery which is expected to disappear completely from the Declared Fisheries Zone of Papua New Guinea.