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**THE MANAGEMENT OF THE COASTAL BARRAMUNDI FISHERY
IN THE WESTERN PROVINCE OF PAPUA NEW GUINEA**

by

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WORKSHOP ON THE MANAGEMENT OF SOUTH PACIFIC INSHORE FISHERIES

SECTION 3. MANAGEMENT POLICIES AND REGULATIONS.

The Management of the Coastal barramundi fishery in the Western Province of Papua New Guinea.

By

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Abstract

Restrictions or management regulations on the Papua New Guinea barramundi fishery include gear restrictions on the mesh sizes of nets (only >6 inches), size limits (only > 50 cm fork length) and closed seasons (between January and July). Enforcement of these regulations have become almost non existent at the present time. Modifications in the regulations now in place should be undertaken and the powers for the enforcement of the regulations should be given back to the local Councils.

Introduction

The barramundi or giant perch, *Lates calcarifer* (Bloch) in Papua New Guinea (PNG) is confined to the southern coast, being distributed from Mullins Harbour in the east to the Irian Jaya border in the west (Figure 1). It is most abundant in western Papua, an area with rivers that have substantial lake and swamp systems and extensive deltas and less abundant in eastern Papua which has shorter fast flowing rivers and lack extensive swamps and deltaic systems (Moore, 1982).

Moore & Reynolds (1982) studied the migration of barramundi in Western Province and showed that adults migrate out of the lake and river systems of the Western and Gulf Provinces of Papua to spawn in the coastal waters west of Daru Island. Larval barramundi migrate into the coastal swamps along the western margin of the Western Province where they transform into juveniles. Later these juveniles migrate into coastal waters from March to August from where they penetrate into the river systems of the Western and Gulf Provinces (Moore, 1982). A small scale commercial artisanal fishery is based on the annual migration pattern of the barramundi along the Daru coast line from Sui village in the east to Mabaduwan village in the west. A small scale commercial artisanal barramundi fishery is also based in the inland waters.

Although no proper management plans have been developed for the barramundi fishery in PNG, this paper will describe some of the management measures put in place for the barramundi species, discusses the problems now faced in implementing these measures and suggest some alternatives to the current management measures.

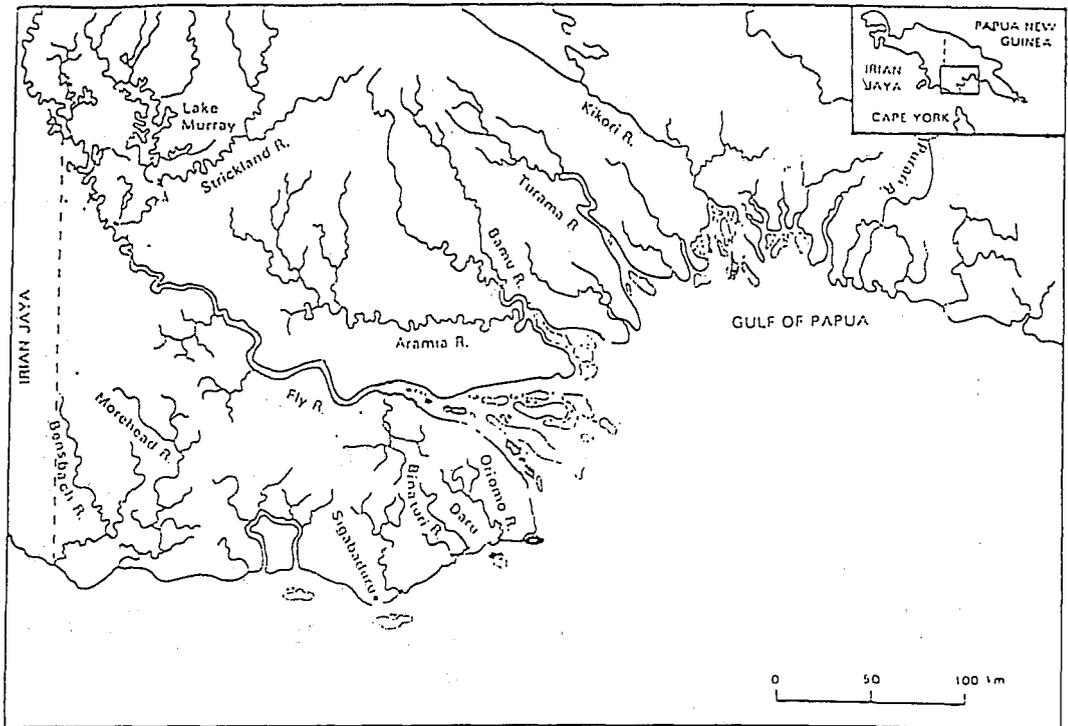


Figure 1. Barramundi distribution areas in Papua New Guinea.

Legal measures.

Small scale artisanal fisheries for the barramundi (*Lates calcarifer*) are important earners of revenue for commercial fishermen in the Western Province of Papua New Guinea (PNG). To preserve the stocks of barramundi and prevent growth overfishing, management directives have been drafted banning the sale of undersize or juvenile barramundi 10-50 cm fork length (age classes 0+, 1+ and 2+) in the market on Daru Island.

A Prohibition notice (No. G67) was gazetted by the then Minister for Agriculture, Stock and Fisheries in October, 1983. This notice prohibits the taking, selling and exporting of barramundi which are between 10 to 50 cm in fork length throughout the Western Province. It also restricts the use of nets that are of less than 6 inch mesh sizes within the coastal waters between Sui village to the east and the mouth of the Binaturi river to the west between January and July each year (Figure 2).

However, undersized or juvenile barramundi have become a common item at the market in Daru, the main urban centre, mainly because of an increase in the population of unemployed people who settle around the town. Between 20-60 undersized barramundi are sold daily at the Daru market, representing an annual harvest of about 15,000 fishes (1989 personal observation).

At the present time, no restrictions on the total number of boats that must be licensed to buy or catch barramundi has been set. Presently only two boats operate in the inland and along the coastal waters. There is also, only two to three barramundi buying shops in Daru island that purchase barramundi landed along the coastal waters. These shops provide information on the barramundi that goes through them although there is no law that says that they must provide this

information to the Department of Fisheries and Marine Resources. The shops provide information through the records in the sales dockets.

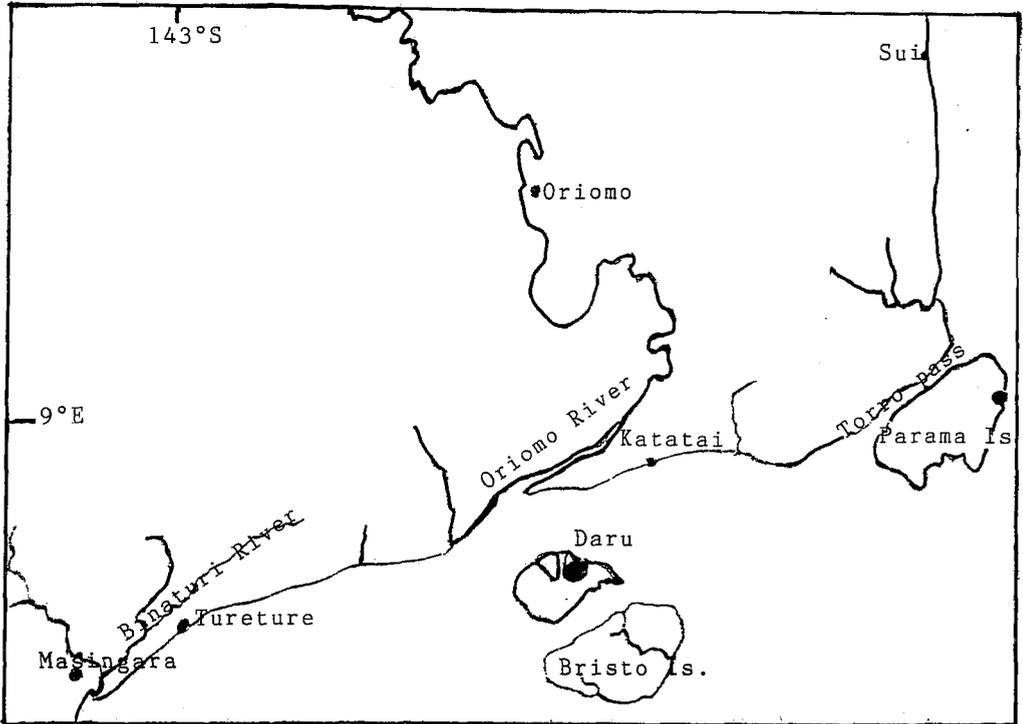


Figure 2. Gear restriction areas along the Daru coast.

Compliance with these measures.

Since 1989 the regulatory measures put in place have never been complied with by the local villagers/fishermen along the Daru mainland coastline from the Torro pass to the mouth of the Binaturi river. The sale of barramundi of sizes less than 50 cm fork length is a common sight at the Daru island market while nets of mesh sizes less than 6 inches are commonly found set along the whole coast line from Torro Pass in the east to the Binaturi River in the west during all months of the year. The greatest number of small size mesh nets are located just within the mainland coastline off the Island township of Daru. These nets are set by people who have come to Daru from the mouth of the Fly River to the east and are just squatting on local land.

Commercial artisanal fishermen have abided by the regulations put in place. To monitor the artisanal fishermen to see if they follow the regulations set, a requirement in their fishing licences states that data on the barramundi they catch or buy and process is recorded in log books produced by the Department of Fisheries and Marine Resources. The recorded data is then analysed to determine total numbers caught, sizes caught, sex ratios of the individuals caught, total weights of the individuals caught, areas they catch the barramundi and times (months) at which catches/purchases are made.

Most land based companies / factories on Daru island have been providing this data to the Daru fisheries research office. The only boat based operator has not been providing the information requested and thus total harvest by the fishery can not be properly quantified.

Enforcement of these measures.

The Enforcement branch within the Division of Licensing and Enforcement of the Department of Fisheries and Marine Resources in Papua New Guinea is responsible for enforcing the measures set by the Government such as the Prohibition notice given above. Because of the limited amount of funds given to the Enforcement outstations, a lot of inspection and surveillance work has never been carried out and this has led to fishermen breaking the measures set. The regulations set have also not been properly policed due to lack of properly trained and qualified staff and lack of staff initiatives to enforce these regulations.

Suggestions on improvements in measures placed and their enforcement.

It has been suggested that the restrictions on the use of nets of mesh sizes of less than 6 inches between the periods of January to July be changed to cover only the months of March to May and August to September each year. This is because the major recruitment group of juvenile barramundi would then be given a chance to migrate along the coast and up into the river systems and deltas (Mobiha, 1993). Fishing for protein by the settlers around Daru would still be carried in the other months of the year but the closure or net size restriction period would enable the major juvenile barramundi schools to have migrated up into the freshwater systems.

The reduction in total annual barramundi landings each year has been due largely to recruitment overfishing (ie catching of juveniles above) and growth overfishing (ie the catching of adults before they can spawn) (Table 1). Growth overfishing has occurred for the PNG barramundi fishery since it started as the fishery targetted the annual spawning run. The spawning stock are caught before they can get to the spawning site and spawn. To avoid the problem of growth overfishing, the coastal fishery should operate only every second or third year and or not be allowed to operate in the months of September and October each year.

Table 1. Total barramundi catch landings (from factories and freezer boats) for the Papua New Guinea, Western province barramundi fishery between 1971 and 1990 (Fishing year September 1st to August 31st).

YEAR	TOTAL CATCH (kg)	YEAR	TOTAL CATCH (kg)
1971/72	394	1981/82	328
1972/73	241	1982/83	187
1973/74	284	1983/84	139
1974/75	352	1984/85	118
1975/76	179	1985/86	67*
1976/77	210	1986/87	150*
1977/78	170	1987/88	75*
1978/79	207	1988/89	29*
1979/80	221	1989/90	41*
1980/81	308		

* Coastal fishery and one inland factory only (no boats).

The powers of enforcement of the regulations for the barramundi fishery should most probably be given to the local Councils. They would then be responsible for apprehending any one who breaks the regulations and with the assistance of Department of Fisheries and Marine Resources, officers prosecute anyone they apprehend. Fines they collect from the court case if the person is found guilty should be paid to the local Councils to be used by them as this would then become one of their revenue making activities and gives the Councils the incentive to undertake enforcement work.

At the present time no proper records are possible for the numbers of barramundi fishermen and the number of nets each of these fishermen use. The barramundi fisherman should all be registered by the Department of Fisheries and Marine Resources and all nets being used by each of these fishermen should be measured and numbered. This would enable proper catch and effort data by the barramundi fisherman to be recorded. Catch and effort data collected can then be used to assist in better managing the barramundi fishery.

Because most of the fishing companies are usually owned by someone from outside the province, a percentage of the licence fees should be paid to the province in forms of tied aid to services or infrastructure development in the fishing areas. This would show the villagers in the area that something does come from their resources (besides the payment they get from selling barramundi to fishermen) if they are managed properly and harvested in a sustainable way as the regulations put in place are supposed to enable. Since the licensing of barramundi fishermen in the Western Province most villages along the barramundi fishing areas have had no benefits besides the cash income they get from their resources.

References

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