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**ILLEGAL FISHING FOR SEA CUCUMBER (BECHE-DE-MER) BY PAPUA
NEW GUINEA ARTISANAL FISHERMEN IN THE TORRES STRAIT
PROTECTED ZONE**

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Abstract

Intensive fishing in the artisanal beche-de-mer fishery in the Warrior reef resulted in falling catch rates at the Papua New Guinea (PNG) jurisdiction of the Warrior reef, resulting in depleted stocks which forced PNG fishermen to fish illegally at the Australian jurisdiction of the warrior reef. Increased patrols by Australian authorities in the Torres Strait Protected Zone resulted in apprehensions and prosecution of offending PNG fishermen, who were prosecuted in both Australia and PNG. Apprehensions and prosecution did not deter illegal fishing which continued until the fishery was closed in September, 1993. Illegal fishing presented PNG with an embarrassing situation, given that PNG has a ratified treaty with Australia called the Torres Strait Treaty. Illegal fishing activities had negative implications to the Torres Strait Treaty, fishery, legal, costs and management. Fishing in the Australian jurisdiction of the Warrior reef to levels that would make it uneconomical for PNG fishermen to fish there is suggested as the best remedial action to stop illegal fishing.

Introduction

The Torres Strait islands stretches from Cape York in Australia to Western Province in Papua New Guinea (PNG). The Torres Strait islands was annexed by Queensland between 1872 and 1879 with the border running within 3 kilometres of the Papuan coast. This was because the best fishing grounds for pearls, trochus and beche-de-mer lay in the northern portion of the strait (Johannes and MacFarlane, 1991). Under the treaty signed by Australia and PNG in 1978 and ratified in 1985 (Haines, 1986, Johannes and Macfarlane, 1991) the border was shifted south to the present border (figure 1). A consequence of the international border between Queensland and later Australia and PNG was the implication on traditional fishing activities in what is now known as the Torres Strait Protected Zone. This area was traditionally fished by Torres Strait islanders and their

relatives in the coastal villages from coast of Western Province, Papua New Guinea. The Torres Strait Treaty, however acknowledged and recognised and protected the rights of these people to freely carry out traditional activities including traditional fishing in the area, as they have done so for generations.

The largest reef system within the Torres Strait Protected Zone is the warrior reef complex stretching from north to south. These reefs are extensively fished for dugongs, turtles and fish by the coastal villages of Western Province. In 1990, an artisinal beche-de-mer fishery involving fishermen addressed in the Torress Strait Treaty as traditional users and those from outside the treaty arrangement, exploited sandfish (Holothuria scabra) at the warrior reef. The fishery was based in Daru, with fishermen using banana boats and traditional outrigger canoes to fish and transport the catch to Daru for processing and sale. Harvesting was by walking on the reef during low tide and sometimes by snorkelling in shallow waters.

In what is attributed to low catch rates of the more valuable larger sandfish, fishermen started fishing illegally on the Australian waters of the Warrior reef in 1991. This resulted in Australian authorities stepping up patrols in the area which resulted in the apprehension of fishermen, confiscation of fishing gear and prosecution of fishermen. Incidence and patterns of illegal fishing in Australian waters of the Warrior reef and its implications are discussed in this paper.

Incidence of Illegal Fishing

Sightings of illegal beche-de-mer fishing was reported 2 years after the fishery commenced but fishermen indicated that illegal fishing occurred as early as 1991. This appears to be a typical case of fishermen behaviour in which fishing is not random but is selective in which the fishermen try to maximise catch. This happened in the warrior reef where there was a spartial shift in effort on a north south direction attributed to over-fishing from the north of the Warrior reef and progressing south. This progression is economically valid because Daru which is the main centre of trade for beche-de-mer lies north from the Warrior reef (figure 1).

Illegal fishing continued through to the closure of the fishery in 1993. Illegal fishing activities decreased after increased patrols by the Australians and after apprehensions of large numbers of fishermen, but did not stop it.

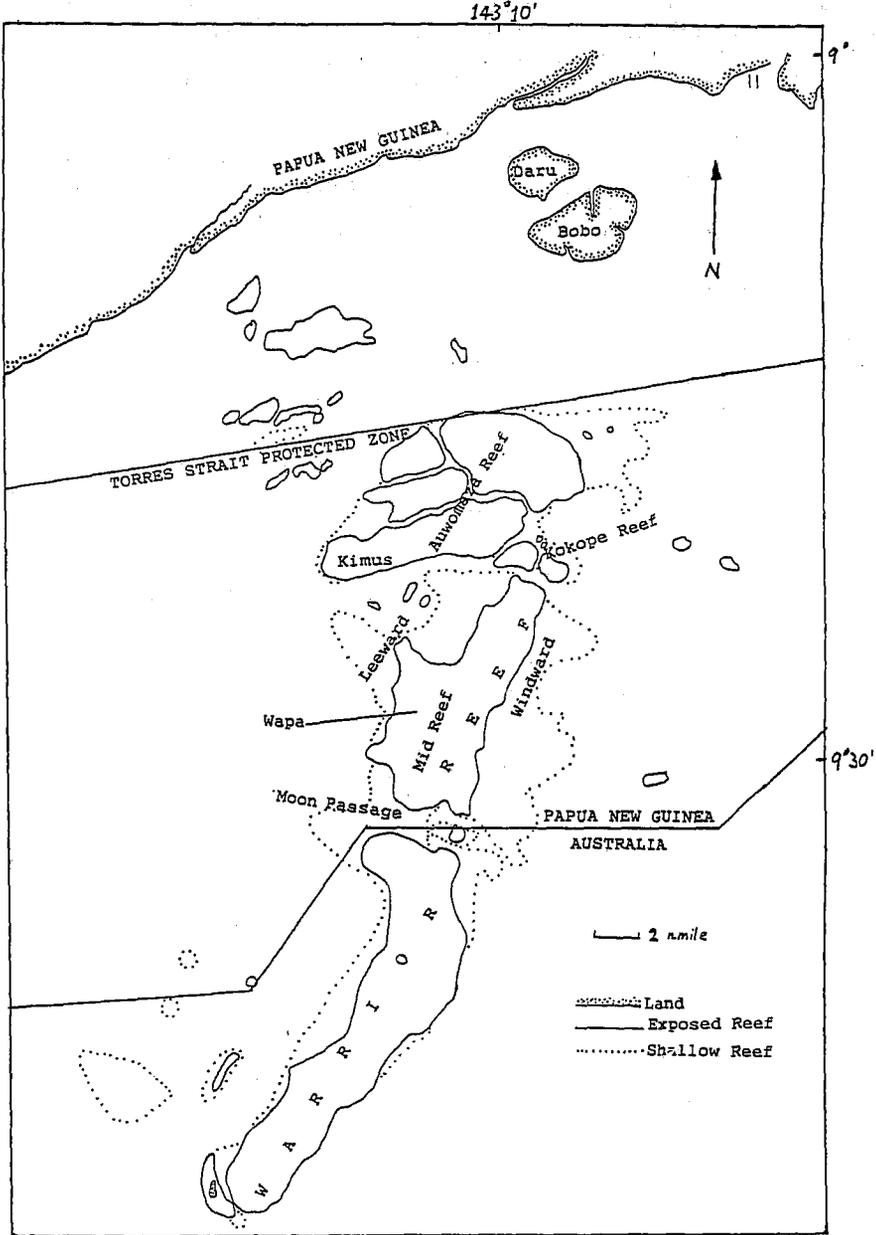


Figure 1. Map showing the WarrIOR reef and its two major reefs, Auwomaza and Wapa.

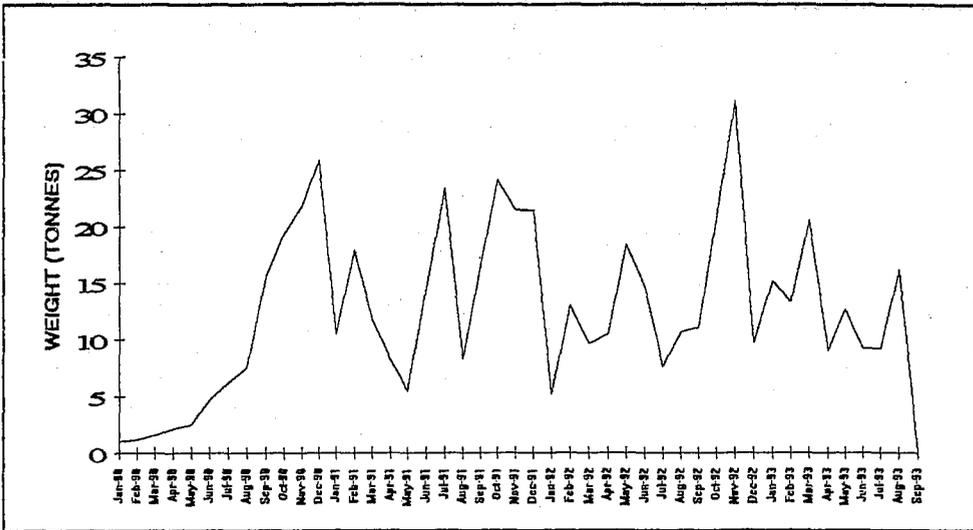


Figure 2. Monthly production (dry weight-tonnes) as landed at Daru from 1990 to September 1993. The fishery was closed in September, 1993.

Both day and night time poaching of sea cucumber was undertaken. As soon as apprehensions of PNG fishermen commenced most of the day time poaching occurred at sunset after the Australian Customs plane flew its random weekly patrols on the Australian and PNG side of the Torres Strait Protected zone. Night time poaching occurred when the tide was not favourable to daytime poaching and especially after the Australians increased patrol. Poaching was timed with low tide as this allowed fast collection.

Illegal fishing co-incident with the first rapid decline in production in 1991 (Lokani, unpublished data) was related with declining production (see figure 2) in early 1991.

Apprehensions

Increased patrol in the area by Australian authorities resulted in the apprehension of offending illegal PNG beche-de-mer fishermen. The first successful apprehension was on the 2nd September, 1992. From a total of 35 fishermen apprehended by Australian authorities, only the seven skippers of the boats were prosecuted. The rest of the fishermen were cautioned and released. The first apprehensions did not deter illegal fishing which continued to occur. This resulted in more apprehensions in 1992 until 1993 (table 1).

Boats confiscated were banana boats and traditional dug out canoes powered by outboard engines ranging in size from 25 to 40 HP (table 2). The apprehended fishermen and gear were shifted to Thursday island and later to Cairns lockup.

Table 1. Number of apprehended fishermen by Australian authorities

MONTH	NUMBER OF FISHERMEN APPREHENDED
02/09/92	35 (7 prosecuted in Australia, rest released)
18th Nov. 1992	8 (prosecuted in Australia)
Nov 92	23 (prosecuted in PNG)
16th Dec. 1992	39 (prosecuted in Australia)
Dec 1992	58 (prosecuted in PNG)

Table 2. Boat types confiscated by Australian authorities on the 12th December, 1992.

BOAT TYPE	HP	LENGHT	NO. FISHERMEN
Banana	40	6 meters	6
Banana	25	6 meters	5
Banana	40	6 meters	5
Banana	25	6 meters	5
Banana	30	6 meters	4
Outrigger	30	8 meters	10
Outrigger	30	9 meters	9
Outrigger	15	9 meters	8

Implications to the Torres Strait Treaty

Implementation of the Torres Strait treaty is carried out by PNG, QDPI and Commonwealth of Australia. In PNG the Fisheries Resources are regulated through the Torres Strait Fisheries Act of PNG, Fisheries Act and the Continental Shelf(Act.

PNG prosecuted offending PNG fishermen as stipulated in Article 28 paragraph 6 of the Torres Strait Treaty 'corrective action in respect of offences or suspected offences against the fisheries laws or regulations of the Parties shall be taken by the authorities of the Party whose nationality is borne by the vessel or person concerned (called in this article "the first party" and not by the Party in whose jurisdiction the offence or

suspected offence occurs (called in this Article "the second Party"). Australian officers overlooked this clause and prosecuted some fishermen in Australia. The balance of the offending fishermen were prosecuted in PNG by PNG authorities.

Legal and prosecuting costs, are therefore effectively transferred back to the country of the offending fishermen. It is therefore in the interest of PNG that all measures are taken to stop illegal fishing in Australia. PNG rightly responded by introducing a moratorium in September, 1993 for 3 months. This was later extended to March 1995.

Illegal fishing activities hindered discussions in the cross border endorsement by Australian authorities during the Joint Technical/Management meeting on the Torres Strait Protected Zone. Australia emphasised strongly that it was not going to enter any discussions on cross border endorsement of beche-de-mer fishing under the current circumstance of illegal fishing by PNG fishermen.

While Australia understands that PNG does not have the capacity for effective surveillance in PNG and the Torres Strait Protected Zone, she gave the impression that PNG was not doing enough to contain PNG fishermen within its legal limits. A letter from the Commonwealth regional Legal Officer based in Townsville to the Solicitor General of PNG, complained that the ruling by a Magistrate on prosecutions conducted by PNG authorities was too lenient and was not acting as an effective deterrent.

Differences such as this may develop and jeopardise the co-operation and understanding that they have in jointly managing the Torres Strait Protected Zone. A similar case in the exploitation of Dugong lead PNG to complain that it was enforcing management but Australia was not doing the same. This lead to the breakdown in co-operation and possibly over-exploitation.

Implications to the beche-de-mer Fishery

Because of paucity in the spatial distribution of effort depleting stocks cannot be detected using surplus yield models without detail monitoring of spatial distribution of effort. If the fishery was monitored through catch and effort, fishermen crossing to the Australian side are more likely to report the catch as collected in PNG. Application of fishery models on the data would be erroneous without complimentary information on the behaviour of the fishermen. Lokani, (unpublished data) was able to apply the surplus yield model to some component of the catch data only after verifying the distribution of effort. The CPUE in the fishery for Parastipopus carlifornicus in the Washington State beche-de-mer fishery, appeared stable, but in reality half the area fished were over-fished (Bradbury (1994)). This was due in part to the spatial distribution of effort where fishermen increasing effort in deeper areas. Monitoring the behaviour of the fishermen together with an accurate recording of the area fished is important. This would ensure that the distribution of effort is accounted for.

There are provisions for joint management (Haines, 1986) and cross border endorsement that allows a quota of the yield to be fished by PNG licensed boats on the Australian jurisdiction of the Protected Zone and vice versa (e.g. Lobster dive fishery and Prawn fishery). Negotiations for such arrangements was jeopardised with illegal fishing activities by PNG fishermen.

Legal Implications

PNG fishermen apprehended in Australian waters for illegally fishing in the warrior reef were prosecuted both in Australia and PNG. In Australia they were prosecuted for breach of the Torres Strait Fisheries Act and Fishing Industry Organisation and Marketing Act. In PNG they were prosecuted under the Torres Strait Fisheries Act.

Because the fishermen were apprehended in Australian waters by Australian authorities prosecution of fishermen in PNG would require arresting officers who were Australian Fisheries Officers. Fortunately fishermen prosecuted in PNG pleaded guilty, therefore the need to bring in Australian witnesses was not required.

Rulings for cases heard in PNG on fishing gear is not clear. In any case Queensland authorities were supposed to have sold by tender all the fishing gear held by them including the gear for fishermen prosecuted in PNG.

Costing Implications to Australia & PNG

Increased patrol and legal costs are expensive. Both Australia and PNG incurred expenses associated with surveillance and prosecution. There was concern by the Australian Fisheries Authorities that the cost of investigating, apprehending and prosecuting illegal fishing in the warrior reefs was very high. Given that Australia and PNG have an understanding on surveillance of the Torres Strait Protected Zone with provisions for joint surveillance, it is unnecessarily expensive for Australia to direct its resources to a problem that could be solved by sustaining yields in PNG or by legitimising illegal fishing by endorsement or cross border fishing.

Implications to the Fishermen

Direct cost implications as a consequence of being apprehended and prosecuted by Australian Authorities are loss of fishing gear and fishing boats and court fines (if not imprisoned). Closure of the fishery lead to the loss of income to the fishermen estimated at K1.0 million while government revenue estimated to be K150,000.00 and export revenue to the companies valued at K3.0 million kina annually.

Coastal villagers covered under the Protected Zone are ecologically and economically disadvantaged (Lawrence, 19..) and

the lose of fishing gear was a big economic lose. Fishing at the warrior reef is the principle area from which the fishermen derive cash and subsistence needs. The lose of fishing gear (including crafts) was very serious indeed. This was displayed by some fishermen in trying to avoid arrest on the reef. A case in point was the incident in which a fishermen assaulted an arresting and escorting officer on the reef which nearly left him drowned.

Management Implications

It is clear that the socio-political objective of the beche-de-mer fishery is important and may shadow the economic and biological objectives. The socio-political objective can be addressed directly or indirectly. This has already been addressed directly both by the Australian and PNG authorities. Australia reacted to increased illegal fishing in Australia by stepping up patrols which resulted in apprehending and prosecuting illegal fishing in their waters. Australia also pressured PNG to keep PNG fishermen in PNG waters. PNG reacted by hastily forming a management committee to address management of the beche-de-mer fishery. This resulted in the closure of the fishery in September 1993. The gazetted notice for the closure of the fishery was made under the Fisheries (Torres Strait Protected Zone) Act (Chapter 210) and Continental Shelf (Living Natural Resources Act (Chapter 210). The closure was for the period September 1993 to March 1994, and later extended to March, 1995.

Fishermen interviewed indicated that the main reason they fished in Australian waters of the Warrior reef was because of the over-exploitation of stocks on the PNG side of the Warrior Reef and desire to harvest large sizes of sandfish. Despite apprehension of PNG fishermen as early as June 1992, PNG fishermen continued to cross over to Australia to fish up until the closure of the fishery. Apprehension and prosecution therefore did not deter illegal fishing. Fishermen were driven by high prices and a relatively easy and fast way to earn money daily on a daily basis.

The socio-political objective of preventing illegal fishing and honouring the Torres Strait Treaty could be achieved indirectly by addressing the biological objective instead, without resorting to closing the fishery. This would therefore require sustainable exploitation which need to be achieved by conducting studies on the fishery and biology of beche-de-mer species. This has been initiated by the Department of Fisheries and Marine Resources of PNG.

An alternative strategy to stop illegal fishing in Australia is to licence Australian fishermen to fish the Australian side of the Warrior Reef. this would effectively reduce the population densities to a level which would make it uneconomical for PNG fishermen to conduct illegal fishing activities on the Australian jurisdiction of the Warrior reef. Since the labour cost in Australia is very high an arrangement could be made by having an Australian company owning the license and hiring PNG fishermen

to fish for him.

The need for jointly managing the fisheries has not been realised, partly because Australia does not have a recognised fishery for beche-de-mer in the Torres Strait Protected Zone. If the need for joint management arises then both countries should have effective enforcement. Enforcement of Dugong exploitation in PNG was unsuccessful because Australian authorities failed to control Australian based subsistence fishermen (islanders) (Johannes and MacFarlane, 1991).

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