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**Overview of Deepwater Snapper fisheries
in the SPC region**

By Tim Adams and Lindsay Chapman



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Introduction

This paper is a very brief overview of the deepwater snapper fishery in the insular Pacific, based on information available to the Secretariat of the Pacific Community. The appendix table is drawn from a paper by Lindsay Chapman on the status of fisheries development in the Pacific Community region to be published in a compendium of information drawn together for the Pacific Islands Regional Ocean Forum to be held in February 2004²

History

Fishing for eteline or deepwater snappers (reef-slope and shallow seamount species, mainly of the family Serranidae, found most abundantly between the 100 and 300m depth contours in the tropics and subtropics) has been carried out commercially in the insular Pacific for several decades.

During the 1970s and 80s it was a major focus of development assistance as agencies like SPC (then called the South Pacific Commission) encouraged Pacific Island enterprises to move away from reef and lagoon fishing, with its very limited commercial development potential, to unexploited fisheries.

However, deepwater snapper fisheries were also quickly found to be more limited than had been first thought. This was more or less a virgin fishery and catch-rates were high. Most Pacific Island fishers are not familiar with virgin fisheries, since most reef species have been fished for hundreds of years. Many business plans that were projected on these initial high catch-rates were found to be unsustainable when the fishery settled down to a sustainable equilibrium, where catch rates were around one-third of the virgin fishery, and the focus of development gradually switched to the small-scale tuna longline fishery, which started to look profitable in the late 1980s to 90s, and into which most of the bigger commercial operators diverted their attention.

The late 1980s was also a time when many Pacific Island countries developed management plans for the deepwater snapper fishery, using broad-brush stock assessments based on catch-effort data, depletion experiments, and with considerable exchange of experience between countries. In many cases a “rule of thumb” was developed based on a typical sustainable catch per nautical mile along a certain depth-contour of the outer reef-slope and seamounts, or the area between contours, and national total allowable catches were estimated, and in some countries split between a limited number of licenced vessels.

It is likely that deepwater snapper was never technically overfished in any country, but the reduction from virgin to sustainable catch rates was enough to persuade many operators to move into tuna longlining, thus taking the pressure off deepwater snapper resources for much of the 1990s. This was a typical “boom and bust” fishery, although the “bust” when it came, was more for reasons of reduced commercial profitability than overfishing. A typical pattern was for the virgin stock on seamounts and reef-slopes close to port to be reduced, and for fishing effort to then move further and further afield in search of high catch-rates – a cycle that might several years, depending on the size of the country. Like many site-associated fisheries, some areas were quick to recover, and some slow, and very little was known about the life-history and possible movements of these species at this time.

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www.spc.int/mrd

² See www.piocean.org

One country where the fishery has been more continuous than most others is Tonga, which has a relatively high number of shallow seamounts and banks in its waters, and where exploitation was mainly by small boats using hand-powered gear. There has been a considerable amount of stock assessment and analysis carried out in Tonga and it is probably the best place in the SPC region to assess the sustainability of deepwater snapper fisheries. But the island region where by far the most effort has been put into deepwater snapper assessment and management is the US insular Pacific fishery, managed by the US Western Pacific Regional Fisheries Management Council. There are several presentations from this region at this workshop, so no elaborations will be made here. However, both Tonga and the US insular Pacific have contributed a great deal to management policies or plans elsewhere in the region.

Current situation

The appendix contains a table summarising the current state of deepwater snapper fisheries in the SPC region, based on a rapid interview survey carried out over the past three months. This will be supplemented with new information as it comes to hand.

Deepwater snapper fisheries are facing renewed attention in the Pacific Islands after a poor year with low catch-rates in the tuna longline fishery, and fishery managers will need to dust off old deepwater snapper management plans, or otherwise make allowance for an increase in commercial attention in fisheries which have been left for a decade or so to small-scale or part-time fishing vessels supplying the local market.

One of the drivers of the original 1980s boom – the downsizing of Australian and New Zealand fisheries that forced many fishing vessels from those countries to look for new pastures in the Pacific Islands – seems to be picking up strength again as fisheries in these countries face further pressure. New Zealand vessels are already carrying out exploratory deepwater fishing in several Pacific Islands. Hopefully they are keeping their expectations low since there has already been a great deal of exploration in previous decades. Nobody likes to report failures.

It is not particularly difficult to assess the rough potential of deepwater snapper fisheries – the rules of thumb developed in the 1980s are still relevant – and the most cost-effective precautionary form of management for small-island states – the limited-entry licencing of larger vessels, and the prohibition of certain gear such as bottom-set gillnets – is achievable, even if there may be some loss of opportunity. For most developing countries it makes sense to “pay” for management through potential lost opportunities than by paying for a large assessment and enforcement infrastructure with hard cash.

The main impediment to precautionary action, as it was in the 1980s, is likely to be national economic aspirations. However, politicians nowadays have a much greater appreciation of the depth of public concern about the impacts of fisheries, and more likely to see the benefit of maintaining the profitability of local enterprises by limiting overall exploitation – by approaching the limits of the fishery from the lower end, rather than having to cut back overcapacity.

SPC acts as a clearing-house for Pacific Island states to share information and experiences about island fisheries of all kinds, particularly small-scale fisheries. Unfortunately, our capacity to address deepwater snapper fisheries withered along with commercial interest in the fishery itself, and we would struggle to keep pace if there were renewed developments in deepwater snapper. The priorities of our projects and programmes still lie with tuna fisheries and shallow reef fisheries.

We are hoping that this particular meeting will assist us in deciding whether a shift in priorities is warranted.

Appendix

Summary of deep-water fishing activities and development/management arrangements for these species by country/territory in the Pacific

Country/territory and information provider	Deep-water snapper fishing	Other deep-water fishing activities	Management arrangements for deep-water species
<p>American Samoa:</p> <p>Information provided by Ray Tulafono, Director, Department of Marine and Wildlife Resources (September 2003).</p>	<p>Currently around 6 small-scale alias fishing ad hoc for deep-water snappers.</p> <p>No boats or companies targeting these species.</p>	<p>No other nearshore or offshore deep-water fishing methods being used at present.</p>	<p>Bottomfish and seamount groundfish management plan implemented in August 86 by the National Marine Fisheries Service, which covers Guam, Hawaii, American Samoa and the Commonwealth of the Northern Mariana Islands. Plan has been amended several times.</p>
<p>Cook Islands:</p> <p>Information provided by Navy Epati, Secretary of Marine Resources and Ian Bertram, Director, Inshore Fisheries, MMR (September 2003).</p>	<p>Deep-water snapper fishing is conducted on an ad hoc basis by small-scale private sector fishermen. Two fishermen target deep-water snapper when there are no tuna around.</p> <p>Some deep-water snapper fishing in Penrhyn and Aitutaki, with fish sold locally.</p> <p>Ad hoc subsistence fishing for these species in the outer islands.</p>	<p>There are currently no other domestic nearshore or offshore fisheries in the Cook Islands, although one company will conduct fishing trials for various deep-water species (crabs, shrimp) using traps and possibly bottom longlines in late 2003.</p>	<p>At present there is no development and/or management plan in place for the deep-water snapper fishery, as there is little fishing of these stocks at present.</p>
<p>Federated States of Micronesia:</p> <p>Information provided by Bernard Thoulag, Executive Director, National Oceanic Resource Management Authority, Pohnpei, (September 2003).</p>	<p>Ad hoc fishery mainly for subsistence and artisanal fishermen with catches sold locally but not exported.</p>	<p>No other deep-water fishing methods conducted in nearshore or offshore waters at present.</p>	<p>At present there is no development and/or management plan for the deep-water snapper fishery as this is a local fishery that is not for commercial export.</p>
<p>Fiji Islands:</p> <p>Information provided by Maciu Lugibalavu, Director of Fisheries, and Apolosi Turaganivalu, Principal Fisheries Officer, Management and Technical Services, Fisheries Department (September 2003).</p>	<p>Some targeting of this species by tuna longline vessels due to low catch rates in the tuna fishery.</p> <p>Subsistence and artisanal fishing of these species, mainly ad hoc Nos ??</p> <p>Six vessels have been licensed to fish deep-water snapper in the Fiji EEZ outside 12 nm.</p>	<p>Some recent trials by a bottom trawler looking for alfonsino in deep-water.</p> <p>More info to come???</p>	<p>Deepwater snapper management plan of 1987 is presumably still operative. TAC was set at around 1000-1200mt for the whole country. The Offshore Licencing regulations introduced in 1990 provide a framework for governing the fishery through limited entry and other measures.</p>

Country/territory and information provider	Deep-water snapper fishing	Other deep-water fishing activities	Management arrangements for deep-water species
French Polynesia	No information as yet		
<p>Guam:</p> <p>Information provided by Gerry Davis, Chief, Division of Aquatic and Wildlife Resources, Guam (October 2003).</p>	<p>Deep-water snapper fishing is conducted on an ad hoc basis by around 180 small-scale vessels fishing around Guam.</p> <p>Less than 20 small-scale vessels would target deep-water snapper when the local weather conditions permit.</p>	<p>No other nearshore or offshore deep-water fishing methods being trialled or used at present.</p>	<p>Bottomfish and seamount groundfish management plan implemented in August 86 by the National Marine Fisheries Service, which covers Guam, Hawaii, American Samoa and the Commonwealth of the Northern Mariana Islands. Plan has been amended several times.</p>
<p>Kiribati:</p> <p>Information provided by Maruia Kamatie, Chief Fisheries Officer, Ministry of Natural Resource Development (September 2003).</p>	<p>Deep-water snapper fishing is conducted on an ad hoc basis by small-scale private sector fishermen.</p> <p>Deep-water species caught by the rural fishing centres sold to Central Pacific Producers (CPP) limited for marketing in Tarawa.</p>	<p>No other nearshore or offshore deep-water fishing methods or trials being conducted at present.</p>	<p>At present there is no development and/or management plan in place for the deep-water snapper fishery, however, the Fisheries Department is looking at the potential to further develop this fishery.</p>
<p>Marshall Islands:</p> <p>Information provided by Danny Wase, Director, Marshall Islands Marine Resources Authority (September 2003).</p>	<p>Currently an ad hoc fishery using small local boats, with the catch sold locally.</p> <p>Increasing interest in deep-water snapper fishing, and this fishery could be targeted in the future.</p>	<p>No other nearshore or offshore deep-water fishing methods or trials being conducted at present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery, although there is interest to develop this fishery.</p>
<p>Nauru:</p> <p>Information provided by Anton Jimwereiy, Acting Chief Executive Officer, and Peter Jacob, Research and Development Manager, Nauru Fisheries and Marine Resources Authority — NFMRA (August 2003).</p>	<p>Ad hoc fishing for deep-water snappers conducted by small-scale local boats. This is mainly for home consumption.</p>	<p>There is currently no other nearshore or offshore deep-water fishing activities or trials underway around Nauru.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery.</p>
<p>New Caledonia:</p> <p>Information provided by Régis Etaix-Bonnin, Ingénieur chargé des pêches, Service de la Marine Marchande et des Pêches Maritimes (October 2003).</p>	<p>10 to 12 full time vessels targeting deep-water snapper around the country using handreels and short bottom longlines, mainly for the local market.</p> <p>Around 10 vessels fishing for these species on infrequent occasions.</p>	<p>There are no other deep-water fishing methods being trialled or used at the present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery. However, a study is being considered that could lead to a management plan being developed for this fishery.</p>

Country/territory and information provider	Deep-water snapper fishing	Other deep-water fishing activities	Management arrangements for deep-water species
<p>Niue:</p> <p>Information provided by Brendon Pasisi, Principal Fisheries Officer, Ministry of Agriculture, Forestry and Fisheries (September 2003).</p>	<p>Mainly an ad hoc fishery with up to 20 boats and 120 canoes fishing occasionally.</p> <p>Six small boats target deep-water snappers at times.</p>	<p>There is currently no other nearshore or offshore deep-water fishing activities or trials underway off Niue</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery, although an inshore fisheries management plan is being developed at present, which covers these species.</p>
<p>Northern Mariana Islands:</p> <p>Information provided by Richard Seman, Director, Division of Fish and Wildlife (August 2003)</p>	<p>There are currently 5 vessels over 15 m in length primarily fishing for deep-water snappers at present.</p> <p>Small-scale fishermen fish occasionally for these species on an ad hoc basis.</p>	<p>No other nearshore or offshore deep-water fishing methods being trialled in the CNMI zone at present.</p>	<p>Bottomfish and seamount groundfish management plan implemented in August 86 by the National Marine Fisheries Service, which covers Guam, Hawaii, American Samoa and the Commonwealth of the Northern Mariana Islands. Plan has been amended several times.</p>
<p>Palau:</p> <p>Information provided by Silas Orrukem, Director, Bureau of Oceanic Fishery Management (September 2003)</p>	<p>Ad hoc fishery with no vessels or companies targeting these species. Catch is mainly sold on the local market. Previous SPC trials suggest deepwater species found at shallower depths in Palau than other countries</p>	<p>One vessel is doing a small amount of trapping for deep-water crabs and deep squid jigging for the large diamond-back squid.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery.</p>
<p>Papua New Guinea:</p> <p>Information provided by Molean Chapau, Managing Director and Ludwig Kumoru, Manager Tuna Fisheries, National Fisheries Authority — NFA (September 2003).</p>	<p>Mainly an ad hoc fishery due to rising costs and marketing problems.</p> <p>Artisanal fishing for these species in several locations, such as Manus and West New Britain with the catch sold locally.</p>	<p>No other nearshore or offshore deep-water fishing methods being trialled at present. However, NFA has 12 trial fishing permits for new fishing methods or resources or for fishing new areas.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in PNG, although this will be looked at and addressed in the future.</p>
<p>Pitcairn Islands:</p> <p>Information provided by Leon Salt, Commissioner for Pitcairn Islands (October 2003) and taken from Sharples (SPC) 1994.</p>	<p>Very little deep-water snapper fishing undertaken, and this is on an ad hoc basis by a couple of boats.</p>	<p>There are no other nearshore or offshore deep-water fishing trials or activities being undertaken at present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery.</p>

Country/territory and information provider	Deep-water snapper fishing	Other deep-water fishing activities	Management arrangements for deep-water species
<p>Samoa:</p> <p>Information provided by Tanielu Su'a, Director/ Head of Samoa Fisheries (September 2003).</p>	<p>Fishing is currently ad hoc although increasing as displaced tuna longline alias enter the fishery.</p> <p>Government is promoting this fishery and is conducting fishing trials to gather data for a stock assessment, with this to be compared to the work of 10 years ago.</p>	<p>No other nearshore or offshore deep-water fishing activities at present.</p> <p>One proposal is being considered for the mariculture of mahi mahi in nearshore cages (outside the reef).</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in Samoa. However, once the new stock assessment is complete, a management plan for this fishery will be developed (planned for early 2004).</p>
<p>Solomon Islands:</p> <p>Information provided by Sylvester Diake, Under Secretary for Fisheries, Ministry of Natural Resources (September 2003).</p>	<p>Rural fishing centres (RFCs) target deep-water snapper for both local and export sales (around ?? boats in total).</p> <p>Several boats working out of Honiara target deep-water snappers.</p> <p>Other local fishermen fish deep-water snappers infrequently on an ad hoc basis.</p>	<p>No other fishery development projects for nearshore or offshore deep-water fishing at present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in the Solomon Islands, although the government is promoting the harvesting of this resource.</p>
<p>Tokelau:</p> <p>Information provided by Mose Pelasio, Senior Policy Advisory Officer, Natural Resources and Environment Unit, Office of the Council of Faipule (September 2003)</p>	<p>Deep-water snapper fishing is conducted on an ad hoc basis by small-scale private sector fishermen on all 3 atolls and used for home consumption.</p>	<p>No other nearshore or offshore deep-water fishing activities at present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in Tokelau.</p>
<p>Tonga:</p> <p>Information provided by Vilimo Fakalolo, Principal Fisheries Officer, Policy and Planning Section, Ministry of Fisheries (September 2003).</p>	<p>Two main companies targeting deep-water snappers for export, one company has a processing facility in Vava'u as well as in Nuku'alofa. Total of 24 vessels targeting these species (18 from Nuku'alofa and 6 from Vava'u).</p> <p>Other fishermen fish deep-water species on an ad hoc basis with the fish eaten at home or sold on the local market.</p>	<p>Two ex-Korean vessels doing exploratory fishing (with observer coverage) in deep-water. One vessel is trapping and the other is bottom longlining. Fishing trials commences in September 2003.</p> <p>Current catch around 300-350mt per year, 70% of which is exported.</p>	<p>The deep-water snapper fishery is currently managed under the 'Final draft deep-water (bottom-line fishery) management and development plan (2000), which recommends a MSY of 350 t/year through limiting vessel numbers and gear.</p>

Country/territory and information provider	Deep-water snapper fishing	Other deep-water fishing activities	Management arrangements for deep-water species
<p>Tuvalu:</p> <p>Information provided by Sautia Maluofenua, Director of Fisheries, Tuvalu (August 2003).</p>	<p>Fishing is currently ad hoc, conducted by subsistence and artisanal fishermen.</p> <p>At present there is no company or fishermen specifically targeting these species.</p> <p>Plan to target seamounts between Tuvalu and Fiji (Tuvalu zone) using larger vessel when available.</p>	<p>There are no other nearshore or offshore deep-water fishing activities being trialled at present.</p>	<p>Management plan developed under the 1988 PIMAR project.</p>
<p>Vanuatu:</p> <p>Information provided by Moses Amos, Director of Fisheries, Fisheries Department (September 2003).</p>	<p>Main target fishery in Vanuatu with over 100 small-scale vessels of 5.6 to 7.5 m in length.</p> <p>3 vessels of 9 to 10 m in length fish the same areas as the small-scale vessels, plus fish on seamounts.</p> <p>2 vessels over 10 m in length also fishing deep-water snappers, with these vessel required to fish outside 6 nm.</p>	<p>One vessel trapping deep-water crabs in depths of 500 to 700 m with the crabs exported.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in Vanuatu. However, the Fisheries Department is looking to develop a management for this fishery in the near future with outside assistance.</p>
<p>Wallis and Futuna:</p> <p>Information provided by Jacques Fourmy, Chef des services territoriaux des affaires rurales et de la pêche de Wallis et Futuna, (October 2003).</p>	<p>Deep-water snapper fishing is conducted on an ad hoc basis with around 10 vessels operating around Wallis and another 10 vessel operation around Futuna, with the fish sold on the local markets.</p>	<p>No other nearshore or offshore deep-water fishing activities undertaken at present.</p>	<p>Currently there is no development or management plan for the deep-water snapper fishery in Wallis and Futuna.</p>

Further reading

Adams (1989) Deepwater Snapper Fishery Limitation Policy. Fiji Cabinet Paper, September 1989 (Archives of the Fiji Government)

Dalzell, P., & G.L. Preston (1992) Deep reef slope fishery resources of the South Pacific. Inshore Fisheries Research Technical Document No.2. South Pacific Commission, New Caledonia (recommends a TAC for each country based on length of 300m isobath and catch rates assessed to be sustainable from trial fishing by SPC masterfishermen)

Dalzell, P. J. , Adams T. J. H. , & Polunin, N. (1996) Coastal Fisheries of the Pacific Islands. *Oceanography and Marine Biology: An Annual Review* 34, 395-531

Forum Fisheries Agency (1988-1995) Fisheries Resource Profiles (series covering FFA island member countries includes summaries of deepwater snapper fisheries – to be made available on the SPC website in the near future with FFA permission)

Lewis, A.D., A. Sesewa & T. Adams (1988) The Fiji deep-water snapper fishery - its development and management requirements. Paper presented at the SPC Inshore Fisheries Resources Workshop 1988 (other papers presented at this workshop are listed at www.spc.int/coastfish/Reports/IFRP/IFRWPUB.htm and copies can be made on request to tima@spc.int)

Preston, G.L, P. Mead, L. Chapman and P. Taumaia (1999) Deep Bottom Fishing Techniques for the Pacific Islands: A Manual for Fishermen. Secretariat of the Pacific Community, New Caledonia. ISBN 982-203-681-7

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Wright, A. & L. Hill (1993) Nearshore Marine Resources of the South Pacific. 710pp. Forum Fisheries Agency, Honiara, Solomon Islands. ISBN 982-02-0082-2.