

Addressing Shark Finning in FFA Member Countries: Issues and Considerations



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ACRONYMS AND ABBREVIATIONS

CITES	Convention on International Trade in Endangered Species
CPCs	Contracting Parties, Cooperating non-Contracting Parties, Entities or Fishing Entities
DWFN	Distant Water Fishing Nation
EEZ	Exclusive Economic Zone
ENGO	Environmental non-Governmental Organization
FAO	Food and Agriculture Organisation of the United Nations
FFA	Forum Fisheries Agency
FSM	Federated States of Micronesia
kg	kilograms
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action (sharks)
IUCN	International Union for the Conservation of Nature
NAFO	Northwest Atlantic Fisheries Organisation
NOAA	National Oceanographic and Atmospheric Administration
NPOA	National plan of Action (sharks)
PICs	Pacific Island member countries of FFA
RFMO	Regional Fisheries Management Organization
RSW	Refrigerated seawater
SCRS	Scientific Committee on Research and Statistics
TAL	Tropical Albacore fishery
TDL	Tropical Deep Longline fishery
TSL	Tropical Shallow Longline fishery
WCPFC Convention	Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
WCPO	Western and Central Pacific Ocean

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SUMMARY

Basis for shark fin demand in commerce

Increased demand in last 20 years for shark fins has been driven by (1) social and political reforms in China that have not discouraged consumption of shark fin soup as in the past, (2) relaxation of trade restrictions between Hong Kong and China that have made it easier and more profitable to process shark fins in China that are originally exported to Hong Kong from worldwide sources, and (3) economic expansion in China, including Hong Kong that has created an expanded middle class more able to afford high priced delicacies such as shark fin soup.

Relative importance of shark fins from FFA Member Countries

Available Hong Kong trade data from 1998 representing about 50 percent of total shark fin trade worldwide indicates that the "Oceania" category represented about 3.4% of imports into Hong Kong by weight during that year. Of the seven countries listed in this category, Australia was by far the largest source of imports. Other areas with significant exports were Fiji, Samoa, and "U.S. Oceania" (assumed to be mainly American Samoa).

Impetus for and international legislative responses to shark finning

Much of the impetus for imposing bans on shark finning has originated with ENGOs. Legislation banning finning now exists in the U.S., Australia, Brazil, Costa Rica, Ecuador, and the European Union. In the Pacific Islands, the laws of Palau are the most encompassing, banning the possession of sharks or any shark body parts onboard foreign fishing vessels in the Palau EEZ.

RFMO approaches to shark Finning

The adoption of a binding recommendation by ICCAT concerning shark conservation including a ban on finning was preceded by four years of discussion and the adoption of several preliminary non-binding resolutions, including those to provide information on shark catches and recommending conducting stock assessments on those species most commonly caught as bycatch.

The validity of the provision that fins onboard total no more than 5 percent of sharks onboard is being re-evaluated and discussed in ICCAT and IATTC.

Only the IATTC binding resolution suggests that parties "should establish a national plan of action for sharks". ICCAT and IOTC do not address NPOAs in their shark conservation recommendations.

ICCAT and IOTC recommendations are specific that parties shall consider appropriate assistance to developing CPCs for the collection of data on their shark catches. A similar provision by IATTC say sit will consider assistance to developing CPC for collection of data on shark catches,

Current FFA member country management approaches to shark finning

presumably not just catches of the flag state.

Cook Islands and Vanuatu ban shark finning as a result of their membership or being a cooperating non-party in one or more of the RFMOs. Australia bans shark fisheries in all its fisheries through domestic law or regulation, as well as being a member of IOTC. Marshall Islands and Palau have completed draft NPOAs for sharks.

Pacific Island fishing industry concerns

In the short term a ban on finning will adversely affect vessel and/or crew revenue. In the longer term, there is some concern that finning bans may be only a precursor to banning all bycatch of sharks and encourage those who seek a ban on longline fishing.

Shark finning-related commercial activity in Pacific Island FFA member countries

Fiji and PNG are the countries with the greatest commercial activity related to shark fins. The 2005 declared value of shark fins exported from PNG was US\$1.33 million. An estimate of the overall value of the shark fin market in Fiji is about US\$29 million. FAO statistics rank New Zealand 9th in the world in shark product exporting countries, at about the same level as the U.S.

Trends in shark fin demand and utilization

Demand will continue to rise alongside China's economic development, unless the popularity of shark fin soup falls. In the absence of controls placed on fishing, it is likely that more targeted shark fisheries will develop. It may be that abundant and fecund blue shark (*Prionace glauca*) populations are able to sustain current fishing pressure, but the resilience of other species is unknown.

Estimates of finning rates and volumes in Pacific Island longline fisheries

Using observer data from Pacific Island countries held at SPC, it is estimated that in the tropical shallow longline fishery about 11 sharks are finned for every tonne of tuna caught; about 3.5 sharks are finned per tonne of tuna in the tropical deep longline fishery, and 4 sharks per tonne of tuna caught in the tropical albacore fishery.

Using assumptions on dressed shark weights for species most commonly caught in the Pacific Island longline fisheries, it is estimated that these rates result in 25 kg of (wet) shark fin valued at \$600 per tonne of tuna in the tropical shallow longline fishery, 8 kg of fins worth \$200 in the tropical deep longline fishery, and 9 kg of fins worth \$225 in the tropical albacore longline fishery.

Potential consequences for the Pacific Island fishing industry of a shark finning ban

It is estimated that the financial losses to domestic PIC fleets from the inability to fin sharks would be on the order of \$8.2 to \$9.6 million. This represents about 6 to 7 percent of the total \$137 million value of the longline catch by FFA Pacific Island member countries in 2005.

Other potential consequences could include:

- Increased value of fin portion of directed shark fisheries, and a potential switch of vessels in the tuna fishery to

Potential consequences for Pacific Island fisheries management of a shark finning ban

- targeting sharks if allowed by authorities
- Schemes to collect fins from tuna targeting vessels at sea to bypass controls placed on finning
 - Reduced use of ports by foreign transshipping longline vessels which would not want to be scrutinized by authorities enforcing a ban.

If a ban on shark finning was adopted by the WCPFC that mirrored language in the other three RFMOs, WCPFC members could be required to do the following:

1. Report all data for catches of sharks by the flag state, likely to the Scientific Committee.
2. Take necessary measures to require that their fishermen fully utilize their entire catches of sharks.
3. Require vessels to have onboard fins that total no more than a percentage (currently 5 percent) of the weight of sharks onboard.
4. Take the necessary measures to ensure compliance with the (5) percent ratio through certification, monitoring by an observer, or other appropriate measures. This would not be necessary if members required fins and carcasses to be offloaded together at the point of first landing.
5. Encourage the release of live sharks, especially juveniles, to the extent possible, that are caught incidentally and are not used for food and/or subsistence.
6. Where possible, undertake research to identify shark nursery areas.

Potential consequences of not implementing a shark finning ban

An increase in the pressure on FFA members and continued pressure on WCPFC as a whole can be expected from ENGOs that desire a ban on shark finning.

The U.S. will likely rely on both formal and informal diplomatic efforts to convince FFA member countries to adopt a ban. The U.S. Shark fin Prohibition Act requires that the U.S. government “seek agreements calling for an international ban on shark-finning and other fishing practices adversely affecting sharks... through the appropriate regional fishery management bodies”.

Protracted discussions could see the emergence of regional or worldwide efforts to boycott fisheries that are perceived to be not acting responsibly by continuing to allow shark finning. If such boycotts eventuate, it is more likely to come from ENGO sources than through government trade sanctions.

Conclusions

Understandably, with many other issues to contend with, there has not been much attention paid to shark finning by fisheries administrators in the Pacific Islands. They will have to address this issue at some point, as a shark finning ban has already been adopted by other RFMOs and is now on the agenda of WCPFC.

The impetus for adoption of a shark finning ban by WCPFC will continue, with ENGOs and the U.S. providing most of the pressure to do so within the WCPFC context.

The three RFMOs have not taken identical paths to adoption of shark conservation measures, with the ICCAT example being the most deliberate. The ICCAT case may offer some guidance to FFA members uncomfortable with enacting a ban now and accepting the management tasks required.

The FFA Pacific Island member countries that would be most adversely affected by a ban on shark finning are Fiji and Papua New Guinea, with the financial impact being the greatest in the former.

The foregone revenue from shark finning to domestic fleets in these two countries, while relatively small in comparison to the overall value of the catch, will place additional financial hardships on vessel owners and operators already concerned with increasing costs of operation, including higher fuel and air freight prices.

INTRODUCTION

Background to the Study

The subjects of sharks and shark finning have been on the fisheries management agenda in Pacific Island countries for a relatively short period. The activities leading up to and subsequent adoption of the Food and Agriculture Organization's Code of Conduct for Responsible Fisheries (1995) and International Plan of Action-Sharks (2000) have been two of the more visible activities that have brought the subject to the fore in recent years.

Beginning in late 2005, discussions were held during meetings of the Western and Central Pacific Fisheries Commission (WCPFC) on the possibility of the Commission adopting a statement that would address shark conservation and include shark finning¹. The U.S., then and now not yet a member of WCPFC, circulated a document identical or similar to one that they had strongly supported in the Inter American Tropical Tuna Commission and which that organization had adopted the previous June.

At the last meeting of the WCPFC Commission in late 2005, it was decided that due to the substantial work required before considering action on shark conservation, including shark finning, the matter would be deferred until the upcoming third regular session of the Commission.

FFA determined that the decision taken to defer provided the opportunity to undertake a detailed study of the issues associated with shark finning. This would enable further discussion among FFA members and an examination of the potential consequences for member countries adopting or rejecting a shark finning ban, should such an action be proposed.

As a result, FFA hired a consultant to undertake what was essentially a desk study addressing shark finning in the Pacific Islands. The objectives of the study were to (1) determine to the degree possible the current situation with regards to shark finning in commercial tuna fisheries in Pacific Island countries, and (2) examine the implications of the possible implementation or rejection of a ban on shark finning by the WCPFC. This report is the result of that study.

Purposes of the Study

The purposes of this study as described in the consultant's terms of reference are to provide advice to FFA Members on:

- a) Shark finning practices in the WCPO, including quantification of the removal of shark fins and the discarding of carcasses, and the increased incentive to exploit shark species as a result of the expansion of shark fin markets;
- b) The potential impacts on FFA Members of implementing measures that prevent the removal of shark fins where carcasses are dumped;
- c) The potential impacts on FFA Members of not implementing measures that prevent the removal of shark fins where carcasses are dumped; and

¹ The WCPFC Convention applies to shark species listed as highly migratory in Annex 1 of the United Nations Convention on the Law of the Sea.

- d) The applicability of individual FFA Member county NPOA-Sharks to the issue of the removal of shark fins where the carcass is dumped.

Methodology

As noted, this report is the result of what was primarily a desk study. Travel was undertaken to Manila from 4-8 August, 2006 to present the project to FFA representatives gathered to attend the Western and Central Pacific Fisheries Commission's Scientific Committee meeting. The trip afforded an opportunity and to meet with FFA country representatives to elicit available shark finning-related information. A brief side-trip was also taken to Palau from 9-12 August to interview government officials, dive tour operators, ENGOs and longline fishing industry representatives. Palau was chosen as an important venue for research because of its stringent ban on shark finning and possession of sharks by foreign fishing vessels within its Exclusive Economic Zone.

Organization of the Report

The report is divided into two main sections: a background section that provides information useful to further understanding of the use and market for shark fins, and an explanation of how market demand applies to PIC fisheries.

The second section addresses the implications for PICs of a shark finning ban. International legislative responses to the shark finning issue are reviewed, followed by the approach taken by RFMOs.

The second section also describes current PIC management approaches to sharks and shark finning, as well as setting out the concerns of some operators in PIC domestic fleets.

Within section two, potential consequences for PICs in implementing a shark finning ban by the WPFC are presented. The first part describes possible impacts, including financial impacts, on the domestic longline fishing industry. The second describes the consequential actions from a finning ban that might be required of PIC fisheries management.

The potential consequences for PICs of not implementing a shark finning ban are then analyzed. A final section draws some conclusions from the information presented.

Terminology and Abbreviation Usage

A list explaining the use of acronyms and abbreviations appears at the beginning of this report. The use of the term shark finning ban rather than shark finning measure throughout the report is intentional, because measure might be seen to be one of a hierarchy of terms applying to binding or non-binding agreements by RFMOs.

All values quoted in dollars are in U.S. dollars unless otherwise specified. Quantities expressed in tonnes are metric tonnes. Use of the term "Pacific Island countries" or PICs refers to Pacific Island FFA member countries except when stated otherwise.

Acknowledgements

In spite of the fact that the subject of shark finning can be somewhat of a sensitive issue in some PICs, the consultant was accorded cooperation by those government fisheries officials, vessel operators and industry representatives contacted in person and by telephone. Representatives of ENGOs and the dive tour industry in Palau were open and articulate in explaining the reasons for their concerns over shark fishing. Thanks are due to all those contacted, in particular Michael Batty of FFA, Nannette Malsol of Palau's Bureau of Marine Resources, Peter Ward from the Australian Bureau of Rural Sciences, and Matthew Hooper of the New Zealand Ministry of Fisheries.

PART 1 BACKGROUND

1 *The Basis for Shark Fin Demand in Commerce*

Shark fins have been described as one of the most expensive fish products in the world (Vannuccini 1999). They serve but one culinary purpose: the source of the primary ingredient in shark fin soup, a delicacy that is consumed by Chinese and east Asian communities, primarily in east Asia and but also worldwide².

Chinese references point to records of the consumption of shark fin soup in China as far back as the Sung dynasty, 960-1279. By the 14th century shark fin soup was established as a traditional component of formal banquets (Clarke 2003). Literature on the subject generally ascribes the historical use of shark fin soup (along with other specialties such as birds' nest soup) to the quest by emperors and noblemen to locate exotic and health promoting food. One interpretation of the high value placed on the product comes from the fact that only a small quantity of the main ingredient can be obtained from a large fish. As such, the fins were said to be noble and precious, qualities that made them fit for the tables of emperors (Rose 1996). Over time, consumption of shark fin soup evolved to where it was served in China mainly at dinner parties, weddings or banquets to express the host's respect for his guests. According to Vannuccini (1999) the benefits of shark fin as documented by old Chinese medical books include rejuvenation, appetite enhancement, nourishing to blood, beneficial to vital energy, kidneys, lungs, bones and many other parts of the body.

Shark fin soup is not made from the entire fin, but rather uses the *ceratotrichia* (usually referred to in English as fin needles or fin noodles). The needles consist of the slender golden colored fibers that lie between the cartilage within the fins found in many (but not all) species of shark. These fin needles run in parallel and radial to the fin base, supporting the web of cartilage within the fin itself.

The southern provinces of mainland China, primarily Guangdong and Fujian, are said to have been the centers of shark fin culinary development where the technique was developed of removing the fibers to produce "*chi pian*" or fin cakes used in the production of the soup (Clarke 2003). Since the needles do not have any flavor themselves, chicken stock or other ingredients are added to impart flavor to the soup.

The needles are separated from the cartilage during a laborious process that involves cleaning and skinning of raw fins, boiling, removing fin ray membranes, bleaching, and drying in multiple and differentiating steps which produce a variety of final product forms. The most important traits of *ceratotrichia* in valuing shark fin from different species are their thickness and length. Shark fins that yield long, thick fin needles are those that command the highest prices (McCoy and Ishihara 1999).

During the Maoist era in China during the twentieth century, the consumption of shark fin soup was limited as officials frowned upon its use and viewed it as an elitist food. Beginning with China's reform policies instituted in 1986, changes took place removed

² The Chinese communities in such places as Thailand and in North America (primarily New York, San Francisco and Vancouver) also represent considerable (if unquantified) groups of consumers that provide markets for shark fin outside of Asia.

this stigma and consequently increased the volume and manner of consumption that have affected trade in shark fin that has continued until the present.

The reforms in China also allowed the establishment of shark fin processing operations in southern China, making it possible for Hong Kong to both avail itself of cheaper labor for fin processing and open up new markets, particularly in the booming southern China region. The Hong Kong economy also greatly expanded during this period resulting in a greater popularization of shark fin soup. One author described the Hong Kong situation in the mid-1990s:

Whereas shark fin used to be a high-priced delicacy found in only expensive shark fin restaurants, there are now many smaller restaurants specializing in shark fin soup, and importing and processing their own shark fins. This popularization of shark fin has made shark fin soup more accessible as it is now possible to eat shark fin soup at a more reasonable price and during more casual occasions; in the past, shark fin was consumed by those of lower economic status only during formal banquets (Parry-Jones 1996)³.

Since the 1990s, continued economic expansion in mainland China has resulted in a larger middle class that has also increased the demand for shark fin. This demand has been transmitted to existing fisheries by traditional fin dealers and others. Attractive prices have in turn fueled increases in the targeting of sharks, primarily for their fins. In many cases there is a discarding of the carcass at sea and retention of the fins only, a practice referred to as “shark finning”.

2 Shark Fin Demand and Commercial Fishing in the WCPO

At least one author well-versed in the current shark fin trade has stated that it is likely the volume of whole sharks landed by fishing vessels around the world once provided sufficient fins to supply the fin markets of east Asia and east Asian communities worldwide (Watts 2003).

That whole sharks landed by fishing vessels once provided sufficient fins to supply key markets is debatable, at least in the last 40 to 50 years in an era of industrial longlining in the WCPO. Shark fins have been collected through finning on tuna longline vessels in the WCPO for many years. Up until recently in many Pacific Island ports it was not uncommon to see drying shark fins hanging from the rigging of Asian longliners that did not retain shark carcasses and had obtained the fins through finning⁴.

Up until the last 10 years or so the income from shark fins obtained through finning formed a traditional portion of the crew’s remuneration, often characterized as a bonus or spending money for periods ashore. Increased demand resulting in higher fin prices have no doubt encouraged the finning of sharks that might otherwise have been struck off as either a nuisance or danger to fishermen onboard. The high fin prices have also

³ It should be recognized that there are numerous levels of quality in the ingredients preparation, and presentation of shark fin soup. A bowl of soup can be purchased for as little as \$5 in some restaurants, with various flavorings added. At more exclusive restaurants, the cost (and presumably the quality) could easily be fifteen to twenty times that figure.

⁴ Such fins, while still collected, are often now placed out of sight onboard longliners in port. This may be because of sensitivities towards the issue of longlining, but also because it may invite thievery given their current value.

altered the manner in which revenue is distributed in some fleets, contributing a greater percentage to vessel revenue and less to crew bonuses than in the past.

Fins are typically sold in sets taken from the same shark. The primary fin set consists of the dorsal fin, both pectoral fins, and the lower lobe of the caudal fin. The upper lobe of the caudal is usually not retained, because in most species it does not contain the *ceratotrichia* required for the end product. Other, smaller fins can also be retained and are sold at a lower price as 'chips'.

The increase in demand began in the mid-1980s as noted above. It has resulted in many diverse sources of shark fins serving the markets in Hong Kong, Singapore, mainland China and elsewhere. The fisheries supplying these markets are geographically and technologically varied, and can be characterized as:

- fisheries directed at sharks, mostly gillnet or longline fisheries,
- bycatch from other fisheries such as tuna longline, tuna purse seine, and shrimp and groundfish trawling, and
- Artisanal fisheries using relatively unsophisticated fishing gear

For vessels operating in these categories, sharks can be:

- stored onboard whole with fins attached,
- partially processed onboard with head, guts discarded, fins removed and the resultant trunk and fins valuable in commerce retained, or
- discarded at sea with only the fins valuable in commerce retained.

The first category describes the situation that is most likely to occur in small-scale artisanal fisheries, for example small-scale gill net fisheries where the catch is simply taken onboard rolled into the net with which it was captured and dealt with ashore. Except where required by law or regulation, it is usually not the practice to store whole sharks onboard larger vessels such as industrial longliners because too much valuable space in the fish hold is used.

The second category describes what happens to some (but not necessarily all) of the catch by shark targeting and tuna-targeting fleets.

The third category, finning, takes place in tuna-targeting longline and purse seine fisheries due to a combination of two major factors:

- (1) there is increasing demand for shark fins, and
- (2) the economics of catching and transporting fish products (including sharks) often make it impractical/undesirable to retain more than the fins onboard.

The limited storage onboard many tuna-targeting longline vessels makes it uneconomical to retain anything other than the fins from most sharks. Fins are by far the most valuable part of the shark, and low prices or non-existent markets for shark meat discourage further retention.

Even if markets could be found for shark meat, certain biological characteristics make it unlikely that tuna vessels would take the time to properly handle and store sharks caught

by longline. Unlike teleosts, sharks have a large amount of urea in their meat as a result of possessing a more primitive kidney system. When a shark dies, urea is converted to ammonia. Proper handling and storage to preserve good quality meat onboard takes time, and at least for now the returns do not justify the expense for most species. Even on those large, distant-water longline vessels with sufficient storage space, only shortfin mako shark trunks are retained as that is the one species with a market value high enough to justify the freezing, storage, and handling required to bring the catch to market⁵.

Trends in shark fin demand and utilization are important to identify in considering fishery management responses. An author who has studied the shark fin trade extensively in Hong Kong and elsewhere has been quoted as anticipating the following trends for the shark fin trade:

Consumers: demand will continue to rise alongside China's economic development, unless the popularity of shark fin soup falls

Producers: in the absence of controls placed on fishing, it is likely that more targeted shark fisheries will develop

Species: it may be that abundant and fecund blue shark (*Prionace glauca*) populations are able to sustain current fishing pressure, but the resilience of other species is unknown (CITES 2006)

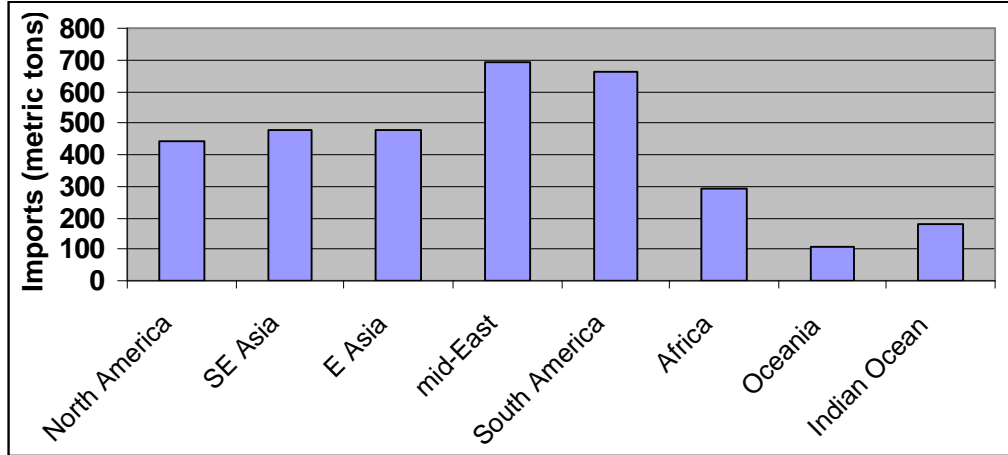
2.1 Relative Importance of Shark Fins from Pacific Island Countries

Once fins from sharks enter commerce, government statistics and available data do not differentiate between species, even though biological differences between species as well as morphometric differences play a large role in determining fin price.

Overall, it is believed that the total contribution of shark fins from the Pacific Islands has been marginally significant in world trade, and much smaller than that from other geographic regions. One source estimated the volume of dried shark fins from "Oceania" to Hong Kong at about 105 metric tons in the first 11 months of 1998 (Figure 1), or about 3.4% of total Hong Kong imports for that period (McCoy and Ishihara, 1999).

⁵ The practice (sometimes referred to as high grading) of discarding a portion of the catch for economic reasons is also sometimes employed with the target species; for example when smaller tuna retained during the early stages of a trip are discarded to make room for larger or better quality fish later.

**Figure 1 Hong Kong Imports of Dried Shark Fin
By Geographic Region, Jan. – Nov. 1998**



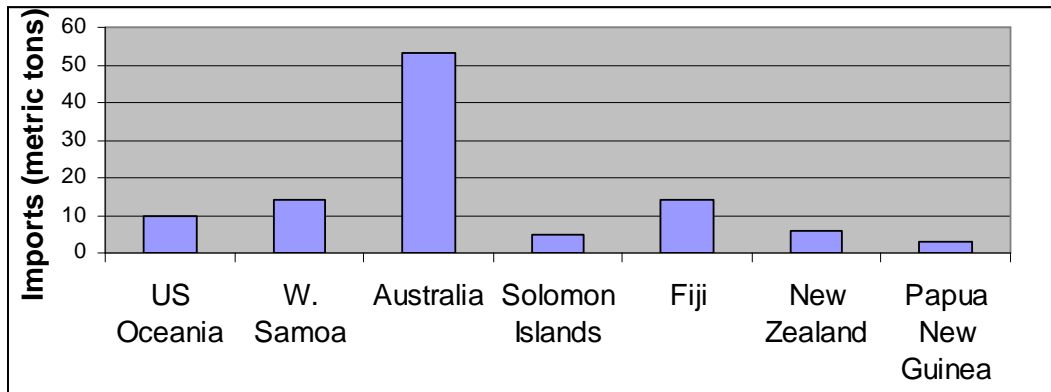
Source: Hong Kong Agriculture and Fisheries Department, unpublished data
Cited in McCoy and Ishihara (1999)

Hong Kong is the most important market in world trade for dried fins but is by no means the only one. Singapore is also important because of its geographic location and large ethnic Chinese population.

Taiwan is a significant market for wet (i.e. frozen) fins produced by local and distant water Taiwanese fishing fleets.

Of the seven countries contained in the Oceania category in Hong Kong statistics, Australia was by far the largest source of imports during the period with 53 metric tons or 50% of the total. Figure 2 depicts the relative volumes from the various countries comprising the Oceania category in Hong Kong statistics.

**Figure 2. Hong Kong Imports of Dried Shark Fin from Oceania,
January–November 1998**



Units: metric tons; Figures are rounded to nearest metric ton
Source: Hong Kong Agriculture and Fisheries Department, unpublished data, cited in McCoy and Ishihara (1999)

Figure 2 represents only dried shark fins, and not “wet” or frozen fins usually landed by Taiwanese or domestic longliners in the Pacific Islands. Pacific Island countries that may be significant sources of wet fins include Fiji, PNG, Marshall Islands, and (in the past) Solomon Islands. These wet fins may be exported frozen to Taiwan as is done by the shark targeting fleet in PNG, or partially processed onshore as might be the case in Fiji, and sent to markets including Hong Kong.

Recent estimates of world trade in shark fins in 2000 put the figure of the trade worldwide at 11,602 tonnes, and Hong Kong’s portion of that trade at around 6,800 tonnes or 59% (Clarke et al. 2006)⁶.

3 The Shark Finning Issue Worldwide

With little scientific data on the levels of shark finning worldwide, most of the information on shark finning available to the general public in developed countries is contained in popular literature, much of which is used to drive efforts to ban finning. In much of this literature it is often difficult to separate the issue of finning from that of shark management in general.

Information and awareness campaigns, usually conducted by well-funded environmental groups, often fail to make the distinction between shark conservation in general, the management of sustainable shark fisheries, and the specific finning issue. Finning can be presented in such a way as to taint all rational fisheries management arguments concerning sharks, and this can cause problems for fisheries managers.

One way to describe finning in an international tuna management context is to view the practice as:

increasing overall shark mortality by expanding the opportunities to retain only the most valuable portions of the animal in situations where it might otherwise be avoided or struck off the line before landing.

In the press and elsewhere the practice of finning is often linked to wastage and described as a wasteful practice⁷. Minimizing waste in fisheries is a prominent feature of the FAO Code of Conduct for Responsible Fisheries developed in 1995, and the concept has been adopted as relevant in the subsequent FAO International Plan of Action for Sharks (IPOA).

A second, often more extreme linkage is made by some ENGOs between shark finning and animal cruelty. Examples of such linkage can be found in the statements on the worldwide websites of various shark and animal welfare groups: “the brutal business of shark finning” (Sea Shepherd Society); “horrible death for a magnificent creature” (Shark Friends); “wasteful and often cruel practice (Shark Trust) and so on. This connection can also find its way into legislative interpretations. In New Zealand, for example, it is not

⁶ This figure represents fins in a dried state, and is based on national customs statistics and adjusted for observed underreporting for Mainland China, Hong Kong, Singapore, Taiwan and Japan relative to Hong Kong as an importer.

⁷ It is seldom noted in the popular literature and information concerning finning that waste in fisheries originates as an economic issue, and finding economic uses for discards doesn’t necessarily solve the management problem. In fact, it can exacerbate it.

illegal to fin dead sharks under current fishery regulations but it is illegal to fin a live shark under New Zealand's Animal Welfare Act.

The countries in Asia that serve as markets for shark fin have recently been the targets of publicity campaigns by ENGOs in Asia which are focused on educating the consumer and campaigning against the consumption of shark fin soup. These continuing efforts are gaining momentum in several of the shark fin consuming countries, notably Singapore and China (Hong Kong).

WildAid, one of the more prolific and financially well-endowed groups engaged in anti-shark fin efforts, has enlisted the assistance of movie stars such as Jackie Chan in Hong Kong to campaign against the consumption of shark fin soup. Most recently, WildAid introduced a Chinese basketball star in the U.S., Yao Ming, as well as a Chinese pop singer as their spokespersons in China campaigning against the consumption of shark fin soup⁸.

It is the position of WildAid and some others engaged in efforts to reduce or eliminate consumption of shark fin that the key to success is self-restraint practiced by consumers. These groups believe that finning bans will not work and that the way to stop finning and reduce shark mortality in general is to approach it from the demand, as opposed to supply, side.

There has been some success in these campaigns in Asia. In June, 2006 Hong Kong Disneyland removed shark fin soup from its menus at the theme park. A few months later, Hong Kong University decided to discontinue serving shark fin soup at official functions and banquets sponsored by the University.

One of the reasons, given in private and usually not in public pronouncements, by groups and individuals engaged in the campaigns to reduce demand is that unless consumer attitudes are changed and demand is eliminated or significantly weakened, finning bans may only initially reduce supply. This will result in the commodity becoming even more valuable, expanding illegal fisheries and attracting criminal activity⁹.

4 Impetus for Management Action

An important point for fisheries managers in the Pacific Islands to consider is that unlike the controls placed on tuna fishing in the WCPO¹⁰, the impetus for banning shark finning in the WCPO and elsewhere has rarely come from fisheries management personnel. A review of the brief history of anti-shark finning campaigns and a perusal of the existing popular literature and information disseminated by those groups engaged in anti-shark finning campaigns reveals an approach that should not be ignored.

There has been a close working relationship and linkage between some shark specialists and others engaged in shark research with conservation and environmental

⁸ While this activity was given publicity in many western countries, it was more or less ignored in mainland China, and Yao Ming was criticized in China by those who did comment as being insensitive to his own culture.

⁹ It is recognized that some criminal elements are already present in shark fin commerce, usually lower in the supply chain where there can be strong competition for fins from fleets based in some locations. Murders or attempted murders reportedly linked to shark fin commerce have been reported in South Africa, Honolulu, Fiji, and San Francisco in recent years.

¹⁰ Examples are the early limits on purse seining by the Nauru Group and current FFA approaches to effort limitation, as well as the negotiation of the UN Fish Stocks Agreement and the WCPFC Convention itself.

non-governmental organizations (ENGOS). Both groups have a desire to ban finning and better manage and control shark fishing, with some wanting to curtail such fishing all together. These partnerships, in the case of shark finning, tend to bypass fisheries management agencies and rely on public sentiment to galvanize lawmakers to adopt legislation banning shark finning.

An example of this strategy is the marshalling of public anti-finning sentiment during the late 1990s that culminated in banning of shark finning in Hawaii and elsewhere throughout the US where it was not already prohibited. Whereas ENGOS and activist shark specialists joined forces and succeeded in getting shark finning outlawed on all U.S. fleets and within the U.S. EEZ by 2001, fishery managers were generally reactive to the issue, rather than pro-active in many cases.

In the U.S. case, pressure from well-financed ENGOS was exerted in the media, through lobbyists and environmental groups in Washington DC and elsewhere that resulted in the passage of a very strong law, the U.S. Shark Finning Prohibition Act. This law, among other provisions, requires the U.S. National Marine Fisheries Service to initiate discussion with other nations to develop international agreements on shark finning and shark catch data collection (NOAA 2005).

These two potent forces, shark specialists and ENGOS, can apply pressure directly to governments in the developed world which then in turn react nationally (as in the U.S. case), and internationally. On the international level, efforts have culminated at the Food and Agriculture Organisation of the United Nations (FAO) with its adoption in 1999 of an IPOA to serve as a guide to individual countries in the formulation of National Plans of Action for sharks (NPOA). The IPOA directs NPOAs to implement the relevant sections of the FAO Code of Conduct for Responsible Fisheries and “minimize waste and discards from shark catches”, and suggests doing so by “requiring the retention of sharks from which fins are removed” (FAO 2006).

Further efforts by ENGOS are manifested in attempts to get governments to agree to place certain shark species on lists of protected species covered by the Convention on International Trade in Endangered Species (CITES) and elsewhere.

A notable effort that further illustrates the ability of local ENGOS to sway public policy is the situation in Palau. There, efforts by ENGOS and the Palau-based local dive tourist industry resulted in passage of the most stringent anti-shark finning and anti-shark fishing laws in the Pacific (and perhaps anywhere). Figure 3 shows a billboard posted at the wharf where longline vessels offload. The billboard was required to be posted by the fishing company as one the settlement terms resulting from a court case against one of the company’s vessels for possession sharks. The company was required to post a similar billboard in the Bahasa Indonesia language.

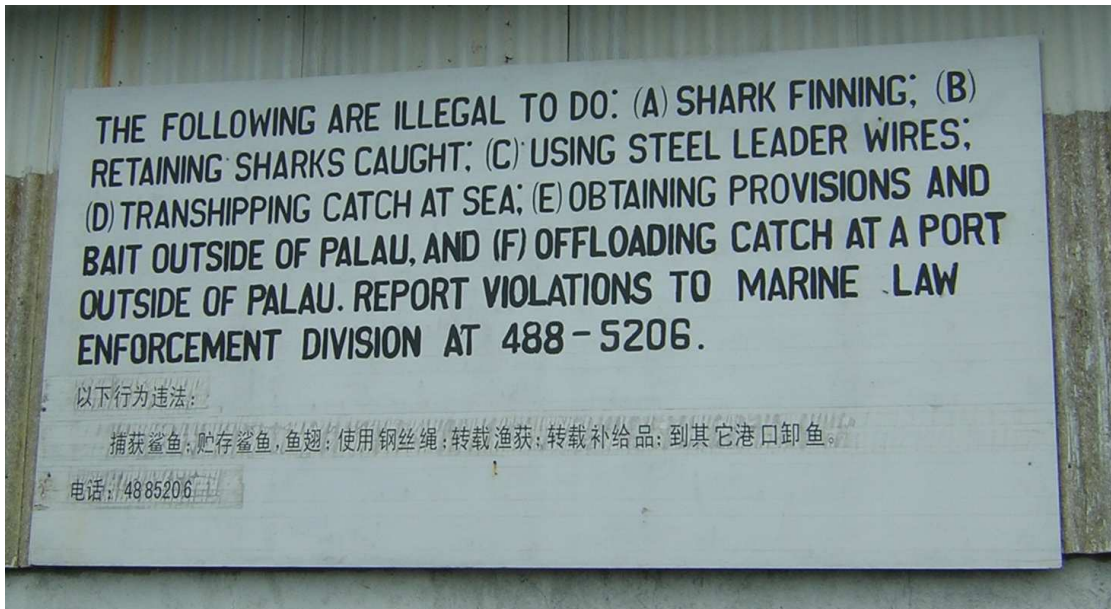
ENGOS in Palau continued their activities after the passage of these laws with much broader goals in mind. One created a “Palau Shark Sanctuary Fund” with the stated objective of achieving a declaration by Palau that would establish all waters within Palau’s EEZ as a World Shark Sanctuary. This ENGO and others promote Palau Shark Week for dive tourists, while another conducts “Project S.A.V.E.” (Shark Awareness Visitor Education).

The acceptance by governments of efforts by ENGOS to globally ban the practice of shark finning has not been universal, however. Many countries continue to allow the practice, and even where nominally banned through membership in an RFMO, government policy tends to reflect more deliberate approaches. For example, a statement by Japan to a reservation on a shark finning resolution passed by the

International Union for the Conservation of Nature at the 2004 World Conservation Congress in Bangkok, Thailand. At that meeting, as part of their objection the Japanese Ministry of Foreign Affairs provided the following statement for the record:

The key point of (the) shark conservation issue is that fishery activities that only target shark fins are deteriorating shark resources. We have to recognize that a ban on finning without identifying species and areas with a real problem will never lead to a real conservation and management of shark resources.

Figure 3 Billboard at Malakal Fish Wharf



PART 2 SHARK FINNING BAN IMPLICATIONS FOR FFA PACIFIC ISLAND MEMBERS

Sharks are acknowledged to present formidable obstacles to fisheries managers, either in directed fisheries or as bycatch. As noted by FAO (2006), sharks are known to have a close stock-recruitment relationship, long recovery times in response to overfishing and complex spatial structures. Conservation and management of sharks is also impaired by the lack of accurate data on catch, effort, discards, and trade data, as well as limited information on the biological parameters of many species and their identification.

For a variety of reasons, sharks have not received much attention from most Pacific Island fishery managers when focusing on industrial tuna fisheries. The value of shark landings by tuna-targeting vessels has historically been far below that of target tuna species and attention has naturally been focused on the target catch which, for many PICs, is directly linked to levels of access fees paid by distant water fishing nations (DWFNs). When faced with a multitude of priorities relating to the target tuna catch, it is not surprising that often understaffed fisheries departments have not focused extensively on the collection of catch, bycatch, discard and landing data for sharks, all of which are necessary to enable informed management decisions. There are exceptions, with Papua New Guinea standing out as one FFA member country that has a shark management plan in place with a total allowable catch. PNG compiles data on exports of sharks and shark fins by a directed fishery but does not apply the same scrutiny to domestic longliners targeting tuna.

Likewise, the subject of shark finning has not been the focus of most fisheries departments in the Pacific Island region. It is known that several countries, Solomon Islands being one, licenses shark fin exporters. Others however, such as the Marshall Islands and FSM, do not require export data to be declared and essentially have no hard data on the value or volume of shark fins exported.

5 International Legislative Responses to the Finning Issue

The mainly ENGO-led campaign against shark finning over the last ten years or so has resulted in responses from national governments, RFMOs and other management bodies that have been nothing short of remarkable.

Legislation or regulatory measures to ban shark finning has now been adopted by the U.S. and Australia, as well as by Brazil, Costa Rica, Ecuador, and the European Union. In the Pacific Islands region, one of the more extreme sets of measures taken by any country has been that taken by Palau. In September, 2003, the President of Palau signed a comprehensive law passed by that country's legislature that prohibits foreign fishing vessels in Palau's waters from fishing for sharks, or possessing onboard sharks or any parts of sharks, including fins. The law also bans the use of wire leaders (traces) in longline gear.

As described above, the impetus for Palau's legislative stance on the issue of shark finning (and on foreign vessels capturing or possessing sharks) stems primarily from the ENGOs and private sector promoting the importance of tourism, including dive tourism, in the Palau economy. Although pelagic sharks caught incidentally to longline fishing in

the Palau Exclusive Economic Zone (EEZ) are usually not those viewed by dive tourists, the country's strong tourism sector wants to project the image of the country as containing a pristine oceanic environment. Publicity given Palau's anti-shark fishing and anti-shark finning laws, as well as a public burning of confiscated fins in 2004 has helped promote eco-tourism in the country, according to dive tour operators interviewed in August, 2006 as part of the research for this study.

6 RFMO Approaches to Control of Shark Finning in Tuna Fisheries

In the current management environment surrounding implementation of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC Convention), the approaches taken to shark finning by other regional fisheries management organizations (RFMOs) are of major interest to FFA member countries.

There are three other RFMOs involved with the management of tuna fisheries that have recently addressed the issue of shark conservation, including the subject of finning: the Inter-American Tropical Tuna Commission (IATTC), the International Commission for the Conservation of Atlantic Tunas (ICCAT), and the Indian Ocean Tuna Commission (IOTC). Each of these bodies has adopted either a resolution (IATTC and IOTC) or recommendation (ICCAT) on the conservation of sharks that includes clauses aimed at curtailing and eliminating the practice of shark finning¹¹.

A list of member countries and cooperating non-members of these three organizations is shown in Appendix 1. The three RFMOs adopting controls over shark finning represent a total of 58 countries (including the EU as one member). Of these, 13 are either current members or observers of the WCPFC Commission¹².

It is perhaps not surprising that given some of the overlapping membership in the three organizations which have already addressed the issue and the fact that each has as its mandate the management of tuna fisheries, the adopted resolutions and recommendations are very similar in their wording. Appendix 2 provides a comparison between the relevant language contained in the documents addressing shark conservation that have been adopted by the RFMOs.

6.1 Significant Issues in the Existing RFMO Approach

6.1.1 Steps Taken Prior to Adoption of Controls

In considering possible courses of action for FFA member countries in the WCPFC on the subject of shark conservation and shark finning, it is useful to review the steps taken by one RFMO prior to adoption of controls over shark finning.

¹¹ A fourth RFMO that does not manage tuna but which has adopted control over shark finning in 2004 is the Northwest Atlantic Fisheries Organisation (NAFO).

¹² Australia, Canada, China, Chinese Taipei, Cook Islands, European Community, France, Indonesia, Japan, Korea, Philippines, United States, and Vanuatu.

ICCAT was the first of the three bodies to act on the subject of shark conservation, adopting its recommendation on the final day of its meeting in November, 2004. The IATTC resolution¹³ was subsequently adopted in June, 2005. The IOTC resolution was likewise adopted in 2005, but the exact date is not clear.

The adoption of the ICCAT binding recommendation concerning the conservation of sharks was preceded by at least four years of discussion on the subject of sharks, and the adoption of earlier and related resolutions¹⁴.

- In 2000, the ICCAT Standing Committee on Research and Statistics recommended ICCAT take the lead in conducting stock assessments for 3 species of shark
- In 2001, ICCAT adopted a non-binding resolution on sharks. This included measures for improved data collection for pelagic sharks, and directed that stock assessments for shortfin mako and blue sharks be conducted in 2004. Other aspects provided for the release of incidentally caught live sharks and the minimization of waste and discards (both of which appear in the 2004 recommendation).
- In 2003, a further resolution was adopted that required ICCAT parties to (1) provide the Bycatch Working Group with information on shark catches, effort by gear type, landings, and trade of shark products, and (2) fully implement an NPOA in accordance with the FAO IPOA for sharks.
- In June, 2004 stock assessments were conducted by the Subcommittee on Bycatch for two species of sharks.
- The recommendation was then formulated and adopted in November, 2004 (NOAA 2005)

It does not appear that the other two RFMOs, IATTC and IOTC, have taken the more deliberate approach as did ICCAT. There may have been general agreement in the former two organizations that since key parties agreed to the approach in ICCAT, they would not object to similar wording in the RFMOs that followed ICCAT's lead.

6.1.2 Analysis of Certain Provisions Contained in Resolutions and Recommendations

The adopted resolutions and recommendation of the three RFMOs contain certain provisions that should be examined carefully.

Research directives: It is believed that as shown above, only ICCAT preceded the adoption of its recommendation with steps intended to better define the conservation and management problems addressed. The IATTC resolution directs the Commission to provide preliminary advice on stock status of key shark species and propose a research plan for a comprehensive assessment of these stocks. The IOTC resolution directs its Scientific Committee (in collaboration with the Working Party on Bycatch) to do likewise.

¹³ In IATTC, resolutions are binding, recommendations are non-binding. Both are approved by consensus (Meltzer 2005a).

¹⁴ In ICCAT resolutions are non-binding. Binding Recommendations are adopted by a simple majority vote with a quorum of two-thirds of Contracting Parties, and enter into force 6 months later (Meltzer 2005b).

The “5 percent” debate: Each RFMO requires that fins onboard a vessel should not total more than 5 percent of the weight of sharks onboard, up to the point of first landing. This number, 5 percent, has and continues to be a subject of debate within and outside the RFMOs concerned¹⁵. The 5 percent limit has its origins in the U.S. management of its own longline fisheries on the East Coast of the United States. In 1993 the use of 5 percent as a measure of the weight of the fins compared to dressed carcasses onboard was introduced in a Fisheries Management Plan on the basis of a very small sample of just one species, sandbar shark, *Carcharhinus plumbeus* (Cortes and Neer 2005)¹⁶.

Some fishing industry representatives have argued that the number should be higher than 5 percent on the basis of the species, sizes and manner of dressing sharks. In the U.S. this argument is made for directed shark fisheries, while in other countries it is made for sharks that are captured as bycatch in tuna fisheries. Concerns of some industry representatives of having to meet the 5 percent figure as a measure include (1) the potential for significant financial loss and (2) exposure to prosecution if 5 percent is not an accurate depiction of fin-to-body weight representative of the catch in a particular fishery.

ENGOs are concerned that increasing the number above 5 percent will enable more sharks to be killed for their fins, and some ENGOs have argued that the number should actually be lowered. It is noteworthy that each of the RFMO resolutions and recommendation contains a clause that this aspect should be reviewed, during 2005 in the case of IOTC and 2006 for IATTC and ICCAT.

Interestingly, there is little information available on the specific situation where carcasses are retained in a frozen condition while fins are dried. In this situation, the weight of fins at 5 percent of the weight of carcasses onboard would represent more sharks than simply those onboard.

The banning of the use of wire traces/leaders: Only the IOTC resolution contains a provision suggesting that wire traces be included in research to make fishing gears more selective. Some vessel captains claim that the use of wire traces is to minimize the loss of large tuna that can cut monofilament leaders when entangled under the gill plate. Conversations with a vessel operator and an SPC Masterfisherman during the research for this study indicate that, while wire traces can increase the numbers of sharks landed by minimizing the times when the trace or leader is severed, some of the newer monofilament lines used as trace material can have a similar effect. It should also be pointed out that hook type is a factor in the retention of sharks on longlines as well. An experiment in the Atlantic using circle hooks to minimize turtle bycatch has had the unintended consequence of increasing shark catch (A. Bolton, pers. comm.).

Reference to NPOA: Only the IATTC resolution makes reference to parties establishing a national plan of action for the conservation and management of shark stocks in accordance with the FAO IPOA¹⁷. Even though the IATTC wording is qualified that

¹⁵ During October, 2006 the EU is considering a Spanish request to increase the amount to 6.5 percent to account for species and sizes of sharks landed, while a coalition of ENGOs, the UK-based Shark Alliance is urging a reduction to 2 percent. Part of the argument has to do with the basis of the measurement, i.e. dressed or whole sharks. According to a press release from the Shark Alliance, the European Parliament rejected the EU Fisheries Committee's recommendation to increase the percentage, but it is now up to the European Commission to determine which percentage is used (Shark Alliance 2006).

¹⁶ According to observer data held at SPC, this shark is only rarely captured in pelagic longline fisheries in the WCPO.

¹⁷ There are 14 Pacific Island countries that are members of FAO: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

parties “should establish...” rather than *shall* establish, the inclusion of such wording appears to raise the NPOA to a higher standard through its presence in the resolution. There are two reasons why such a reference may be inappropriate. First, the IPOA is clearly voluntary (paragraph 10) and, as is stated in the IPOA, is a plan of action. There may be more appropriate ways for members to set out their goals for the management and conservation of sharks and the manner in which they can be achieved. Second, the FAO itself has identified a need to address deficiencies and enhance effectiveness of the plan. A consultation was held in late 2005 to address these concerns and the subject is set to be considered at the 2007 meeting of the Committee on Fisheries (FAO 2006b).

Collection of data on shark catches: Both ICCAT and IOTC are specific that they shall consider appropriate assistance to developing CPCs for the collection of data on *their* shark catches. The IATTC provision says it will consider assistance to developing CPCs for collection of data on shark catches, presumably not just catches of the CPC flag state.

7 Current Pacific Island Management Approaches to Shark Finning and Shark Fishing

Attempts to elicit information on management approaches to shark finning by FFA member countries during the course of this study resulted in a relatively wide range of attitudes, policies, and legal approaches to the subject of shark fishing but few actual prohibitions of shark finning.

Only four of the seventeen FFA member countries prohibit shark finning in their tuna fisheries by either statute or virtue of their membership in one of the three RFMOs that have passed a recommendation or resolution banning the practice:

- Vanuatu is a member or Contracting Party in all three RFMOs that have passed binding recommendations or resolutions banning shark finning.
- Cook Islands is a Cooperating non-Party in IATTC, and also makes it is a license condition of licensed longline vessels that if they catch sharks and wish to keep the shark fins, the carcass must also be retained (NOAA 2005)
- Palau has stringent prohibitions against possession of any sharks or shark parts onboard foreign vessels in their EEZ as has been noted above.
- Australia bans shark finning in all its fisheries (Ward, pers. comm.)

7.1 Relevant Information on Shark-related Fishery Management in FFA Member Countries

The following summarizes additional relevant information on the management of shark fisheries, shark bycatch, and shark finning in FFA member countries.

Australia: Completed a Shark Assessment Report in 2001 and a National Plan of Action, Sharks in 2004. In line with the implementation of the Shark-plan, management measures have been put in place in the longline sector to minimise

shark bycatch, prevent indiscriminate finning and to encourage full utilisation of landed shark catch. Mandatory measures take effect through conditions placed on relevant fishing permits issued by the Australian Fisheries Management Authority (P. Ward, pers. comm.).

Cook Islands: No further information at this time

FSM: The law does not allow the targeting of sharks in fishing operations and fishery administrators accept the use of wire traces or leaders as *prima facie* evidence of such targeting.

Fiji: No further information at this time, although there is one report of a ban on wire traces in the fishery.

Kiribati: No further information at this time

Marshall Islands: A draft NPOA was completed in late 2003 by a consultant funded by FAO.

Nauru: No further information at this time

New Zealand: Manages most shark and ray species with substantial commercial catches within the quota management system based on individual transferable quotas (ITQ). All key shark bycatch species of New Zealand tuna longline fisheries were introduced into the quota management system on 1 October 2004. Strict reporting requirements apply. Key highly migratory shark species have catch limits in place in New Zealand fisheries waters. Catch limits in New Zealand fisheries waters are set at levels to provide only for bycatch of other fisheries. New Zealand commissions research to assess shark populations. The age and growth of key shark bycatch species (blue, mako and porbeagle sharks) has been contracted. This information will assist in determining sustainable catch levels. New Zealand is preparing a National Plan of Action for sharks. This plan will be finalized in 2006. Finning of live sharks in New Zealand fisheries waters is illegal under New Zealand's Animal Welfare Act. New Zealand recognizes that landing only the fins of sharks is wasteful. New Zealand considers that the Quota Management System will provide strong incentives to reduce the practice of only landing the fins of shark bycatch. Catches are being monitored to determine whether this is the case. (M. Hooper, pers. comm.).

Niue: No further information at this time.

Palau: Draft NPOA for sharks completed by a consultant in 2004.

Papua New Guinea: A domestic directed shark fishery exists in Papua New Guinea and has been governed by a shark management plan since 2002 that allows 9 vessels to be licensed with a Total Allowable Catch (TAC) of 2,000 tonnes (Kumoru 2003).

Samoa: No further information at this time

Solomon Islands: No further information at this time

Tokelau: Foreign fishing vessels licensed to fish in the Tokelau EEZ do so under New Zealand requirements. No further information at this time

Tonga: Tonga does not encourage targeting of sharks in longline fisheries. (Sione V. Matoto, pers. comm.)

Tuvalu: No further information at this time.

Vanuatu: No further information at this time.

7.2 Pacific Island Fishing Industry Concerns on Shark Finning

The concerns of some in the Pacific Islands tuna longline industry can be described as both short and long term¹⁸. An immediate concern of some vessel operators in the two FFA countries with the largest domestic fleets (Fiji and Papua New Guinea) regarding potential banning of shark finning is the loss of revenue from shark fins which has traditionally gone to either the crew or the vessel owner.

Vessel operators who allow crew to retain income from shark fins likely set pay scales for their crew on the basis of this additional income, and loss of this source would have financial implications for those operators. One operator in Fiji estimated that such income could represent up to 30 percent of crew salaries when significant shark catches are experienced.

These figures could vary considerably between ports in the Pacific Islands depending on the circumstances at each port. Ex-vessel prices are often highest where there are larger volumes produced by more vessels based or calling at a particular port (such as Suva or Levuka). These ports usually have multiple buyers creating competition that can drive up prices. There may also be some intermediate processing being done at ports with larger volumes that change the economics for traders and may allow higher prices to be paid. Price is also partly determined by onward transportation costs. Those ports with expensive freight connections to Hong Kong, Singapore and elsewhere in Asia could offer lower prices than ports with good freight services to those areas¹⁹.

Loss of this income to crew would require vessel operators to adjust wages upwards, something that may not be practical in the current economic environment where fuel and air freight prices have risen and are not expected to decline.

Vessel operators who use the revenue to offset vessel expenses would also be squeezed, as overall catch revenue would be reduced. Either way, it is felt by those queried that the loss of such revenue will exacerbate an already tenuous financial situation in the industry.

In Palau, some shore-based operators that cater to foreign longliners offloading there are concerned that the current stringent laws relating to possession of sharks and shark body parts discourages vessels from offloading or being based in the country. This in turn has a negative effect on business and exports. These operators suggest that a relaxation of the current law to allow something like 5 percent of fins equal to sharks onboard would be a benefit to the economy of Palau.

This sentiment was echoed by two tuna longline vessel operators contacted in PNG and Fiji. According to these operators, measures to reduce shark catches would be welcomed by the industry. At present the lack of controls over shark finning can result in

¹⁸ Information was obtained by telephone interviews with vessel operators in Fiji and Papua New Guinea, as well as informal queries made on behalf of this study during an FFA/SPC fishing industry workshop held in Fiji during September, 2006.

¹⁹ An additional factor that may contribute to ex-vessel prices in some ports that are higher than might be expected given world market conditions is that some traders reportedly use the export of shark fins as a means to repatriate capital and avoid currency controls. In this situation they may be willing to out-bid competitors for the purchase of shark fins if they perceive an opportunity for benefits other than from the shark fins themselves.

crews targeting sharks for their own financial benefit, even when the revenue is supposed to be applied to vessel expenses. They are faced, however, with the problem that if a ban on finning was to go into effect there would be insufficient space onboard to store whole sharks and the target catch. This could lead to attempts to hide fins, resulting in exposure of operators to enforcement penalties.

There is also some concern that in the medium to longer term the strong impetus provided by success in the banning of shark finning will carry over and reinforce ongoing efforts at (1) banning the capture of sharks entirely, either as bycatch or in directed fisheries, leading to (2) banning longlining entirely.

These concerns are not unfounded. Efforts aimed at reducing the capture of sharks through the use of new technology are already well underway in the developed countries. The most recent winner of the “Smart Gear” competition sponsored by the Worldwide Fund for Nature (WWF) was an idea to place small magnets above baited hooks that would repel sharks entirely from longlines.

Likewise, efforts to attempt a worldwide moratorium on longlining spearheaded by some of the more extreme ENGOs²⁰ have been underway for some time and included bringing the issue before the United Nations during the Informal Consultative Process on the Law of the Sea, in June, 2005. Dive and eco-tour operators in Palau interviewed in August, 2006 are all in agreement that the efforts resulting in the banning of the possession of sharks and shark fins by longline vessels in Palau is only a first step towards eliminating all longlining in the Palau EEZ.

8. Potential Consequences for Pacific Island FFA Member Countries of Implementing a Shark Finning Ban by the WCPFC

There are two major areas of potential impact to FFA members if a shark finning ban was to be adopted by the WCPFC. Major impacts would be felt in some countries by (1) the fishing industry, including those engaged in the shark fin business onshore and (2) fisheries management authorities with domestic longline fleets in the form of flag state enforcement requirements.

In order to better understand these impacts, it is useful to briefly review the available information on the relative importance of shark fins from Pacific Island countries in world trade, and summarize known commercial activity in FFA member countries

8.1 Summary of Available Information on Shark-related Commercial Activity in FFA Member Countries

The following summarizes additional relevant information on commercial activity involving shark fins in those FFA member countries that can be useful in assessing impacts of implementing measures to ban finning.

FSM: No further information at this time

Fiji: There are currently 63 domestic-based longline vessels licensed in Fiji which can fish in Fiji’s EEZ. An additional 74 longliners are based in Fiji but do

²⁰ An “extreme” ENGO is defined here as one that is known by the author to use or disseminate information on Pacific Island tuna fisheries selectively and sometimes out of context to further their goals.

not operate in the EEZ. Most or all of these vessels participate in shark finning to some degree, as the market is very active. There are currently five companies engaged in the processing of shark fins in Fiji, with the number of employees ranging from 5 to 20. Some of these firms have been engaged in business for a relatively long time and deal in other commodities such as beche de mer. Most are Asian or of Asian origin. The sources of fins for these companies are (1) domestic-based longline vessels, and (2) vessels offloading at the cannery in Levuka. Only a small amount of the overall supply is thought to be provided by local artisanal and village-based fisheries. An estimation of the overall annual value of the shark fin market in Fiji is F\$50 million. (A. Turanganivalu, pers. comm.)

Kiribati: There are reportedly 3 exporters of shark fins in the country, but volumes and sources of fins, i.e. artisanal or industrial fisheries, are not known.

Marshall Islands: Although there appear to be at least three shark fin exporters purchasing fins from longliners based in Majuro and purse seiners transshipping in the harbor, the Marshall Islands Marine Resources Authority does not maintain records on this activity and export values and volumes are unknown.

Nauru: No further information at this time

New Zealand: In FAO statistics, New Zealand ranked 9th in the world in shark product exporting countries with 4 percent of the world total, about the same as the U.S.²¹ (Lack and Sant 2006).

Niue: During the early phases of operation of their shore-based fish processing plant, it was required for longliners to offload shark trunks from sharks taken in the fishery. This was apparently done without a firm export market for trunks and resulted in the search for such markets, assumedly because of a growing inventory of shark trunks ashore.

Papua New Guinea: Export data indicates an average of about 131 tonnes of frozen shark fin and 10 tons of dried shark fin were exported during 2001-2005. Sources of the frozen shark fin is said to be the directed fishery, while dried shark fin represents bycatch from domestic longliners, and village artisanal production. In 2005, the declared export value of frozen and dried shark fins combined was US\$1.328 million (L. Kumoru, pers. comm.).

Samoa: The manager of the largest longlining company in Apia claims he does not get involved with shark fin and leaves it up to the individual skippers and crews to dispose of them (M. Batty, pers. comm.)

Solomon Islands: Several shark fin exporters are licensed by the Department of Fisheries and Marine Resources. Honiara is known by some distant water purse seine crews as a good place to sell fins because of the high prices (S. Retalmai, pers. comm.).

Tokelau: No further information at this time

Tonga: There are two or three shark fin buyers/exporters in Nuku'alofa, but only one is consistent. Two companies have conducted export trials with sharks. (Sione V. Matoto, pers. comm.)

Tuvalu: No further information at this time

²¹ Taiwan with about 20 percent of the world's total, and Spain with 13 percent were #1 and #2, respectively.

Vanuatu: There is one local shark fin buyer in Vanuatu who also deals in beche de mer. At the village level there is full utilization of sharks. There is one small-scale artisanal operator based in Santo that targets sharks for fins and teeth, giving the carcasses to villagers. (W. Naviti, pers. comm.)

8.2 Potential Consequences for the Fishing Industry

The concerns of the Pacific Island fishing industry of a finning ban are cited in section 7.2 as both short and long term. Among PICs, Papua New Guinea with 25 to 40 domestic tuna longliners active at any one time and Fiji with over 60 such vessels have the largest fleets and would be the countries most affected. Very few (if any) other PICs would be adversely affected.

It is assumed that the vessels in PNG and Fiji, most of which deliver fresh fish preserved either in ice or refrigerated seawater (RSW) would not be in a position to retain the vast majority of captured sharks onboard in order to comply with requirements of finning bans as adopted by the three RFMOs discussed above. The reasons for this inability or unwillingness to retain sharks include:

- Limited fish hold space
- Need for special handling²²
- Potential for tainting the higher value tuna catch (particularly for blue sharks)
- Lack of market ashore for some species (particularly blue sharks)

The consequences to the fishing industry would be primarily financial. There are two aspects to the financial consequences enacting a finning ban. First are the reductions in revenue from shark fin to vessels and/or crews in the affected fisheries. The second aspect is the impact on shark fin dealers and processors in the countries concerned.

The second category, the consequences for shark fin dealers and processors on revenue, employment and overall operations, is not possible to address here because of the lack of financial information regarding their operations. Obviously there would be some impacts to dealers and processors of a finning ban, as the volume of shark fins available for purchase would be lessened. Some comments can be made, however, on the potential financial consequences to fishing operations.

The following sections estimate potential financial impacts to fishing operations using certain assumptions that are explained.

²² There are several reasons for this. Live sharks, particularly large ones, can be dangerous to bring onboard. Because sharks contain high quantities of urea which turns to ammonia, the catch must be quickly bled and stored. One of the species with the highest urea content is the blue shark, the shark most commonly captured as bycatch in tuna and swordfish longline fisheries.

8.2.1 Estimated Rates of Finning in Pacific Island FFA Member Countries

Using existing onboard fishery observer data held at the Oceanic Fisheries Programme of the Secretariat of the Pacific Community, an attempt was made to quantify the level of finning in Pacific Island countries (including activity in high seas areas) that might be forgone if a finning ban were to be put in place.

For this exercise, the observer database was queried to extract information on the fate of sharks observed on longline vessels during the period 1995-2005. Only Pacific Island observer data was used to get a more accurate picture of domestic and domestic-based fleets. The fate of sharks listed in the data collected by observers fall into 8 categories:

- Retained
- Escaped
- Discarded trunk, fins retained
- Discarded, undesirable species
- Discarded, struck off
- Discarded, shark damage
- Discarded, difficult to land
- Discarded, other reason

For the purposes of this study, the analysis concentrated on the numbers of sharks caught, retained, and finned (trunks discarded but fins retained). There is no information if retained sharks were kept with fins on or as trunks and fins.

The data were separated into three fisheries: tropical deep longline fishery (TDL), tropical shallow longline fishery (TSL), and tropical albacore longline fishery (TAL). The countries represented in the tropical fisheries are Palau, FSM, Marshall Islands, Kiribati, Papua New Guinea, and Solomon Islands. Tropical deep and shallow fisheries were separated by number of hooks between floats: those trips with less than 10 hooks between floats were characterized as shallow, while those with more than 10 hooks between floats fell into the tropical deep fishery category. The remaining countries (such as Fiji) represented albacore fisheries²³.

The observer data for trips from which this shark data was obtained was then queried to obtain the total observed target (tuna) catch. These two data sets, finned sharks and total tuna catch for each of the three fisheries were then compared to obtain the number of sharks finned per tonne of tuna caught.

The results show that in the TSL, about 11 sharks were finned for every tonne of tuna caught. In the TDL, the number is about 3.5 sharks finned for every tonne of tuna. For the TAL (which has less observer coverage than the other two) about 4 sharks are finned per tonne of tuna caught, according to the observer data.

The greater number of sharks caught per tonne of tuna in the TSL is not surprising. Studies such as Moloney (2005) and Williams (1998) have identified the TSL as one where there a greater volume and diversity of bycatch, including sharks. Additionally in

²³ It is recognized that on occasion longline fleets in some countries such as PNG also target albacore.

that fishery the number of hooks between floats is more representative of Taiwanese (and some Chinese) fishing techniques that include setting the line in a manner that maximizes the catching of sharks as well as the target tuna.

Throughout all data sets for the three fisheries examined, blue sharks are the most common sharks caught, as well as the species most often finned. Tables 1 through 3 show the number of sharks by species retained and finned as well as the percentage finned by species in each of the fisheries examined²⁴.

In the TSL the results as shown in Table 1 are consistent with other studies in that the majority of sharks finned are blue sharks, a species with very limited value if trunks are retained. According to these observer data, fins retained (finned only and trunks and fins retained combined) for the three major species caught were blue (95 percent) silky (95 percent) and oceanic whitetip (98 percent).

In the TDL shown in Table 2, about one third as many sharks are finned per tonne of tuna caught as in the tropical shallow fishery. Blue sharks also represent the species with the largest number and percentage finned.

Table 3 describes the species retained and finned in the TAL. Observer data in this fishery show that the shallow longline fishery fins about 2.77 times more sharks by number per tonne of tuna caught than this fishery.

²⁴ Recall that in addition to the retained and finned categories, there are other fate categories as shown in the bulleted list above.

Table 1 Number of Sharks Retained and Finned by Species, Tropical Shallow Longline Fishery

SPECIES	NUMBER	RETAINED	FINNED	PCT FINNED	NUMBER FINNED PER TONNE OF TUNA
BLUE SHARK	3473	382	2926	84	6.44
SILKY SHARK	2443	1355	981	40	2.16
OCEANIC WHITETIP SHARK	777	366	393	51	0.86
SHARKS (UNIDENTIFIED)	549	281	142	26	0.31
GREY REEF SHARK	193	138	43	22	0.09
BIGEYE THRESHER	190	56	106	56	0.23
SHORT FINNED MAKO	169	72	81	48	0.18
THRESHER SHARKS NEI	134	13	99	74	0.22
CROCODILE SHARK	111	23	12	11	0.03
PELAGIC THRESHER	89	42	43	48	0.09
LONG FINNED MAKO	50	25	18	36	0.04
SILVERTIP SHARK	32	24	5	16	0.01
WHITETIP REEF SHARK	18	14	4	22	0.01
HAMMERHEAD SHARKS	17	6	9	53	0.02
BLACKTIP REEF SHARK	13	11	2	15	0.00
MAKO SHARKS	13	0	11	85	0.02
BLACKTIP SHARK	8	8	0	0	0.00
THRESHER	8	1	7	88	0.02
GALAPAGOS SHARK	6	5	1	17	0.00
TIGER SHARK	5	0	5	100	0.01
GREAT WHITE SHARK	2	2	0	0	0.00
BIGEYE SAND SHARK	1	0	0	0	0.00
TOTAL	8301	2824	4888	59%	10.76

Source: SPC Observer Data, Pacific Islands only

Table 2 Number of Sharks Retained and Finned by Species, Tropical Deep Longline Fishery

SPECIES	NUMBER	RETAINED	FINNED	PCT FINNED	NUMBER FINNED PER TONNE OF TUNA
BLUE SHARK	5961	207	5341	90	1.76
SILKY SHARK	2719	859	1708	63	0.56
BIGEYE THRESHER	1212	40	1002	83	0.33
OCEANIC WHITETIP SHARK	985	275	672	68	0.22
PELAGIC THRESHER	748	36	620	83	0.20
SHORT FINNED MAKO	645	88	508	79	0.17
LONG FINNED MAKO	295	8	241	82	0.08
THRESHER SHARKS NEI	285	3	54	19	0.02
SHARKS (UNIDENTIFIED)	180	11	15	8	0.00
CROCODILE SHARK	164	10	26	16	0.01
BLACKTIP SHARK	151	42	104	69	0.03
SILVERTIP SHARK	99	8	24	24	0.01
GALAPAGOS SHARK	91	41	46	51	0.02
TIGER SHARK	91	50	28	31	0.01
THRESHER	72	0	59	82	0.02
BLACKTIP REEF SHARK	35	0	29	83	0.01
GREY REEF SHARK	34	4	21	62	0.01
MAKO SHARKS	34	0	23	68	0.01
GREAT WHITE SHARK	32	10	20	63	0.01
HAMMERHEAD SHARKS	26	6	18	69	0.01
SCALLOPED HAMMERHEAD	11	0	2	18	0.00
BRONZE WHALER SHARK	10	2	8	80	0.00
COOKIE CUTTER SHARK	3	0	0	0	0.00
DOG FISHES	3	0	0	0	0.00
WHITETIP REEF SHARK	1	0	0	0	0.00
TOTAL	13,887	1,700	10,569	76	3.49

**Table 3 Number of Sharks Retained and Finned by Species, Tropical
Albacore Longline Fishery**
SPECIES

	NUMBER	RETAINED	FINNED	PCT FINNED	NUMBER FINNED PER TONNE OF TUNA
BLUE SHARK	5613	437	4821	86	2.53
OCEANIC WHITETIP SHARK	1625	334	1233	76	0.65
SILKY SHARK	919	213	626	68	0.33
SHORT FINNED MAKO	652	396	221	34	0.12
BLACKTIP SHARK	280	167	98	35	0.05
SHARKS (UNIDENTIFIED)	221	16	54	24	0.03
LONG FINNED MAKO	103	57	26	25	0.01
BIGEYE THRESHER	101	19	34	25	0.02
GREY REEF SHARK	78	17	54	69	0.03
SILVERTIP SHARK	76	0	64	84	0.03
PELAGIC THRESHER	65	5	25	38	0.01
MAKO SHARKS	62	25	28	45	0.01
HAMMERHEAD SHARKS	58	36	19	33	0.01
TIGER SHARK	57	7	33	58	0.02
THRESHER SHARKS NEI	50	6	18	36	0.01
BLACKTIP REEF SHARK	49	0	39	80	0.02
CROCODILE SHARK	14	0	0	0	0.00
SMOOTH HAMMERHEAD	8	1	6	75	0.00
COOKIE CUTTER SHARK	7	0	0	0	0.00
GREAT HAMMERHEAD	7	0	7	100	0.00
SANDBAR SHARK	7	0	6	86	0.00
SCALLOPED HAMMERHEAD	6	0	6	100	0.00
BRONZE WHALER SHARK	4	1	3	75	0.00
THRESHER	4	3	1	25	0.00
SEAL SHARK / BLACK SHARK	3	1	0	0	0.00
GALAPAGOS SHARK	2	0	2	100	0.00
BIGNOSE SHARK	1	0	0	0	0.00
GREAT WHITE SHARK	1	0	1	1	0.00
TOTAL	10,073	1741	7425	74	3.89

8.2.2 Estimated Financial Consequences of a Finning Ban to the Fishing Industry

In order to determine the loss of fin revenue in the three fisheries above, certain information is required that is currently unavailable. Since fins are priced by weight, the first requirement is an average whole or processed (trunk) shark weight that would enable fin weight to be roughly calculated. Obviously since finned shark bodies are discarded, this information is not available. Retained shark trunks could be used; it is best done by species, since shark fin size and value can vary by species. Because there is a range of forms in which fins can be marketed, knowledge of the manner in which fins

are sold (e.g. as fin sets, wet or dried, etc.) and an estimate of price at the location(s) where fins are purchased is essential.

None of the above detailed information required to determine fin revenue on the basis of the observer data presented is available to this study. If any estimates are to be made, one must use estimates and assumptions that are deemed to be at least reasonable.

A very rough estimate of fin value can be made using an assumption of a weight of 45 kg for dressed trunks (headed and gutted). This is deemed reasonable for narrow bodied sharks such as blue and silky sharks, two of the most predominant species that are finned. Using the currently acceptable ratio of fin to trunk weight of 5 percent, an estimate of (wet) fin weight for finned sharks of 2.25 kg is made for the three fisheries for which observer data is available.

Using these parameters, the (wet) weight of fins from sharks that are finned per tonne of target tuna catch for each fishery would be:

- Tropical shallow longline: 25 kg
- Tropical deep longline: 8 kg
- Tropical albacore longline: 9 kg

Fin prices for wet fins, ex-vessel, in countries where domestic vessels are based can be applied to the fin weights above to obtain a rough approximation of the value per tonne of tuna caught in a particular fishery.

For example, if ex-vessel prices are \$25 per kg, vessels in the TSL might be obtaining upwards of \$600 for every tonne of tuna caught. A vessel getting the same price but using deep set longline gear would be getting around one-third as much, or \$200. A vessel in the TAL would be getting slightly more, around \$225 for every tonne of tuna. As described above the ex-vessel prices for what may be fins of identical quality can vary considerably between ports and dealers within ports depending on several factors.

Extrapolations to country-wide catch data are even more tenuous, since it is not clear how much shallow, deep or tropical albacore longline contributes to the overall tuna catch by domestic flag fleets in individual PICs.

For this reason it is left to individual PICs to determine which fisheries or gear types are represented by overall tuna longline catch, obtain local ex-vessel fin prices, confirm the form in which fins are retained and sold, and utilize the above observer data to roughly estimate the potential value to their industry of fins obtained through finning.

The ranges of the ex-vessel values of shark fins obtained through finning in FFA countries can be expected to be large. In Cook Islands, for example, assuming that all longline catch of 2,431 tonnes shown in the 2004 SPC Tuna Yearbook was done targeting albacore (not necessarily the case) and using the per tonne shark fin values above, the value of fins would be on the order of \$550,000. In Fiji, on the other hand, using the same parameters and 2004 Yearbook catch, the ex-vessel value of fins obtained from finning would be about \$3.75 million.

It is emphasized that these figures are based on sparse observer data and assumptions for shark weights and fin price that cannot be easily validated. Nevertheless, the methodology provides a guide and subsequent estimated revenue figures can provide at least some indication of the magnitude of the situation in particular countries.

8.2.3 Estimated Value of Fins from Finning in FFA Pacific Island Member Countries

As noted, detailed breakdowns of the level of participation in each of the three fisheries are not available for PICs with domestic longline fleets. Despite this lack of information, a very rough estimate can be made of the total volume of shark fins by choosing what is thought to be a reasonable number to represent the number of sharks finned per tonne of tuna based on information in the three fisheries. Given the finning numbers for the three fisheries and the configuration of the various domestic fleets in PICs, a reasonable range is thought to be around 5 to 6 sharks finned (11.25 to 13.5 kg of shark fin) per tonne of tuna caught. At the price used in the example above, \$25 per kg, this would result in a value of \$281 to \$330 per tonne of longline tuna caught.

Applying the per ton value figure to a total longline tuna catch of about 29,000 tonnes for PICs (SPC 2005) gives an estimated landed value of shark fins from finning of from \$8.2 million to \$9.6 million²⁵. This would be approximately 6 to 7 percent of the total value of longline tuna catch by fleets of PICs of about \$137 million²⁶.

8.2.4 Other Potential Consequences

It is assumed that a finning ban will, in the short term, reduce the amounts of fins contributed by PICs to international trade. This could drive up the price of fins and have several potential consequences:

- Financially benefit directed shark fisheries by increasing the fin portion of their catch value
- Encourage vessels with only marginal returns in the tuna fishery to target sharks, if allowed by domestic authorities
- Result in schemes to collect fins from vessels at sea to bypass controls placed on finning²⁷
- Result in reduced use of ports by foreign transshipping longline vessels who would not want to be scrutinized by authorities enforcing a ban²⁸

²⁵ For comparison and to get an idea of the order of magnitude of this estimated value for the PICs, the value of shark fins sold by the Hawaii longline fleet in 1998, two years prior to the U.S. shark finning ban went into effect, was estimated at from \$950,000 to \$1,140,000. The estimated ex-vessel value of shark fins landed in Hawaii, Guam, and American Samoa that year was \$4.2 to \$5.3 million (McCoy and Ishihara 1999).

²⁶ Catch values calculated use prices in Williams and Reid (2006). They are applied to longline catch by species shown in the SPC Tuna Yearbook 2004 for Cook Islands, FSM, Fiji, PNG, Samoa, Solomon Islands, Tonga and Vanuatu.

²⁷ This is, in fact, what happened in one case in the U.S. after their finning ban went into effect. One case a U.S. flag vessel was caught on the fishing grounds with a cargo of fins that had been collected from other vessels to avoid detection of finning.

²⁸ This is what has happened in Guam, where use of the port by Taiwanese vessels has dropped off significantly since one Taiwanese longliner was prosecuted for possession of fins under the U.S. Shark Finning Prohibition Act.

8.3 Potential Consequences for Fisheries Management in FFA Member Countries

If a ban on shark finning was adopted by the WCPFC in a document addressing shark conservation, and if the language in that document mirrored language in the other three RFMOs, WCPFC members could be required to do the following:

- Report all data for catches of sharks by the flag state, likely to the Scientific Committee.
- Take necessary measures to require that their fishermen fully utilize their entire catches of sharks.
- Require vessels to have onboard fins that total no more than a percentage (currently 5 percent) of the weight of sharks onboard.
- Take the necessary measures to ensure compliance with the (5) percent ratio through certification, monitoring by an observer, or other appropriate measures. This would not be necessary if members required fins and carcasses to be offloaded together at the point of first landing.
- Encourage the release of live sharks, especially juveniles, to the extent possible, that are caught incidentally and are not used for food and/or subsistence.
- Where possible, undertake research to identify shark nursery areas.

The fisheries management consequences for FFA members as a result of adoption of a prohibition on shark finning by the WCPFC would depend to a degree on the type of document that is adopted. In the case of the other three RFMOs, documents that are binding on parties and cooperating non-parties were adopted.

Further potential consequences of adopting a shark finning ban are outlined in section 7.2 above that details Pacific Island fishing industry concerns.

9. Potential Consequences for FFA Members of Not Implementing a Shark Finning Ban

The reviews above of the shark finning issue worldwide as well as the description of the sources of impetus for management action show that in the event of a failure to implement a shark finning ban in upcoming WCPFC deliberations, one could expect an increase of the pressure on FFA members, and continued pressure on WCPFC as a management body to act in the near future.

This pressure will come from two sources: the ENGOs active in the region, including those who are admitted as observers to WCPFC, and the U.S. The former will likely use continued publicity and pressure on politicians to keep the issue in front of the public.

In particular, efforts will likely accelerate and continue to list various species of sharks on CITES lists, and curtail trade in shark fins from those species²⁹.

²⁹ The Convention on International Trade in Endangered Species of Fauna and Flora, CITES, was established to remedy a situation where international trade was endangering the survival of certain species. Species can be listed in one of three appendices according to the degree of threat trade poses to their existence.

The U.S. will likely rely on both formal and informal diplomatic efforts, given that the U.S. Sharkfin Prohibition Act requires that the U.S. government:

- Seek agreements calling for an international ban on shark-finning and other fishing practices adversely affecting these species through the United Nations, the Food and Agriculture Organization's Committee on Fisheries, and appropriate regional fishery management bodies
- Urge other governments involved in fishing for or importation of shark or shark products to fulfill their obligations to collect biological data, such as stock abundance and by-catch levels, as well as trade data, on shark species as called for in the 1995 Resolution on Cooperation with FAO with Regard to study on the Status of Sharks and By-Catch of Shark Species, and
- Urge other governments to prepare and submit their respective National Plan of Action for the Conservation and Management of Sharks to the 2001 session of the FAO Committee on fisheries, as set forth in the International plan of Action for the Conservation and Management of Sharks.

Protracted discussions could see the emergence of regional or worldwide efforts to boycott fisheries that are perceived to not be acting responsibly by continuing to allow shark finning. If such boycotts eventuate, it is more likely to come from ENGO sources than through government trade sanctions. The possibility of these efforts taking place are not as remote as one might think, particularly in countries that serve as secondary markets for Pacific Island tuna: the U.S. and Australia.

In international fora such as the International Union for the Conservation of Nature (IUCN) and CITES there is already a fair degree of sentiment growing that most countries have failed to live up to obligations to enact and follow an NPOA for sharks. It can be expected that this issue will be taken up at the 2007 FAO Committee on Fisheries meeting (CITES 2006).

10. Conclusions

Understandably, with many other issues to contend with, there has not been much attention paid to shark finning by fisheries administrators in the Pacific Islands. Several FFA member countries have, however, banned the practice on their domestic fleets by virtue of their membership in other RFMOs with one, Palau, banning it completely within its EEZ.

The impetus for adoption of a shark finning ban by WCPFC will continue, with ENGOs and the U.S. providing most of the pressure to do so within the WCPFC context. Following the lead of the other three RFMOs managing tuna, a ban will likely be included in a more generalized document addressing shark conservation as a whole.

The three RFMOs have not taken identical paths to adoption of shark conservation measures, with the ICCAT example being the most deliberate. The ICCAT case may offer some guidance to FFA members uncomfortable with enacting a ban now and accepting the management tasks required.

Some subjects, primarily the five percent provision are still the subject of debate and are currently being studied and discussed by two of the other RFMOs.

The PICs that would be most adversely affected by a ban on shark finning are Fiji and Papua New Guinea, with the financial impact being the greatest in the former. The foregone revenue from shark finning to domestic fleets in these two countries, while relatively small in comparison to the overall value of the catch will place additional financial hardships on vessel owners and operators already concerned with increasing costs of operation, including higher fuel and air freight prices.

APPENDIX 1 Membership in Regional Fisheries Management Organizations

(Members and Observers of WCPFC in bold italics)

M= member (IATTC), (IOTC)

CNP= Cooperating non-Party (IATTC) (IOTC)

CFE= cooperating fishing entity (IATTC)

CP= Contracting Party (ICCAT)

CP, E, or FE = Cooperating Parties, Entities or Fishing Entities (ICCAT)

COUNTRY	IATTC		ICCAT		IOTC	
	M	CNP CFE	CP	CP,E , FE	M	CNP
1. <i>Australia</i>					X	
2. Barbados			X			
3. Belize		X	X			
4. Brazil			X			
5. <i>Canada</i>		X	X			
6. <i>China</i>		X	X		X	
7. <i>Chinese Taipei</i>		X		X		
8. Comoros					X	
9. <i>Cook Islands</i>		X				
10. Costa Rica	X					
11. Croatia			X			
12. Ecuador	X					
13. El Salvador	X					
14. Eritrea					X	
15. <i>European Community</i>		X	X		X	
16. <i>FSM</i>						
17. <i>Fiji</i>						
18. <i>France</i>					X	
19. Ghana			X			
20. Guatemala	X					
21. Guinea					X	
22. Guyana				X		
23. Honduras		X				
24. Iceland			X			
25. India					X	
26. <i>Indonesia</i>						X
27. Iran					X	
28. <i>Japan</i>	X		X		X	
29. Kenya					X	
30. <i>Kiribati</i>						
31. <i>Korea</i>	X		X		X	
32. Libya			X			
33. Madagascar					X	
34. Malaysia					X	

35. <i>Marshall Islands</i>						
36. Mauritius					X	
37. Mexico	X					
38. Namibia			X			
39. <i>Nauru</i>						
40. Netherlands Antilles				X		
41. <i>New Zealand</i>						
42. Nicaragua	X					
43. <i>Niue</i>						
44. Norway			X			
45. Oman				X	X	
46. Pakistan					X	
47. <i>Palau</i>						
48. Panama	X					
49. <i>Papua New Guinea</i>						
50. Peru	X					
51. <i>Philippines</i>			X		X	
52. Russia			X			
53. <i>Samoa</i>						
54. Seychelles					X	
55. <i>Solomon Islands</i>						
56. South Africa			X			X
57. Spain	X					
58. Sri Lanka					X	
59. Sudan					X	
60. Syria			X			
61. Thailand					X	
62. <i>Tokelau</i>						
63. <i>Tonga</i>						
64. Trinidad & Tobago			X			
65. Turkey			X			
66. <i>Tuvalu</i>						
67. United Kingdom & Overseas Terr.			X		X	
68. <i>United States</i>	X		X			
69. <i>Vanuatu</i>	X		X		X	
70. Venezuela	X					

APPENDIX 2 Comparison of RFMO Approaches

Parallel provisions are placed horizontally. Numbers refer to numbered paragraphs in the source documents.

IATTC (Resolution) June, 2005	ICCAT (Recommendation) 2004	IOTC (Resolution) 2005
1. Each Party and co-operating non-party, cooperating fishing entity or regional economic integration organization (collectively CPCs) should establish and implement a national plan of action for conservation and management of shark stocks, in accordance with the FAO International Plan of Action for the Conservation and Management of Sharks		
	1. Contracting Parties, Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) shall annually report Task I and Task II data for catches of sharks, in accordance with ICCAT data reporting procedures, including available historical data.	1. Contracting Parties, Cooperating non-Contracting Parties (CPCs) shall annually report data for catches of sharks, in accordance with IOTC data reporting procedures, including available historical data.
2. In 2006, the IATTC, in cooperation with scientists of CPCs and, if possible, the Western and Central Pacific Fisheries Commission, shall provide preliminary advice on the stock status of key shark species and propose a research plan for a comprehensive assessment of these stocks.		2. In 2006 the Scientific Committee (in collaboration with the Working party on Bycatch) provide preliminary advice on the stock status of key shark species and propose a research plan and timeline for a comprehensive assessment of these stocks.
3. CPCs shall take the measures necessary to require that their fishers fully utilize any retained catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, guts, and skins, to the point of first landing	2. CPCs shall take the necessary measures to require that their fishermen fully utilize their entire catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing.	3. CPCs shall take the necessary measures to require that their fishermen fully utilize their entire catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing

4. CPCs shall require their vessels to have onboard fins that total no more than 5% of the weight of sharks onboard, up to the point of first landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ration through certification, monitoring by an observer, or other appropriate measures.	3. CPCs shall require their vessels to have onboard fins that total no more than 5% of the weight of sharks onboard, up to the point of first landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ration through certification, monitoring by an observer, or other appropriate measures.	4. CPCs shall require their vessels to not have onboard fins that total more than 5% of the weight of sharks onboard, up to the first point of landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ratio through certification, monitoring by an observer, or other appropriate measures.
5. The ratio of fin-to-body weight of sharks described in paragraph 4 shall be reviewed by the Working Group on Stock Assessment and reported back to the Commission in 2006 for revision, if necessary.	4. The ratio of fin-to-body weight of sharks described in paragraph 3 shall be reviewed by the SCRS and reported back to the Commission in 2005 for revision, if necessary.	5. The ratio of fin-to-body weight of sharks described in paragraph 4 shall be reviewed by the scientific committee and reported back to the Commission in 2006 for revision, if necessary.
6. Fishing Vessels are prohibited from retaining on board, transshipping, landing or trading in any fins harvested in contravention of this Resolution.	5. Fishing Vessels are prohibited from retaining on board, transshipping, landing or trading in any fins harvested in contravention of this Recommendation.	6. Fishing vessels are prohibited from retaining on board, transshipping or landing any fins harvested in contravention of this Resolution.
7. In fisheries for tunas and tuna-like species that are not directed at sharks, CPCs shall encourage the release of live sharks, especially juveniles, to the extent practicable, that are caught incidentally and are not used for food and/or subsistence.	6. In fisheries that are not directed at sharks, CPCs shall encourage the release of live sharks, especially juveniles, to the extent possible, that are caught incidentally and are not used for food and/or subsistence.	7. In fisheries that are not directed at sharks, CPCs shall encourage the release of live sharks, especially juveniles and pregnant sharks, to the extent possible that are caught incidentally and are not used for food and/or subsistence.
	7. In 2005, the SCRS shall review the assessment of shortfin mako sharks (<i>Isurus oxyrinchus</i>) and recommend management alternatives for consideration by the Commission, and reassess blue shark (<i>Prionace glauca</i>) and shortfin mako no later than 2007.	
8. CPCs shall, where possible, undertake research to identify ways to make fishing gears more selective.	8. CPCs shall, where possible, undertake research to identify ways to make fishing gears more selective.	8. CPCs shall, where possible, undertake research to identify ways to make fishing gears more selective (such as the implications of avoiding the use of wire traces).

9. CPCs are encouraged, where possible, to conduct research to identify shark nursery areas.	9. CPCs are encouraged, where possible, to conduct research to identify shark nursery areas.	9. CPCs are encouraged, where possible, to conduct research to identify shark nursery areas.
10. The Commission shall consider appropriate assistance to developing CPCs for the collection of data on shark catches.	10. The Commission shall consider appropriate assistance to developing CPCs for the collection of data on their shark catches.	10. The Commission shall consider appropriate assistance to developing CPCs for the collection of data on their shark catches.
11. Each CPC shall annually report data for catches, effort by gear type, landing and trade of sharks by species, where possible, in accordance with IATTC reporting procedures, including available historical data, CPCs shall send to the IATTC Secretariat, by May 1, at the latest, a comprehensive annual report of the implementation of this Resolution during the previous year.		
12. Paragraphs 2-11 of this resolution apply only to sharks caught in association with fisheries managed by IATTC.	11. This recommendation applies only to sharks caught in association with fisheries managed by ICCAT.	11. This resolution applies only to sharks caught in association with fisheries managed by the IOTC.
		12. This provision to apply without prejudice to many artisanal fisheries which traditionally do not discard carcasses.

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