Optimizing Fisheries Benefits in the Pacific Islands:

Major Issues and Constraints

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## Abbreviations and Acronyms

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>AusAID</td>
<td>Australian Agency for International Development</td>
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<td>DWFN</td>
<td>distant water fishing nation</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FFA</td>
<td>Pacific Islands Forum Fisheries Agency</td>
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<td>FSM</td>
<td>Federated States of Micronesia</td>
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<tr>
<td>GDP</td>
<td>gross domestic product</td>
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<td>IUU</td>
<td>illegal, unreported and unregulated</td>
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<td>PIC</td>
<td>Pacific Island country</td>
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<td>PIFS</td>
<td>Pacific Islands Forum Secretariat</td>
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<td>PNG</td>
<td>Papua New Guinea</td>
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<td>SPC</td>
<td>Secretariat of the Pacific Community (formerly South Pacific Commission)</td>
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<td>SPREP</td>
<td>Secretariat of the Pacific Regional Environment Programme</td>
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<td>WCPO</td>
<td>western and central Pacific Ocean</td>
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<td>WCPFC</td>
<td>Western and Central Pacific Fisheries Commission</td>
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Executive Summary

This report has been produced to inform the World Bank management and other interested donors of the status and issues of the fisheries sector in the Pacific Islands region. It identifies key constraints and past mitigating actions, and examines the potential future role of the World Bank in the Pacific Islands fisheries sector.

Tuna fisheries in the Pacific

The Pacific Islands region and the wider western and central Pacific Ocean is the most important tuna fishing area in the world, estimated to be worth about US$3 billion in 2007.

At present, the main benefits from tuna fisheries include license fees, direct employment in fishing activities, spin-offs from locally based fishing fleets and processing facilities, and modest local taxes. All Pacific Island countries receive fees for foreign fishing activities in their waters. In some countries, access fees form a very large portion of government revenue, up to one-third for some countries in some years. One of the major issues regarding tuna fisheries in the region is the relative benefits of receiving access fees vs. pursuing domestic industry development.

An estimated 1.4 million metric tonnes of tuna have been taken annually from the waters of Pacific Island countries in recent years, although less than one-quarter of the catch is made by vessels based in this region. Consensus is growing that improved management could enhance the percentage of value added per metric tonne of landed tuna. The same is true of Pacific Island countries’ participation in existing tuna processing and marketing activities.

The tuna industry is currently undergoing structural changes. Tuna harvesting, processing and marketing is being affected by a variety of factors, including rapidly rising energy prices and changes in major world markets as a result of major exchange rate movements, differences in relative income growth and changing consumer demand patterns. These features are likely to affect the distribution of benefits from the region’s tuna resources.

Constraints to fisheries development

Many of the constraints to fisheries development can be divided into two categories: (a) governance; and (b) small countries and/or industries struggling with powerful countries and powerful economic interests. The measures suggested for their mitigation are mostly conventional, and are similar to approaches that have been attempted (with varying degrees of success) in recent history, although suggestions for a different approach are also made.

Some of the major constraints to tuna fisheries development in the region include poor national fisheries institutions, corruption within the fisheries sector, lack of skilled fishery managers, lack of regional solidarity, poor government policies for tuna industry development, weak governance in the inshore fisheries subsector, and market access issues.

Poor national level fisheries institutions.

Government fisheries agencies are far less effective now than they were two decades ago. Some reasons for this are institutional structures that result in low accountability to stakeholders, corruption, poorly trained staff, and budgetary processes that favor staffing levels over activities. Many of the present difficulties in the fisheries sector can be traced directly to ineffective fisheries departments and low levels of professionalism. Recommended mitigating actions to address this issue include:

- Consolidating experiences from the many institutional enhancement projects that have been carried out in the region, and linking these efforts to ongoing governance programs in and outside the sector at national and regional levels;
• Enhancing the ability of fishery stakeholders to influence fisheries department policies and activities and to promote accountability;
• Enhancing the skills of fishery managers; and
• Creating evaluation and oversight mechanisms to assure greater adherence to policies and legislation (e.g. bringing the results of governance improvement work and evaluations to the attention of stakeholders, high-level authorities, and the general public).

Corruption in fisheries. In recent years there has been a noticeable rise in fisheries-related corruption in the region. Corruption is a major issue in fisheries governance, and many of the actions identified for improving fisheries institutions also apply to decreasing corruption. Recommended mitigating actions to address this issue include:

• Identifying simple generic measures for deterring corruption specific to the fisheries sector;
• Estimating and publicizing the cost to the national and regional economy of corrupt activity in the fisheries sector; and
• Establishing links between national and international anti-corruption activities and those at the fisheries level.

Lack of skilled fishery managers. In many of the smaller Pacific Island countries, fishery agencies do not have staff with the skills needed to effectively manage fisheries. Also, the regional university does not recognize the large and growing need for fisheries managers. Recommended mitigating actions to address this issue include:

• Creating an awareness and reviewing the curriculum of the University of the South Pacific and other regional institutions, in conjunction with a survey of demand from government fishery agencies; and
• Arranging a program to finance fisheries management students and mid-career managers.

Regional solidarity in fisheries. Pacific Island countries can only effectively deal with more powerful countries and economic interests through regional solidarity. In previous decades, the region was noted for its solidarity in fisheries matters, especially in dealing with distant water fishing nations (DWFN). For various reasons, however, this solidarity has decreased. Recommended mitigating actions to address this issue include:

• Assessing the economic and political costs of eroding regional solidarity in fisheries, giving examples of where it has occurred, and how it may be avoided in the future;
• Encouraging the concept of accountability in regional agreements, including pre-agreed mechanisms for dealing with non-compliance; and
• Developing a regional sector management strategy that enables the resource poorest country to equitably benefit from regional tuna resources by enhancing regional benefits across the board.

Government policies for tuna industry development. It is generally recognized in the region that the major role of government in promoting tuna industry development should be improving fisheries management policies. This concept, however, has not been fully implemented in most countries. Recommended mitigating actions to address this issue include:

• Carrying out national reviews of private sector investment conditions that focus on the fisheries sector, using both investment and fisheries expertise;
• Exploring potential benefits of improved resource and sector management, assessing multiple scenarios of resource and fleet management, and improvements in the framework for private investment; and
• Developing a group of donors that would jointly support a rational private sector investment program, possibly in conjunction with the negotiation and implementation of future fisheries agreements and adjustments of the resource management system.

Weak governance in the inshore fisheries subsector. Fisheries departments, fisheries officers, and communities need to take more
responsibility for marine resources. A related matter concerns village food supplies. Although the security of village marine food resources is arguably the greatest issue with respect to inshore fisheries in the region, there is some danger that its importance may be obscured by the quest for greater economic development. Recommended mitigating actions to address this issue include:

- Promoting policies or management plans against which the actions of fishery departments with regards to inshore fisheries can be measured;
- Subjecting inshore development schemes to objective economic scrutiny by enhancing the ability of regional organizations to provide economic advice on small-scale fisheries; and
- Enhancing the skills of fishery managers.

**Market access.** Access to the world’s lucrative tuna markets is often constrained by food safety issues, the requirements of trade agreements, and logistical considerations. Papua New Guinea is the only country in the region that is compliant with European Union food sanitation requirements. Some of the most important logistical considerations in market access concern inadequate airports and airline policies. Many countries do not have adequate size airports for economical air-freighting and most airlines that service the region are likely to introduce aircraft that have less air cargo capacity. Recommended mitigating actions to address this issue include:

- Promoting more effective national fisheries institutions in order to seriously address the blockages created by the sanitary requirements; and
- Following up on a 2000 study that suggested regional cooperation in air freighting of fish.

All of the mitigation measures identified above are in many respects conventional, and are similar to approaches that have been attempted — sometimes with mediocre results — in the last two decades. This lack of success indicates that a fundamental change of strategy is required to improve regional benefits from fisheries. Some new approaches may circumvent traditional institutional and political constraints and/or may actively aim to address them. Such new approaches include using modern financial instruments, and more active multi-lateral donor participation in fishing sector management.

Based on the information and analysis presented in this report, The World Bank’s involvement in fisheries in the Pacific Islands region should focus on:

- Enhancing the effectiveness of their governance;
- Assessing the status and financial feasibility of the main fisheries, and their potential restructuring; and
- Enhancing Pacific Island countries’ share of future domestic income (value added) from tuna fisheries.

A summary of World Bank interventions that could lead to more benefits to Pacific Island countries is provided below. The interventions are prioritized according to the magnitude of likely benefits to countries, and whether the intervention is currently being addressed:

- Reduce corruption in fisheries;
- Improve poor national fisheries institutions;
- Enhance skills of fishery managers;
- Encourage countries to “take advantage of their advantage” in dealing with DWFN;
- Increase country participation in the tuna industry;
- Improve impact of fisheries studies;
- Improve government policies for tuna industry development;
- Improve regional solidarity in fisheries;
- Improve the effectiveness of the Western and Central Pacific Fisheries Commission;
- Strengthen governance in the inshore fisheries subsector;
- Improve effectiveness of monitoring, control, and surveillance through economic analysis;
- More active multi-lateral donor participation in fishing sector management;
- Improve market access; and
- Specific studies that may cover a broader (economic and/or political) area than existing analysis.
Introduction

In the last 10 years, World Bank activity in the fisheries sector of the Pacific Islands region has been limited to two Regional Economic Reports, a study of coastal resources management, and a few technical assistance missions. The purpose of this study was to conduct a brief internal review of the Pacific fisheries sector’s past performances, based on the existing literature and experience of the individuals involved.

The report’s main aim is to identify key constraints and past mitigating activities in fisheries in the Pacific Islands region, and activities supported by past donor, regional and national fisheries programs. In addition, the report examines the potential future role of the World Bank in the Pacific Islands region fisheries sector. This report’s findings are intended as a starting point in this analysis. The next step is to facilitate a frank discussion about the potential World Bank role with key donors, regional institutions, and national government authorities currently involved in the sector.

The record of past donor support suggests that while single donors have successfully implemented technical assistance and investment projects, they have, as a group, been less effective in addressing core sector issues such as: (a) the economically lopsided relationship between Pacific Island countries (PICs) and distant water fishing nations (DWFNs); (b) the economically sub-optimal management of tuna fisheries; and (c) enhancing PICs’ share of the value added created by the region’s tuna fishery.
1. Fish Resources and Fisheries

1.1 Overview

The region’s fishery resources can be broadly divided into two main categories: oceanic and coastal or inshore.

- **Oceanic resources** include tunas, billfish and allied species, which utilize pelagic habitats. Individuals may cover large distances. These resources form the basis of the region’s industrial fisheries.

- **Coastal or inshore resources** include a wide range of finfish and invertebrates that utilize shallow water habitats, and whose individual movements are restricted to coastal areas. Coastal fisheries resources are of fundamental importance in the Pacific Islands. The living resources in the zone between the shoreline and the outer reefs are crucial to the nutrition, welfare, culture, employment, and recreation of Pacific Islanders.

Tuna constitute the region’s primary catch. The amount of tuna caught is about 10 times that of all other types of fish combined. In terms of value, the tuna catch is worth over seven times the value of all other Pacific Island fish catches combined. The Pacific Islands region and the wider western and central Pacific Ocean (WCPO) is the most important tuna fishing area in the world. The average annual tuna catch during the past 10 years is almost as much as the combined tuna catches of the eastern Pacific, and Indian and Atlantic oceans combined.

![Figure 1: The Exclusive Economic Zones of Pacific Island Countries](source)

*Source: Courtesy of the Secretariat of the Pacific Community*
Pacific Island fisheries can be further categorized by:

- **Industrial fisheries**, which are almost exclusively for tunas and allied species caught offshore. The only other industrial fishery in the region is for prawns in Papua New Guinea (PNG). Industrial fisheries use both local and foreign vessels.

- **Small-scale commercial fisheries**, which can be further broadly subdivided into those producing export commodities, and those supplying domestic markets.

- **Subsistence fisheries**, which support rural economies and are extremely important to the region’s nutrition and food security.

Figures 2–4 show the average annual production from these categories of fisheries in the early 2000s.

Reid (2007) indicates that during recent years, about 1.4 million metric tonnes of tuna were taken from the waters of Pacific Island countries (PICs), with less than one-quarter of the catch made by vessels based in the region. A substantial amount of tuna comes from international waters adjacent to the 200-mile exclusive economic zones of PICs.

**Figure 2: Annual Production Volumes**

![Annual Production Volumes](image)

*Source: Gillett and Lightfoot (2001)*
1.2 Tuna Fisheries

Several very different gear types are used to catch tuna in the region. Appendix 1 gives a short description of the main gear types used.

The absolute and relative importance of tuna fishing gear has changed over time. In addition, the spatial distribution of gear use is quite uneven in the region.

- **Purse seining** is the most capital intensive of all fishing operations. Of the 175 purse-seine vessels presently operating in the region, almost all are owned by foreign companies, but some have been enticed by PICs to base themselves in the region. Purse seining is only feasible in the equatorial-most waters of PICs.

- **Longlining uses** smaller vessels and has been promoted as the most appropriate tuna fishing method for PICs. A modest number of locally owned fleets have been established in most PICs. Long-range
vessels based in Asian countries operate in the region and in adjacent high seas areas.

- **Pole-and-line** fleets previously operated in several PICs but this labor-intensive technique experienced great difficulty in competing with purse seining. The Japanese fleet continues to fish in and to the north of the region, but supplies a protected market. The only significant regional fleet is the government-operated remnant of a joint venture operation in the Solomon Islands.

- **Trolling** is carried out on a large scale only by overseas vessels in temperate waters to the south of the region.

### 1.3 Status of Tuna Stocks

There are 61 species of tuna, 14 of which are considered “true tuna”. Four species are commercially important in the Pacific Islands region: skipjack, yellowfin, bigeye, and albacore. These tuna are quite distinct with respect to how they are captured, the amount presently captured, the size of their populations, and their end use. Appendix 1 summarizes the most recent stock assessment information on these four important species, but in summary:

- Current catch levels of skipjack appear to be easily sustainable;
- Current catch levels of South Pacific albacore are likely to be sustainable;
- Yellowfin stocks are likely to be nearing full exploitation. Yellowfin in equatorial regions are probably being exploited at a much higher rate than those in subtropical areas, and current levels of exploitation are likely to move the stock to an overfished state in the short term to medium term; and
- Current catch levels of bigeye appear not to be sustainable, unless the recent high recruitment is maintained.

An important question facing the region is whether tuna resources will continue to provide maximum benefits for future generations of Pacific Islanders. A recent report (Gillett and Langley 2007) concluded that the management actions needed to maintain fish stocks and enable fisheries to create the greatest value added have already been recommended to PICs, backed by relevant research. Experiences from countries outside the region, suggests that the greatest risk to Pacific Island tuna resources is political. That is, governments are unwilling or unable — on account of foreign political and local financial pressure — to take the required actions.

### 1.4 Coastal Fisheries and Aquaculture

The region’s coastal and inshore artisanal and subsistence fisheries capture about 500 species of finfish, invertebrates, and marine plants. It is estimated that the commercial inshore catch is made up of reef and deep slope fish (43% of total weight), coastal pelagic fish (18%), trochus, green-snail, and pearl-shell (collectively 9%), crustaceans (8%), sea cucumber (7%), and estuarine fish (6%) (Gillett 2002).

Typically, women are involved in inshore fishing activities such as reef gleaning, invertebrate collection, and the preparation of food from fishing activities. With some exceptions, men are usually involved in fishing farther offshore for larger species of fish, and in diving activities.

In general, inshore fish resources are heavily fished and often show signs of overexploitation, especially in areas close to population centers, and for fishery products in demand by rapidly-growing Asian countries. Inshore fisheries are also negatively affected by habitat degradation, which occurs from destructive fishing practices, urbanization, siltation from mining and/or logging operations, and competing uses of the coastal zone.

Traditionally, coastal resource management was handled at the community level, and appears to have been reasonably successful. In recent decades, however, this system of management has experienced serious problems, one of which is that the authority of local traditional leaders is eroding, while at the same time threats to marine resources (e.g. overharvesting, destructive fishing practices, pollution, and a wide range of land-based threats) are increasing. In the mid-1950s, most Pacific Island governments began
introducing various forms of centralized coastal resource management, most typically through various restrictions (on gear, seasons, quotas, areas), which were stipulated as regulations under national fisheries laws. These various regulations have had limited success.

Although the new centralized management regimes were often supported by legal systems, there was little technical support or enforcement activity, especially in areas away from urban centers. Beginning in the early 1970s, both fisheries managers and the environmental community began using the concept of marine protected areas as management tools. Simultaneous efforts to encourage inshore fishers to diversify into deep-slope or offshore fisheries (bottomfish and/or tuna) and aquaculture, have had mixed results.

Although the security of village marine food resources is arguably the most important inshore fisheries issue in the region, there is some danger that its importance may be obscured to some degree by: (a) the quest for greater economic development of inshore fisheries resources; (b) emphasis on offshore fisheries; or (c) non-governmental organization priorities. In many countries, coastal resources that were undeveloped a few decades ago have often become fully exploited or overexploited. Presently, a major issue is the need for a transition from government-led development of (what are often) non-existent opportunities to the concept that fisheries departments and their officers are guardians of marine resources.

There is a need for a scientific basis for establishing quotas and other management measures for inshore resource. This must be reconciled with the reality that the capacity in fishery agencies to deal with the complexities of stock assessment is quite limited. Staff skills, work priorities, financial resources, and political will are often inadequate to enable even basic quantitative stock assessment models to have an effect on the fisheries management process. In this situation, there could be considerable value in developing simple “rules of thumb” for the important species - yield estimates based on existing studies. In the Pacific Islands region, rules of thumb were developed decades ago for three important fishery resources: deepwater snapper, trochus, and lobster. It is no coincidence that these are some of the best managed inshore fisheries in the region. Aquaculture has long been promoted in the region, both for subsistence and commercial purposes, and has involved a variety of species and donors. Assistance has been through bilateral programs (especially through Japan and Australia) and international agencies (including SPC, FAO, and the WorldFish Center). With the exceptions of pearl culture in the Cook Islands and seaweed culture in Kiribati, development efforts have not resulted in the establishment of major aquaculture industries. A variety of factors are responsible, including small domestic markets, competition with more efficient producers in Asia, and the development model used. Despite the low success rate, enthusiasm for aquaculture remains high among PIC fisheries agencies and their donors.

1.5 Potential for Increasing Benefits from Fisheries

It is difficult to make generalizations about fisheries and their potential benefits, and there are major differences between PICs in terms of their potential for tuna fisheries development and/or extracting access fees. Nevertheless, much of the potential in the region for expansion of benefits related to fisheries is likely to come from tuna resources. The major focus for interventions dealing with inshore fisheries in many PICs should be the preservation of existing benefits through enhanced management.

Accordingly, discussions of fisheries development and of increasing benefits in the remainder of this report are largely confined to tuna fisheries.
2. Benefits from Tuna Fisheries

2.1 Benefits in the Pacific Islands Region

At present, the main benefits from tuna fisheries include licenses fees, spin-offs from locally based fishing fleets and processing facilities, and modest local taxes.

All PICs receive fees for foreign fishing activities in their waters. In some PICs, access fees form a very large portion of government revenue, up to one-third for some countries in some years. One of the major issues regarding tuna fisheries in the region is the relative benefits of receiving access fees vs. pursuing domestic industrial development. In discussing this subject, the often heard “we receive a paltry 5% of the value of the catch in access fees” must be balanced with some significant failures in tuna industry development.

Nevertheless, consensus is growing that improved management of overexploited tuna resources, and more effective and flexible fleet management, could enhance the percentage of value added per metric tonne of landed tuna, creating an incremental value from which PICs could obtain additional income from access fees. The same is true of PIC participation in existing foreign tuna processing and marketing activities.

Measuring the various benefits from tuna fisheries is fundamental to the debate of access fees vs. local industrial development, but is not straightforward. The methodology for quantifying the benefits of access fees often differs between studies. In addition, the amounts involved in access arrangements are sometimes confidential, and reconciling amounts with receipts in national treasuries can be difficult. Noting these difficulties, a selection of studies estimating license fees include:

- **Gillett and Lightfoot (2001):** In 1999, the direct value of access to PICs was US$ 60.3 million, representing around 5–6% of the catch value at landing. Fees were largest in Kiribati (US$ 20 million) and the Federated States of Micronesia (US$ 15 million), where most of the tuna was caught.

- **Greenpeace (2006):** “Foreign fleets from Japan, Taiwan, China, Korea, the USA and the European Union (EU) take 90% of Pacific tuna, and pay Pacific Island countries a mere 5% of the US $2 billion annual profits (sic).”

- **Lewis (2004):** Access agreements result in “rigorously 5% for Japanese agreements, but higher for most others) and the types of agreements themselves (government-to-government, government-to-industry and government-to-individual company and/or association)”.

Within the region, access agreements vary by (a) structure (per vessel per trip systems, pre-negotiated lump sum payments, license fee plus post hoc catch value adjustment), (b) terms (quarterly, annual, annual with long-term rollover, three year, five year), (c) calculation of the fee basis (typically a percentage of the landed catch value), and (d) type (government-to-government, government-to-industry and government-to-individual company and/or association) (Lewis 2004).

With one exception, all access agreements are negotiated bilaterally. The one multi-lateral access arrangement (with the USA) results in considerably higher access payments (see Appendix 7), but the US Tuna Treaty’s financial transfers represent more than just payments for access. Where other factors are involved (e.g. additional goods and services provided in Japanese agreements), fees tend to be lower. There also appear to be governance issues associated with some fee levels.

A small change in the level of access fees can make a large difference in payments. According to FFA unpublished data, the delivered value of...
the 2006 tuna catch in the region by the seven most important DWFNs operating in the area was approximately US$ 2,255,063,000. A 1% increase in access fees, therefore, represents an additional US$ 22.5 million in access fees. Similarly, the decline of real tuna prices in US dollar terms between 1985 and 2006, and the decline of average value added per vessel in real terms, have reduced the fleet’s ability to pay for access fees. This trend has substantially reversed more recently.

There are several important considerations for increasing access fees:

- Regional solidarity is essential in raising levels of access fees in order to prevent DWFNs from playing PICs off against each other. In former years, especially the mid- to late-1980s, the region was a model of fisheries solidarity that other regions in the world strove to emulate. For various reasons (mainly political), this solidarity has decreased in recent years;

- The amount of access fees that vessels can afford to pay is closely related to the fishery’s profitability. Several studies (especially those sensitive to industry concerns) have indicated that PICs should cooperate with industry to create conditions that result in greater profits, thereby enabling vessels to pay more for access fees. Determining resource rent in tuna fisheries is important, but often overlooked, in ascertaining the possibility of increasing access fees; and

- Government subsidies have an important impact on the financial flows from access agreements, and changes in subsidy levels are subject to alteration for various reasons. Subsidies are quite clear in the case of the US Tuna Treaty (Appendix 7) and EU bilateral agreements, but the situation is less transparent in some of the Asian bilateral agreements.

With respect to quantifying tuna-related benefits other than access fees, a 2001 Asian Development Bank (ADB) report (Gillett et al. 2001) attempted to summarize the employment situation: “Total direct and indirect tuna-related employment is estimated to be between 21,000 and 31,000 people, which represents between five and eight percent of all wage employment in the region. The five tuna canneries in the region alone employ 5% of all formally employed women in the region” (albeit at quite modest wages).

In recognition of the lack of robust data, the World Bank in 2005 assisted FFA in using a limited number of economic indicators that would illustrate annual changes in the impact of the tuna industry on PIC economies (Van Santen 2005). Appendix 2 of this report contains a table from DevFish (2007) containing estimates of the contribution of tuna fishing to the GDP of each PIC in 1999 and 2004. Appendix 2 also gives inventories of tuna fishing vessels, tuna processing facilities, and tuna related employment in each PIC for the years 2002 and 2006.

Although post-harvest value-adding activities could represent substantial economic benefit (e.g. cannery employment), there have been no attempts to quantify the value added to the region’s total tuna catch, either for present levels or future potential. One reason is financial. Tuna canning facilities are closing across the globe, due to their failure to compete with a cartel of three worldwide industrial groups that dominates the global mature canned tuna market. Consequently, PIC investment in new canning facilities should not be recommended lightly solely for local employment creation. The structure of national accounts also distorts the impact of local processing. Most post-harvest fishing activities are counted as value added to other sectors, such as manufacturing, in GDP calculations.

Aid is an important benefit from tuna resources. Van Santen and Muller (2000) state a number of access agreements that have formal and informal arrangements for aid and in-kind payments; other DWFNs provide aid projects on top of regular license fee payments. Although aid and in-kind payments fluctuate widely between agreements — some cannot even be conclusively linked to access fee payments — they appear important for many countries. For
the period 1990–2000, Solomon Islands received 73% of its fisheries department development budget in the form of grants; at least 50% of the grants involved tuna-related infrastructure and technical assistance. While aid and in-kind payments add indirectly to fee income, and as such clearly benefit PICs, aid often reduces the transparency of an analysis of the real benefits and costs of access agreements. Ad hoc aid programs, sometimes linked indirectly to access agreements, may not fully reflect the priorities and objectives of national development strategies of the economy as a whole. The record of a number of these projects suggests that aid and in-kind payments may have provided substantially less real benefits than their total costs may suggest, while using scarce local administrative and financial resources for implementation.

2.2 What happens in the rest of the world? The example of Mauritania

Mauritania is the largest recipient in the world of financial compensation from sovereign fisheries agreements. Its large fish resources comprise several high value species that are exploited by a modest national industrial fleet (often foreign leased vessels) and many foreign industrial vessels licensed under international fisheries agreements (e.g. EU, Japan) or directly between owners and the government.

Mauritania has 40 years of experience in managing the foreign fleet and integrating foreign fisheries into its national economy. It has also been able to exploit concerns of the EU about Mauritania’s political stability in obtaining direct and indirect benefits from its marine resources, notably in its negotiations of EU fisheries agreements. While efforts to integrate fisheries into the domestic economy are still modest — mainly involving artisanal fisheries and national fisheries on cephalopods — the country has been effective in extracting license fee benefits from foreign fleets. The figures below reflect specific national circumstances, but they also illustrate the scale of potential domestic benefits that countries can extract from foreign fisheries.

Public sector income from foreign fishing fleets that do not land fish in the country (income data preliminary 2006) totaled US$ 143 million, of a total value of the foreign catch (catch averages 2002–2005) of US$ 318 million. Annual payments by the EU and other fleets comprise:

- A lump sum annual “financial contribution” by the EU of € 82 million (US$ 115 million);
- License fees, currently estimated at US$ 28 million; and
- Unknown indirect aid support (e.g. from Japan, China, EU).

Mauritania currently receives about 45% of the gross value of the reported foreign catch. Excluding the EU lump sum “financial contribution”, the foreign fleets pay about 8.8% of the catch value for their licenses, plus some indirect aid support. The national (leased) fleet pays several direct and indirect taxes that range between 3% (cephalopod freezer trawlers) and 11% (demersal freezer trawlers) of the landed catch value.
3. Tuna Fisheries Development

3.1 The General Picture

An ADB/FFA report (Gillett et al. 2001) states:

*In the future Pacific Island climate of continued economic stagnation, very high population growth, severe economic shocks, and massive unemployment, it is inevitable that the presently under-exploited tuna resources of the region will assume an importance much greater than at present. Quite simply, in most countries there are few, if any, alternatives to tuna.*

PICs have used several different strategies for developing the region’s tuna resources. Table 1 is a non-exhaustive listing of the development strategies associated with various tuna fishing techniques.

**Table 1: Tuna Fishing Techniques and Typical Development Strategies**

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<th>Techniques</th>
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<th>Development strategies</th>
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| Purse seine        | • Entice vessels to base locally  
|                    | • Extract higher levels of access fees  
|                    | • Use access to leverage other benefits  
|                    | • Supply crew  
|                    | • Sell supplies to foreign vessels  | • Promote the processing of more of the catch within the region: canneries and loining operations  
|                    |                                                   | • Benefit from transshipment  
|                    |                                                   | • Secure preferential access to markets for canned tuna  |
| Longline           | • Promote local ownership  
|                    | • Entice vessels to base locally  
|                    | • Extract higher levels of access fees  
|                    | • Use access to leverage other benefits  
|                    | • Supply crew  | • Air freight fresh tuna to Japan and USA.  
|                    |                                                   | • Air freight B-grade frozen tuna to USA/EU.  |
|                    |                                                   | • Supply C-grade tuna to local markets  
|                    |                                                   | • Improve fish handling  
|                    |                                                   | • Require local sales (tuna and bycatch)  
|                    |                                                   | • Value adding to bycatch  |
| Pole-and-line [Solomon Islands] | • Take advantage of low wage rates and utilize labor-intensive techniques to supply fish and maintain cannery operations  | • Use concept of “environmentally friendly” and a fishing technique that produces high quality products to obtain higher prices in certain markets  |

Foreign purse-seine vessels are catching an increasing share of the region’s tuna. Unfortunately, Pacific Island ownership of purse-seine vessels has generally been disastrous. The lack of capital within the private sector has meant that past ventures have mainly involved government fishing companies, few of which have ever had a profitable year. Aside from the problems associated with governments owning competitive businesses, the difficulties of operating purse-seine vessels include contending with highly variable fish prices (which in real terms, until recently, have been declining), high entry costs, the boom and bust nature of the business, the need for outside expertise at almost every stage of the venture, and the lack of economies of scale, which often surpass the advantages of resource ownership and resource proximity.

Other fisheries-related developments in which PICs are involved are canneries and loining operations (the labor intensive component of canning). The two American Samoan canneries (owned by two of the three companies that dominate the global canned tuna market) receive
fish off-loaded from purse-seine vessels and Asian longliners, as well as fish brought to American Samoa by refrigerated carrier from other places in the Pacific and even from other oceans. Other tuna canneries have been established in Fiji, Solomon Islands, and two in PNG (associated with Philippine interests). Because canneries employ relatively large numbers of people, governments are often quite interested in having a facility, despite the record tuna cannery closures in other parts of the world.

Much of the recent activity in tuna fisheries in the region has focused on developing local fleets of small longline vessels that specialize in fresh fish for air freighting to Japan, USA, and the EU. Success is largely related to Japanese tuna prices and catch rates, both of which show considerable variability. In many PICs, further longline development is limited by resource considerations and/or port infrastructure and air freight capacity. A recent FFA study (Philipson 2006) states that the key element in increasing returns from the longline fishery is to associate it with the development of large-scale, commercially viable onshore value added processing, which requires local labor and targets non-cartel fresh fish markets.

### 3.2 Specific Studies

FFA carries out a large number of studies each year. In the 10-year period from 1990–1999, more than 1,000 technical reports were produced by FFA staff and consultants. Other agencies have also reported on PIC tuna fisheries: SPC, FAO, AusAID, Pacific Islands Forum Secretariat (PIFS), Australian National University, ADB, University of the South Pacific, and others. Some of the most important papers may not be in the public domain. Table 2 compares three studies of tuna industry development.

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<tr>
<td><strong>Government ownership</strong></td>
<td>Direct involvement of government in tuna businesses deterring the private sector, protected economies, government-oriented business interests</td>
<td>Widespread belief among fisheries officials that the role of government is to enable private sector development, although officials without knowledge of the history of failure of state-owned enterprises may still favor them</td>
<td>Most interviewees with a fisheries background believed state ownership of vessels or other means of direct involvement in tuna fisheries, was a bad idea, but some influential officials still call for state ownership of tuna enterprises</td>
</tr>
<tr>
<td><strong>Deterrents to private sector involvement</strong></td>
<td>High risk, capital-intensive nature of tuna fishing industry, difficult access to markets, PICs high cost production environments</td>
<td>Tuna fishing declining in profitability since 1970s, lack of trading/marketing skills a problem, PICs high cost production environments</td>
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<tr>
<td><strong>Transport to markets</strong></td>
<td>Inadequate and inadequately managed sea and air freight infrastructure</td>
<td>Air freight availability problems, inefficient harbor management</td>
<td>Diseconomies of scale for air and sea freight in most locations</td>
</tr>
<tr>
<td><strong>Credit</strong></td>
<td>Lack of commercial credit</td>
<td>Credit availability problems</td>
<td>Credit available to those with a good track record</td>
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<tr>
<td><strong>Investment environment</strong></td>
<td>Economies unstable, industry and investment policies unsound, unfriendly environment for foreign investors</td>
<td>Policies unstable, taxation difficult, administration expensive and prone to blockage, poor government–industry dialogue, low attractiveness to investors</td>
<td>General economic environment and policy framework not conducive to industrial development. Lack of consultation with industry, between government departments, with other stakeholders. Development policies leading to over-</td>
</tr>
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</table>
In addition to the three studies summarized, Appendix 6 provides an annotated list of many important reports that discuss tuna resources in the region, including those focused on fisheries development efforts.

Those reports that deal with fisheries development, largely chronicle fisheries development efforts, and identify constraints and their mitigation, especially policy changes to encourage private sector investment. The conclusions of the studies are wide ranging, but features common to many reports include:

- The futility of government-led industry development, especially government-owned national tuna fishing companies;
- Success in the tuna industry depends on a company possessing a number of important attributes, including a complex of vertically integrated systems (linking catching with processing and marketing); efficient vessel operations and maintenance; highly developed fishing skills; sound and timely fish preservation and fish grading; regular air scheduling for transshipment of fresh tuna; ability to survive in the characteristically boom and bust environment; and strong affiliation with key foreign markets;
- The need for government policies, and transparent and effective resource management measures that are conducive to long-term private investment in the tuna industry;
- Foreign sources of capital and technological expertise is likely to be required for many years to come;
- Tuna fisheries development is intimately related to the rules and requirements of international and regional trade agreements;
- Poor governance in the fisheries sector (e.g. lack of management capacity, administrative bottlenecks, corruption) seriously constrains the development of a thriving tuna industry; and
- The opportunities presented by PICs sharing in incremental value adding (from more effective resource and fleet management, and domestic and foreign processing and marketing) are growing in importance.

Although there has been notable progress in tuna fisheries development in the region in the last two decades (e.g. establishment of locally based longline fleets), it is generally recognized that the benefits are considerably less than the potential, despite the large number of studies and associated recommendations. This following sentiment was reflected in a recent communiqué issued by the 37th meeting of the Pacific Islands Forum (heads of state/government):

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<tr>
<td>Skills level</td>
<td>Human resources not competitive on cost/productivity, inadequate pools of skills in some areas (e.g. technical, business)</td>
<td>Low levels entrepreneurial development and industrial fisheries skills</td>
<td>Lack of business experience a problem for Indigenous fisheries development, lack of human resource capacities in private and public sectors</td>
</tr>
<tr>
<td>Government policies in fisheries sector</td>
<td>Policies unclear and inconsistent</td>
<td>Stability of policies affecting tuna industries</td>
<td>Overarching need for strong, sound domestic policies to promote sustainable development and underpin regional and multilateral negotiating positions</td>
</tr>
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</table>

Source: modified from Barclay and Cartwright (2006)
…COGNISANT of the significant economic opportunities which the regional fisheries resource offers to all our members, and of the comparatively low returns on the resource being achieved by countries in the region….

This may suggest the need to “think outside the box”, and consider a very different approach to the well-known physical, institutional and political constraints to tuna fisheries development. Such an approach may focus on increasing the fleet’s value added, through better coordinated management of the fisheries and resources, and by facilitating the sharing in foreign processing and marketing activities by PICs. The latter may be possible through the use of modern financial vehicles and instruments, such as one or more sovereign or private equity funds, that would enable public and private interests in PICs to financially participate in DWFN’s ongoing or future catching activities and those profitable downstream aspects of the tuna industry that are currently difficult to break into (e.g. processing and marketing of high value tuna in Japan, USA). Such participation may possibly be linked to priority allocation of future fishing licenses, fishing days, or — in the more distant future — the creation of a quota regime. Quotas granted for long periods may attain a high value. A quota regime could be designed to bring maximum benefits to PICs. In the future, a sovereign PIC fund or funds might become involved in merger and acquisition activities and even privatizations to enhance PICs’ share of the regional tuna industry, supported by a preferential quota allocation regime. This would require parallel efforts to assess how the political implications and constraints of such an approach could be overcome.

3.3 Existing and Potential Role of the Private Sector

A major feature of past tuna fishery development efforts in the region was the prominent role of governments. A major ADB project in the early 1990s chronicled PIC government involvement in the tuna industry. The report of the study (Pollard 1995) stated:

Two themes or issues were common: (a) The excessive and direct involvement of government in domestic industry to the detriment of sustainable locally based industrialization; and (b) The protective nature of domestic economies, resources, and business interests with economies oriented to serving government rather than government serving wealth-creating locally based industry.

Ten years later, the situation had changed remarkably. The subject of existing and future roles of the government and private sector in the development of tuna industries in the Pacific Islands was the subject of a chapter in an FFA report (Gillett 2003):

Learning from past difficulties, most of the fisheries officers encountered expressed the sentiment that the government should refrain from commercial involvement and focus on improving the policy environment. With respect to actual commitment, it appears that in many countries, efforts have largely changed from promoting state enterprises to encouraging domestic private sector fishing and, secondly, foreign involvement in other aspects of the tuna industry. This evolution in attitudes appears quite healthy and may be one of the major factors responsible for the increasing national prominence of domestic tuna industries in the region. With that positive background, some difficult issues associated with direct government involvement in the tuna industry remain:

(a) What should be done with government initiatives that have been set in motion years ago?

(b) If it has been shown that development in the tuna industry should be private sector driven,
what is to be done in countries where the private sector is virtually non-existent?

It is generally recognized in the region that the major role of government in promoting tuna industry development should be improving the policy and sector management environment. Translating this into improved policies still requires considerable effort; there is internal resistance in some countries to limiting the government’s role to facilitation.

3.4 IUU Fishing in the Region

The use of the term IUU fishing (illegal, unreported, and unregulated) in the region is often confined to offshore fishing, and mainly by foreign fishing vessels — in practice, mainly tuna longliners.

Much publicity has been generated on the subject of IUU tuna fishing in the Pacific Islands, but the actual amount that occurs is open to speculation. Greenpeace (2006) states that, “pirates steal more than 4 times what the region earns in licenses”, without stating the methods used to arrive at the estimate. A report by FFA (Richards 2001) uses the trends in its violations and prosecutions database to conclude that, “While the number of reported violations has fluctuated with the rise and fall of fishing activity in the western and central Pacific Ocean region, it appears that the compliance environment that has been created has reduced the illegal activities of fishing vessels in the EEZ of FFA member countries.” It also appears that the level of IUU fishing has remained relatively low and constant. Few people would argue with Doulman (2007) who reports that, “it is extremely difficult to estimate quantity and value of IUU fishing in the region”. Efforts are being made to develop a methodology to make such an estimate.

At the third regular session of the Technical and Compliance Committee of the Western and Central Pacific Fisheries Commission (WCPFC) in October 2007, a provisional IUU vessel list was compiled, which included six tuna vessels. From the above it can be seen that there is a huge range of views on the subject of IUU tuna fishing in the Pacific Islands region. Despite the supposed impact of IUU fishing to the region, no analysis appears to have been carried on its possible economic impact. What is known of the value of the IUU catch, how much that catch detracts from the value of the legitimate, and ultimately, the most appropriate and/or cost-effective level of MCS focused on the IUU fishing.

3.5 Adding Value

Much work has been done in exploring how domestic value added could be increased, especially for the production from small, mid-scale tuna fisheries. The major constraint in many such attempts appears to be high labor and transport costs, and lack of economy of scale. There are some exceptions, however: an operation in Fiji processes tuna and by-catch (smoking, drying, flavoring) for specialty markets. Attempts at replicating that success elsewhere (e.g. Tuvalu) have failed for a variety of reasons, not the least of which are the general difficulties faced by Pacific Islanders operating a competitive business regardless of sector, and the complexities of international marketing of fishery products.

A recent FFA report (Philipson 2006) commented on tuna longlining and value adding in the Pacific Islands:

National longline fleets were largely established when the conventional model was highly profitable — this is no longer the case. Although the highest returns can be made from exporting whole fresh sashimi grade tuna, the economics of the industry have changed over the last ten years or so, and it is often only profitable to export a small proportion of the total catch in this form. Companies that can process the remainder of the catch into value added products are more profitable, and many small companies that relied on the conventional model are struggling to survive.
Currently, FFA is sponsoring a study to examine how more of the purse-seine catch could be processed within the region. This typically would involve canning or loining. Because of the large number of people employed by canning and/or loining operations, governments are quite interested in having such a facility. However, the following points should be considered:

- Although a large number of tuna canny feasibility studies have been carried out in the region, few are optimistic;
- Promises of future canneries (or of closing down existing ones) is a ploy often used in the region by big tuna companies during access and wage negotiations;
- The two smallest canneries in the region (Pafco in Fiji and Soltai in the Solomon Islands) have had few, if any, profitable years; and
- There are few comparative advantages of a tuna cannery located in a PIC, other than preferential market access (e.g. canneries in American Samoa enjoy preference in the US market; those in PNG in the EU).

3.6 Regional Institutions Involved in Fisheries

Fisheries cooperation, fostered by regional organizations, is a prominent feature of the Pacific Islands. The region has three organizations with major involvement in fisheries matters and several others with peripheral involvement:

- The Secretariat of the Pacific Community (SPC), headquarters in New Caledonia, has a fisheries program that is primarily concerned with scientific research on tuna fisheries and with research, development, and management of coastal fisheries for 22 PICs;
- The Pacific Islands Forum Fisheries Agency (FFA), headquarters in the Solomon Islands, is concerned primarily with economic and policy aspects of the offshore tuna fisheries in 14 independent PICs, plus Australia and New Zealand. FFA has achieved a high degree of success in coordination leading to regional and international treaties; and
- In addition to these two regional organizations, other organizations with fisheries involvement include the Secretariat of the Pacific Regional Environment Programme (SPREP), University of the South Pacific (USP), Pacific Islands Applied Geoscience Commission (SOPAC), and PIFS.

Few fisheries initiatives in the region are implemented independently of the regional organizations. To some degree, both FFA and SPC prefer to offer donors a menu of projects (previously endorsed by their members) from which the donor can choose, rather than be associated with a project designed by a donor that is seeking a regional implementing agency.

For this study, the concept of identifying major issues constraining Pacific Island countries from obtaining optimal benefits from their fishery resources was discussed with senior officials of SPC and FFA.

- A session at the SPC Conference in Apia in November 2007 briefly looked at the “future of fish” in the Pacific Islands. According to the Director of SPC’s Marine Resources Division, some political support was obtained for a joint FFA/SPC-sponsored task force and think tank that would work during early 2008 on planning for the long-term future of fisheries and aquaculture in the region. SPC’s Marine Resources Director indicated that the World Bank might be interested in joining, supporting, or sponsoring this task force, or in implementing its recommendations; and
- FFA’s Deputy Director-General felt that to maximize economic gains from tuna fisheries, a number of innovative development and value adding strategies should be pursued. These include: the application of rights-based fisheries management systems, development of access agreements that are more transparent and less susceptible to political intervention, collaborative negotiation of access agreements by member countries, effective negotiations that are not compromised by
the interests of DWFN bureaucrats and fishing companies, avoiding negotiations that trade aid for access, assuring that fishery development infrastructure occurs not on DWFN soil but in Pacific Island countries and territories, and considering all sub-sectors, including recreational fishing and ecotourism, in an integrated way. The Pacific Island Forum is a meeting of PIC heads of state and government, plus Australia and New Zealand. The 37th Forum meeting took place in Tonga in mid-October 2007. The report of that meeting gave special and unprecedented prominence to fisheries. Excerpts from that report are given in Appendix 9.

## Table 3: Some Attributes of Pacific Island Regional Organizations Involved in Fisheries

<table>
<thead>
<tr>
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<th>FFA</th>
<th>SPC</th>
<th>Other regional organizations with fishery involvement</th>
<th>Comment</th>
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<tbody>
<tr>
<td><strong>Main area of emphasis</strong></td>
<td>Management of tuna fisheries and increasing benefits to PICs from tuna fishing activities</td>
<td>Most aspects of coastal fisheries and scientific research on tuna</td>
<td>SPREP – environmental aspects of fisheries; SOPAC – non-living resources and remote sensing; USP – Marine Studies Program involved in wide range of training; PIFS – Major political initiatives, some natural resource and economic</td>
<td>Activities of regional organizations are coordinated to some degree by the Council of Regional Organizations in the Pacific (CROP)</td>
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<td></td>
<td>FFA was originally involved with all fisheries, but in the early 1990s, refocused almost entirely on tuna</td>
<td>Fisheries are only one aspect of SPC’s work program, which also covers issues such as health, demography, and agriculture</td>
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<tr>
<td><strong>Inter-regional relationships</strong></td>
<td>The FFA/SPC relationship has had ups and downs over the years. Disagreements in the early 1990s were followed by tremendous improvement in the mid-late 1990s. An annual colloquium has helped, but some issues have recently emerged. The concept of a joint FFA/SPC-sponsored task force and think tank on the long-term future of fisheries and aquaculture in the region was discussed at the SPC Conference in Apia in November 2007</td>
<td>In theory, all regional organizations are under the umbrella of PIFS. There is a large recent initiative to rationalize the regional organization relationships</td>
<td>CROP has a Marine Sector Working Group that is quite active.</td>
<td></td>
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<tr>
<td><strong>Main strengths</strong></td>
<td>Direct contact with its governing body many times per year results in a high degree of accountability. Mandate of tight focus on tuna eliminates considerable dissipation of effort</td>
<td>There is considerable staff continuity. The Oceanic Fisheries Programme often sets the standard for tuna research in the world</td>
<td>Because PIFS is under the senior regional leaders, it is considered the premier regional organization.</td>
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<tr>
<td><strong>Membership</strong></td>
<td>Australia and New Zealand, plus the following PICs: Cook Islands, FSM, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, PNG, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu</td>
<td>Includes the major metropolitan countries, and all Pacific Island countries and territories. The most inclusive of any regional organization</td>
<td>SOPAC: same as FFA plus American Samoa, French Polynesia, New Caledonia; USP: Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu SPREP: 21 Pacific Island countries and territories, plus Australia, France, New Zealand, and USA; PIFS: same as FFA</td>
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4. Key Constraints and Mitigating Factors

Identifying and mitigating the key constraints to fisheries development in the Pacific Islands region have formed the core of the fisheries programs of SPC and FFA for decades, indicating the complexity of the situation and of the difficulty in finding solutions that can be implemented. In this report, many of the constraints to PICs receiving greater benefits from fisheries can be placed into two categories: (a) governance and (b) small countries and/or industries struggling with powerful countries and powerful economic interests (“leveling the playing field”). The measures suggested for their mitigation are mostly conventional, and are similar to approaches that have been attempted (with varying degrees of success) in recent history, although suggestions for a different approach are also made.

4.1 Governance

**Poor national fisheries institutions.** In general, government fisheries agencies are far less effective at present than they were two decades ago. Several reasons account for this and there are large differences between countries. Factors include poor institutional structures that result in low accountability to stakeholders, corruption, poorly trained staff, and budgetary processes that favor staffing levels over activities. Many of the present difficulties in the fisheries sector can be traced directly to ineffective fisheries departments, while the mitigation of other problems is constrained by inactivity of departments. Low levels of professionalism are a major issue. This problem has been recognized by donors that are active in the fisheries sector. Many millions have been spent by Australia, ADB, FAO and others on improving the governance within the fisheries sector in many PICs, including PNG, FSM, Solomon Islands, Samoa, Tonga, and the Cook Islands. More assistance is planned for the future, but there is some question as to its effectiveness and sustainability. Weak national institutions also detract from the effectiveness of regional and international organizations, such as FFA, SPC, and WCPFC. Mitigating actions include:

- Consolidating experiences from the many institutional enhancement projects that have been carried out in PIC fisheries departments and on the regional level, and link these efforts to ongoing governance programs in and outside the sector at national and regional levels. Bring in experience from other regions;
- Enhancing the ability of fishery stakeholders to influence fisheries department policies and activities and to promote accountability;
- Enhancing the skills of fishery managers (see below); and
- Creating evaluation and oversight mechanisms to assure greater adherence to policies and legislation; for example, bring the results of governance improvement work and evaluations to the attention of stakeholders, high-level authorities, and the general public.

The main beneficiaries of such actions would be commercial fishing companies, village fishers, national treasuries, and regional organizations.

**Corruption in fisheries.** In recent years there has been a noticeable rise in fisheries-related corruption in the region, as judged by complaints from the private sector, court convictions, discipline by public service commissions, and observations by knowledgeable individuals. Although there is ongoing work on fisheries governance (e.g. by Australia and FFA), this particular subject appears “too hot to handle” by the regional organizations and even some bilateral agencies. The importance of this subject was often mooted by ADB, which took little, if any, action before reducing its involvement in the fisheries sector. Corruption is a major issue in fisheries governance, and many of the actions identified
above for improving fisheries institutions also apply to decreasing corruption. Mitigating actions include:

- Identifying simple generic measures for deterring corruption that is specific to the fisheries sector;
- Estimating and publicizing the cost to the national and regional economy of corrupt activity in the fisheries sector; and
- Establishing links between national and international anti-corruption activities and those at the fisheries level.

The main beneficiaries of such actions would be commercial fishing companies, village fishers, and national treasuries.

**Lack of skilled fishery managers.** In many smaller PICs, fishery agencies do not possess staff with skills needed to effectively manage fisheries. For example, most PICs required outside assistance to formulate national plans of action for IUU fishing. In addition, the regional university does not recognize the large and growing need for fisheries managers. Mitigating actions include:

- Creating an awareness and reviewing the curriculum of USP and other regional institutions in conjunction with a survey of demand from government fishery agencies; and
- Arranging a program to finance fisheries management students and mid-career managers.

The main beneficiaries of such actions would be new fisheries officers, fishery departments, tertiary institutions, and fishers.

**Regional solidarity in fisheries.** In previous decades, the region was noted for its solidarity in fisheries matters, especially in dealing with DWFNs. For various reasons, this solidarity has decreased (see following section on “Levelling the playing field”). Some countries are departing from regional agreements and the potential for regional solidarity in future negotiations has decreased. The regional organizations have not been in a position to scold their members when solidarity has broken down. Mitigating actions include:

- Studying the economic and political costs of eroding regional solidarity in fisheries, giving examples of where it has occurred, and using the media and SPC/FFA to highlight the issues;
- Encouraging the concept of accountability in regional agreements, including pre-agreed mechanisms for dealing with non-compliance; and
- Regular consultation between heads of regional organizations and senior leaders of the region on the status of regional solidarity in fisheries.

The main beneficiaries of such actions would be national treasuries and regional organizations.

**Government policies for tuna industry development.** As mentioned in Section 3.3, it is generally recognized in the region that the major role of government in promoting tuna industry development should be improving fisheries management policies. This concept, however, has not been fully implemented in most PICs. Mitigating actions include:

- Carrying out national reviews of private sector investment conditions, similar to past general exercises of the Foreign Investment Advisory Service/International Finance Corporation, but focusing on the fisheries sector, using both investment and fisheries expertise;
- Exploring potential benefits of improved resource and sector management, assessing multiple scenarios of resource and fleet management, and improvements in the framework for private investment; and
- Developing a group of donors that would jointly support a rational private sector investment program, possibly in conjunction with the negotiation and implementation of future fisheries agreements and adjustments of the resource management system.
The main beneficiaries of such actions would be fishing companies and national treasuries.

**Weak governance in the inshore fisheries sub-sector.** In many countries, fishery policies, fisheries department activities, and staff experience appear to be “stuck in the 1960s”. There needs to be a transition from government-led development of what are often non-existent opportunities, to the concept that fisheries departments, fisheries officers, and communities are guardians of marine resources. A related matter concerns village food supplies. Although the security of village marine food resources is arguably the greatest issue with respect to inshore fisheries in the region, there is some danger that its importance may be obscured by the quest for greater economic development. The latter is often attempted through expensive projects that are ineffective. Mitigating actions include:

- Promoting policies or management plans against which the actions of fishery departments with regards to inshore fisheries can be measured (similar to what was done in offshore fisheries with the tuna management plan initiative of FFA);
- Subjecting inshore development schemes to objective economic scrutiny by enhancing the ability of regional organizations to provide economic advice on small-scale fisheries; and
- Enhancing skills of fishery managers.

The main beneficiaries of such actions would be village fishers, communities, fishery departments, and national treasuries.

**Do the studies have an impact?** There have been many studies examining how to obtain greater benefits from tuna resources in the region. The sheer number of studies may obscure three important difficulties: (a) they are frequently not read by decision makers or those advising on decisions; (b) many studies have focused on a narrow topic and not been linked to overall national strategies; (c) many studies fail to assess the financial and political benefits and costs of sector decisions. Mitigating actions include:

- Enhancing the skills of fishery managers and improving national fishery institutions (see above);
- Using existing regional institutions to expand efforts to regularly reach and inform senior fisheries managers, public decision makers, politicians and private sector representatives about the findings and recommendations of past studies and discuss what follow-up measures could be envisaged and realistically implemented; and
- Supporting fisheries planning by providing independent advice that would analyze, consolidate and enhance existing national fisheries development and management strategies.

The main beneficiaries of such actions would be fishers, fishery departments, and national treasuries.

4.2 **“Leveling the playing field”**

**WCPFC effectiveness.** The new Western and Central Pacific Fisheries Commission represents many years of work to provide the framework for conserving regional tuna resources; the sustainability of the region’s tuna resources is largely reliant on the success of the Commission. The effectiveness of the new commission is being undermined by some DWFNs. In recent Commission meetings, most efforts to initiate management or even monitoring are being derailed or delayed. According to some observers, one reason is the relatively large influence of certain segments of the DWFN fishing industry on national governments. WCPFC suffers from institutional imbalances that make it difficult for it to fairly represent the interests of both DWFNs and PICs. The tension between DWFN interests and those of PICs is manifested within WCPFC. Mitigating actions include:

- Assessing how regional agencies could become more effective as a group in channeling the scientific, economic, and political arguments surrounding tuna sector management, including issues of regional
solidarity (see following section);

- Reviewing the current obstructionist policies of some DWFNs, as part of the above assessment, and defining a political and economic common ground; and

- Analyzing the costs, benefits and difficulties of the PICs attempting to implement management measures independent of the WCPFC.

The main beneficiaries of such actions would be WCPFC and PICs.

**Eroding regional solidarity.** PICs, which include some of the world’s smallest countries, can effectively deal with more powerful countries and powerful economic interests only through regional solidarity. Although the region was a model of cohesiveness in fisheries issues in past decades, this solidarity has diminished in recent years. Various reasons account for this, including poor governance, but also the fact that some PICs have much greater tuna resources than others, and hence have different economic interests. Solidarity does not occur spontaneously, but requires a degree of leadership that may be incompatible with the concepts of WCPFC and the narrower secretariat role of FFA. Mitigating actions include:

- Assessing the economic and political costs of eroding regional solidarity in fisheries, giving examples of where it has occurred, and how it may be avoided in the future;

- Encouraging the concept of accountability in regional agreements, including pre-agreed mechanisms for dealing with non-compliance; and

- Developing a regional sector management strategy that enables the resource poorest PIC to equitably benefit from regional tuna resources by enhancing PIC benefits across the board.

The main beneficiaries of such actions would be national treasuries and regional organizations.

**Countries not “taking advantage of their advantage” when dealing with DWFNs.** Mauritania has demonstrated the potential advantages of including political and market intelligence in the process of negotiating fisheries agreements, even with the exceedingly well-prepared EU. PICs collectively control a substantial amount of the world’s tuna. This bargaining power is diluted by various internal forces, including foreign aid, corruption, and weak national fisheries institutions. However, PICs have rarely seriously analyzed the strengths and weaknesses of DWFNs, and how their positions could be manipulated. By not using their advantage, PICs are in a much weaker position for extracting license fees, encouraging onshore investment, and deriving other benefits. Mitigating action is:

- Developing short- and long-term negotiation strategies to maximize future PIC benefits from licensing and investment, in large part by: (a) better exploiting their sovereign ownership, and the current and potential value of their tuna stocks; (b) better understanding the needs and interests of different groups that influence and participate in the negotiation process, and assess which groups would be most amenable to jointly developing and contributing to PIC sector strategies; (c) developing strategies to influence and cooperate with those groups in DWFNs, including the USA and EU; (d) giving priority access to those commercial and other interest groups that best service PIC interests; and (e) better using market intelligence in defining licensing arrangements and linked foreign investment in domestic value added activities.

The main beneficiaries of such action would be national treasuries and regional organizations.

**Market access.** Access to the world’s lucrative tuna markets is often constrained by food safety issues (i.e. HACCP — Hazard Analysis and Critical Control Point), the requirements of trade agreements, and logistical considerations. In addition, foreign markets are often dominated by a limited number of large interests that are able to constrain access by others. More fundamental approaches to address the access issue are discussed below. With regards to **sanitary**
requirements, only PNG is now compliant with EU regulations. Solomon Islands and Fiji will soon be excluded from the important EU market, and countries aspiring to export to the EU (e.g. Tonga, Samoa, and the Marshall Islands) are likely to be prevented from doing so. Some of the most important logistical considerations in market access concern inadequate airports and airline policies. Many countries do not have adequate size airports for economical air-freighting and most airlines that service the region are likely to introduce aircraft that have less air cargo capacity. More fundamentally, the recent increases in energy prices will substantially alter the traditional fishing, processing and marketing paradigm of tuna products, as energy intensive catching and long-distance airfreight based marketing activities become increasingly unprofitable. Mitigating actions include:

- Promoting more effective national fisheries institutions in order to seriously address the blockages created by not addressing sanitary requirements; and
- Revisiting and updating the FFA airfreighting study in 2000, including regional cooperation in airfreighting of fish.

The main beneficiaries of such actions would be fishing companies and post-harvest fisheries workers.

The appropriate role for monitoring, control, and surveillance (MCS). There is much publicity and activity related to IUU fishing activities and their eradication (Section 3.4 above). Despite its importance, however, no examination has been made of the economic impacts of IUU activities. There is no rigorous factual basis to recent IUU estimates, and little information exists on the cost of IUU fishing, the cost-effectiveness of current MCS activities, or the appropriate level of MCS in the future. If IUU fishing has little economic impact (i.e. does not detract substantially from legal catches), then spending enormous amounts of money on MCS may not be warranted. Knowing the impact of IUU may help to determine the appropriate level of expenditure on MCS activity. Mitigating actions include:

- Separating facts from fiction by documenting precisely what is known and unknown about IUU fishing in the Pacific Islands region; and
- Carrying out analysis of the economic impact of various levels of IUU fishing and relating this to appropriate levels of MCS activity, bearing in mind the aid and non-fisheries components.

The main beneficiaries of these actions would be fishery departments, national defense agencies, and national treasuries.

4.3 New approaches

The mitigation measures identified above are in many respects conventional, and are similar to approaches that have been attempted — sometimes with mediocre results — in the last two decades. This lack of success could indicate that a fundamental change of strategy may be required to improve PIC benefits from some of their fisheries, or at least such a change is worthy of consideration. The recent increase in energy costs also suggests that the tuna fishery and marketing “model” that has historically grown in the Pacific region over the past 60 years will require a fundamental rethink. The traditional paradigm of energy intensive forms of catching tuna — being processed in low value canned products targeting mature protected markets — is unlikely to be financially sustainable in the future as energy prices remain high and protected markets liberalize, notably in the EU. Energy intensive fisheries that target tuna for direct human consumption and are marketed through long-distance air freight can only continue if retail prices demonstrate the same elasticity as (other) luxury goods, which is far from certain. Accordingly, some suggestions for a more radical approach are offered. New approaches may circumvent traditional institutional and political constraints and/or may actively aim to address them.

The following ideas, which have not been discussed with any stakeholder groups, deserve attention.
Use of modern financial vehicles and instruments. Rapid development of financial products and processes in the developed world has not yet affected the global tuna industry. It may be worthwhile to explore the potential for and design of financial vehicles and instruments that would enable public and private interests in PICs to financially participate in DWFN’s ongoing or future tuna catching activities, and those profitable downstream aspects of the tuna industry that are currently difficult to break into (e.g. processing and marketing of high-value tuna in Japan and USA). The potential benefits of using these vehicles — such as private equity and sovereign funds — to enable PIC investment in local and foreign corporations may be substantially enhanced by linking such financial participation to priority allocation of future fishing licenses, or (in the more distant future) the creation of a quota regime. Quotas granted for long periods may attain a high value. A quota regime could be designed to bring maximum benefits to PICs, using financial approaches that would reflect quota values and/or investments in companies that would benefit most from quotas. In the future, a sovereign PIC fund or funds might become involved in merger and acquisition activities and even privatizations to enhance PICs’ share of the regional tuna industry, supported by a preferential quota allocation regime. This would require parallel efforts to assess how the political implications and constraints of such an approach could be overcome. These tools may also be used in the looming process to restructure the regional tuna industry (catching, processing and marketing) to mitigate the effects of rapidly rising energy prices and changes in major world markets as a result of significant exchange rate movements, differences in relative income growth and changing consumer demand patterns.

Sector restructuring. Fundamental solutions to mitigate the effects of high energy prices, major changes in exchange rates, relative economic growth between Asia, Europe and the USA, and changes in consumer demand fall in four categories: (a) increasing catches per unit of fishing effort, by substantially increasing the tuna biomass and reduce the total fishing efforts on all species in the (western) Pacific Ocean; (b) reducing the use of fishing gear, processing methods and distribution systems that require high energy inputs per ton of final retail product, and introduce and expand less energy intensive methods; (c) improving the efficiency of the fish landings system, processing and transport distribution to limit “transfer” costs; and (d) organizing the industry to focus on products and markets where tuna from the Pacific Ocean — which dominates global supplies — can best influence retail price levels. PICs and DWFNs will have common objectives and interests to jointly and effectively pursue these solutions, or risk a collapse of current status quo arrangements.

More active multi-lateral donor participation in fishing sector management. WCPFC’s current governance model is the result of the historic combination of scientific (biological) approaches to resource management that largely ignored economic and political considerations, with resource management actions dominated by powerful economic and national political interests from DWFNs. When combined with market dominance by DWFNs and the very limited capacity of local sector governance, the result is a system inherently biased towards DWFN and foreign market interests. ADB has tried to address this bias, but has withdrawn from the fisheries sector in the Pacific. The World Bank may face stakeholder objections if it becomes involved. However, the World Bank may be far better placed and have more potential tools to actively support a more balanced sector management approach that could:

- Better prepare PICs for tuna licensing and resource management negotiations, including programs to study key stakeholder interests and widen negotiation strategies to include transparent donor aid programs for other sectors, political and market concerns, and better coordination of commercial and policy interests;
- Link implementation of national economic development programs supported by the World Bank and other donors to direct support for regional cooperation;
- Support planning for the long-term future of
fisheries and aquaculture in the region;
• Actively support donor coordination for the sector, possibly linking ongoing World Bank support activities in the eastern Pacific (e.g. proposals for a purse-seine buyout program); and
• Actively support a training program for fisheries sector managers and policy makers.

4.4 Current Sponsors of Activities in the Fisheries Sector

The Asian Development Bank’s major recent fisheries initiatives in the region have included strengthening fisheries agencies in PNG, FSM and the Marshall Islands; a review of the fisheries sector in Fiji; and regional studies of: (a) the contribution of fisheries to Pacific Island economies; (b) the importance of tuna in the region; (c) the live reef food fish trade; and (d) alternative approaches to fisheries access negotiations. The latter produced a fairly controversial report, at least from the perspective of FFA. According to the ADB officer formerly responsible for Pacific Island fisheries matters, policy changes have occurred at ADB, and the organization is no longer involved in the Pacific Island fisheries matters, except perhaps the case where there is a fisheries component within a larger integrated development loan.

The major activity of the Food and Agriculture Organization of the United Nations in the region in recent years has been from the FAO Technical Cooperation Programme. Some of these projects have included enhancing management capacity of government fishery agencies, a fisheries sector study in Tonga, fisheries legislation, seaweed cultivation, and national fishery policies. FAO also has major involvement in the region’s fisheries statistics, including scrutinizing and publishing statistics on fishery production furnished by national authorities on an annual basis, a project on improving statistics on coastal and subsistence fisheries and aquaculture, and the associated Pacific Islands Regional Workshop on Fishery Statistics. Other FAO Pacific Island fisheries activities have included a regional sea safety project, aquaculture projects, management plans for sharks and seabirds and IUU fishing, food security, HACCP arrangements, bottomfish management, and the promotion of the Code of Conduct for Responsible Fisheries.

The Australian Agency for International Development (AusAID) is a major fisheries donor in the region. It has had major fisheries institutional enhancement projects in Samoa and Tonga, is a major contributor to fisheries work at FFA (36% of the regular budget plus extra-budgetary activities) and SPC, has provided fisheries scholarships at USP and in Australia, supported the National Fisheries College in PNG, and has maritime surveillance cooperation with most PICs, including patrol boats and periodic aircraft flights. In the past, the agency has supported fisheries advisors and rural fisheries centers in several countries. AusAID has just completed a framework to guide its engagement in the region’s fisheries sector for the next five years (AusAID 2007), which indicates that the priority areas for AusAID’s regional and bilateral engagement in the sector will be:

• Improving fisheries governance and regulation, strengthening institutions, enhancing legal frameworks and compliance, and countering corruption;
• Supporting private-sector led development in commercial fisheries and aquaculture, including improvements in the investment climate, trade and market access, infrastructure and in private sector capacity;
• Sustaining small-scale coastal commercial and subsistence fisheries, with the development of effective community-based management of inshore resources a key component in support of effective ecosystem-based management for sustainability, with an emphasis on capacity building, training and education in government agencies, in fisheries businesses and in the wider community; and
• Improving knowledge and making information areas accessible; key areas include fisheries resources, levels of use and sustainability, impacts of factors such as climate change on ecosystem processes, fisheries and national food security and
nutritional needs, and economic and social components.

- Other donors include:

  - The **EU** is major contributor to SPC’s PROCFish project (inshore and offshore fisheries), FFA’s DevFish Project (private sector tuna industry, see later section), and assistance related to its bilateral fisheries access agreements in the region. The EU provided the now largely defunct rural fisheries centers in the Solomon Islands.

  - **Japan** is a major contributor to fisheries infrastructure (including the Marine Studies buildings at USP); rural fisheries centers in Fiji, Tuvalu, Marshall Islands, and Palau; scholarships to study fisheries subjects in Japan; an industry advisor at FFA; and, through the Overseas Fishery Cooperation Foundation, many types of assistance related to fisheries in countries with which Japan has fisheries access agreements.

  - **New Zealand** is a major contributor to FFA (36% of the regular budget plus extra-budgetary activities) and SPC, fisheries institution enhancement work in Cook Islands and Solomon Islands, long-term sponsor of SPC training course in New Zealand.

Additional donors include the Commonwealth Secretariat, France, Canada, USA, Taiwan, and Iceland.

### 4.5 Summary of Potential World Bank Interventions

A summary of World Bank interventions that could lead to more benefits to PICs is given in Table 4. These are given in rough order of priority; interventions are prioritized according to the magnitude of likely benefits and whether the area is currently being addressed. The interventions range from studies that could be carried out relatively quickly to long-term support.

Comment regarding the suggested interventions: Pacific Island regional organizations should be involved early on in the process of making a commitment to intervene in fisheries-related activities. Those organizations, especially FFA, are intimately involved in many of the suggested intervention areas. Depending on how they are approached, the regional organizations could welcome the involvement of a new donor, or view it as a competitive threat. In addition, the regional organizations may have undertaken confidential studies that are relevant to the suggested intervention areas, the results of which may not be available to the authors of the present study. Finally, situations can change rapidly (e.g. the Pacific Island Forum’s recent Vava’u Declaration on Pacific Fisheries Resources), and the present study could easily become dated if not updated by the regional organizations. The following suggestions may be part of a more fundamental restructuring process of tuna fisheries in the Pacific, which the World Bank may support through a combination of studies, technical assistance, and financial support for private sector and public investments.
### Table 4: Summary of the Suggested Intervention Areas

<table>
<thead>
<tr>
<th>Intervention Area</th>
<th>Comment (including time frame)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce corruption in fisheries</td>
<td>Although there is a general consensus that this is a large and growing problem in the fisheries sector, it may be “too hot to handle” for the regional organizations and most bilateral donors. International and fisheries perspectives need to be combined with local efforts to reduce corruption in the fisheries sector. Few people disagree with the contention that the World Bank could make a valuable contribution in this area. Even a short-term intervention could result in benefits.</td>
</tr>
<tr>
<td>Improve poor national fisheries institutions</td>
<td>Substantial activities are currently being undertaken by FFA, Australia, and New Zealand but additional resources, skills, and perspectives are required. A mixture of short-term and long-term activities is needed.</td>
</tr>
<tr>
<td>Enhance skills of fishery managers</td>
<td>High-level respected fishery educators are required for a diagnosis of the situation, followed by long-term support for fisheries management students.</td>
</tr>
<tr>
<td>Encourage countries to “take advantage of their advantage” in dealing with DWFNs</td>
<td>FFA recognizes the need for innovation in this area, but few innovative ideas are presently being nurtured. Proposed activities in this report dealing with this are more risky than approaches that have been pursued for many years, but the current complacency needs to be challenged. The process to support these innovations needs to receive support from outside the region. People involved would require a thorough understanding of the situation, and participate during the entire awareness/education/implementation process, as was the (successful) case of introducing the first only multi-lateral access treaty. A long-term activity.</td>
</tr>
<tr>
<td>Increase PIC participation in the tuna industry</td>
<td>Similar to the “taking advantage of the advantage” above: ideas are somewhat risky but the lack of major success in recent years calls for innovation. Needs long-term, high quality advice from outside the region, and possibly cooperation or start-up coordination with existing sovereign funds.</td>
</tr>
<tr>
<td>Improve impact of fisheries studies</td>
<td>This intervention area combines management skills upgrading, making high quality studies more accessible and understandable, and the need for some independent and high quality advice on some of the more important fisheries issues and constraints. The interventions required would cover the medium term and long term.</td>
</tr>
<tr>
<td>Improve government policies for tuna industry development</td>
<td>An FFA project (DevFish) is involved in this subject, and has had considerable success, although much more could be done with additional resources. DevFish has limited funds to cover the 14 target countries, over a four-year period. The interventions required would cover the short and medium term.</td>
</tr>
<tr>
<td>Improve regional solidarity in fisheries</td>
<td>A very political undertaking, but most efforts to improve benefits from the region’s tuna fisheries will be ineffective unless this issue is highlighted, improved, and monitored. The interventions required would cover the short term and medium term.</td>
</tr>
<tr>
<td>Improve the effectiveness of the Western and Central Pacific Fisheries Commission</td>
<td>Because much of the hope for the sustainability of the region’s tuna resources is focused on the new Commission (which in some respects is appearing increasingly ineffective), efforts to increase its effectiveness are crucially important. PICs and their advisors may be short of solutions in this area. Medium-term assistance is required.</td>
</tr>
<tr>
<td>Strengthen governance in the inshore fisheries subsector</td>
<td>Although the benefits to be gained in this area are not as great as those in the tuna fisheries, much of the present fisheries-related employment and nutrition for PIC residents is from inshore fisheries. SPC has substantial competence in inshore fisheries, but does not have expertise in fisheries governance and fisheries economics. The interventions required would cover the medium term and long term.</td>
</tr>
<tr>
<td>Improve effectiveness of MCS through economic analysis</td>
<td>Although IUU fishing appears to be a large problem in the region, opinions on the magnitude of the problem vary considerably. Additionally, without some form of economic analysis, it is difficult make decisions related to the level of MCS that is most cost-effective. The intervention suggested here is short-term.</td>
</tr>
<tr>
<td>More active multi-lateral donor participation in fishing sector management</td>
<td>This different approach to fisheries development in the region is a long-term activity.</td>
</tr>
<tr>
<td>Improve market access</td>
<td>Although advice is needed urgently to continue access to many markets, in the long term, more effective institutions (including fishers associations) are needed to give the issue the attention it deserves.</td>
</tr>
<tr>
<td>Specific studies that may cover a broader (economic and/or political) area than existing technical analysis</td>
<td>1. Analysis of the introduction of quotas linked to fee structure. 2. Current and future use of public revenue obtained from licenses, fees, and linked aid.</td>
</tr>
</tbody>
</table>
5. References


Barclay, K. and I. Cartwright. 2006. Capturing Wealth from Tuna: Key Issues for Pacific Island Countries. Australian National University, Canberra, Australian Capital Territory.


Appendix 1: The Main Tuna Fishing Gear Used in the Pacific Islands Region

<table>
<thead>
<tr>
<th>Gear Type</th>
<th>Catch</th>
<th>Typical vessel</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purse seine</td>
<td>Mainly skipjack and small yellowfin are caught by purse-seine gear. Most catch is for canning.</td>
<td><img src="image" alt="Purse seine Gear" /></td>
<td>About 72% of the tuna catch in the WCPO region is by purse-seine gear (about 1.5 million tons in 2006). Most of the purse-seine catch is taken within 5° of the equator.</td>
</tr>
<tr>
<td>Longline</td>
<td>Most tuna caught are large size yellowfin, bigeye, and albacore. The prime yellowfin and bigeye often are exported fresh to overseas markets. Most of the albacore catch is for canning.</td>
<td><img src="image" alt="Longline Gear" /></td>
<td>About 10% of the tuna catch in the WCPO region is by longline gear (about 229,000 tons in 2006). There are two major types of longliners: (1) relatively large vessels with mechanical freezing equipment (often based outside the Pacific Islands), and (2) smaller vessels that mostly use ice to preserve fish and are typically based at a port in the Pacific Islands.</td>
</tr>
<tr>
<td>Pole-and-line</td>
<td>Mainly skipjack and small yellowfin are caught by pole-and-line gear. Most catch is for canning or producing a dried product.</td>
<td><img src="image" alt="Pole-and-line Gear" /></td>
<td>About 10% of the tuna catch in the WCPO region is by pole-and-line gear, about 212,000 tons in 2006. In the 1980s, several Pacific Island countries had fleets of these vessels, but most no longer operate because of competition with the more productive purse-seine gear. Most of the catch by this gear is made in Asian waters.</td>
</tr>
<tr>
<td>Troll</td>
<td>Large-scale trolling targets albacore for canning.</td>
<td><img src="image" alt="Troll Gear" /></td>
<td>Gear types other than the three listed above are responsible for about 10% of tuna catch in the WCPO. Large-scale trolling is an important part of this. It is carried out in the cool water to the south and north of the Pacific Islands region. Trolling in the south results in about 5,000 tons of albacore annually.</td>
</tr>
</tbody>
</table>

Source: Gillett and Langley (2007)
Appendix 2: The Status of Tuna in the Western and Central Pacific Ocean

<table>
<thead>
<tr>
<th>Species</th>
<th>Trends in catch per unit of effort</th>
<th>Features of size composition data</th>
<th>Conclusions using MULTIFAN-CL results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skipjack</td>
<td>Catches have increased steadily since 1970, more than doubling during the 1980s, and the 2006 catch was the highest ever.</td>
<td>Catch per unit of effort for most purse-seine fleets continues to be at a high level.</td>
<td>Current levels of stock biomass are high and recent catch levels appear easily sustainable.</td>
</tr>
<tr>
<td>Yellowfin</td>
<td>Catches have increased steadily since 1970, more than doubling during the 1980s. The longline catch peaked in the late 1970s and early 1980s, but purse-seine catches continue to grow, ranging from 115,000–270,000 mt in the last decade.</td>
<td>Japanese longline fleet catch rates show variability and regional differences, with an overall decline since the early 1950s in the equatorial WCPO, but little or no overall recent trend in more temperate regions.</td>
<td>The yellowfin stock in the WCPO is probably not overfished, but the stock is likely to be nearing full exploitation, and current levels of fishing mortality are likely to move the yellowfin stock to an overfished state.</td>
</tr>
<tr>
<td>Bigeye</td>
<td>Catches show much variation in recent years; the catch for 2005 was the highest recorded.</td>
<td>Nominal catch per unit of effort declined during the early stages of the fishery but has been fairly stable over recent years.</td>
<td>Fishing is having a large impact on the biomass level. The current level of exploitation appears not to be sustainable in the long term, unless the high recent recruitment is maintained.</td>
</tr>
<tr>
<td>Albacore</td>
<td>South Pacific albacore catches have been mostly in the range 25,000–50,000 mt, although a significant peak was attained in 1989, during the driftnet fishing era. Total South Pacific albacore catches have shown an increasing trend since the mid-1990s.</td>
<td>Longline catch rates declined from the late 1960s to the late 1980s, but increased in the mid-late 1990s. Since 1999, the nominal catch rate has been relatively stable in the central area, increasing in the southern area, and dropping in the northern area.</td>
<td>South Pacific albacore tuna stock has declined moderately since the early 1980s. The impact of all fishing is estimated to be small, and higher levels of catch could likely be sustained. However, longline fishing is focused on the older fish resulting in a biomass of the order of 30% in the most recent years on that segment of the population.</td>
</tr>
</tbody>
</table>

Source: Gillett and Langley (2007)
Appendix 3: Measures of Tuna Fisheries Benefits

### Table A-1: Estimates of Tuna Fishing Contribution to GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>1999 (Gillett/Lightfoot estimates)</th>
<th>2004 (DevFish estimates)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuna catch t.</td>
<td>Tuna catch t.</td>
</tr>
<tr>
<td></td>
<td>Catch x price x VAR</td>
<td>Catch x price x VAR</td>
</tr>
<tr>
<td></td>
<td>GDP US$ (million)</td>
<td>GDP US$</td>
</tr>
<tr>
<td><strong>Cook Islands</strong></td>
<td>0</td>
<td>LL 2,660</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,660 x 2058 x 0.2</td>
</tr>
<tr>
<td><strong>FSM</strong></td>
<td>LL 2,500 PS n/r</td>
<td>LL 840 PS 26,958</td>
</tr>
<tr>
<td></td>
<td>2,500 x 5,000 x 0.5</td>
<td>840 x 5,000 x 0.2</td>
</tr>
<tr>
<td></td>
<td>6.25 m</td>
<td>26,958 x 800 x 0.2</td>
</tr>
<tr>
<td><strong>Fiji</strong></td>
<td>LL 5,000 P&amp;L 500</td>
<td>LL 13,886</td>
</tr>
<tr>
<td></td>
<td>5,500 x 4,670 x 0.5</td>
<td>13,886 x 8,200 x 0.25</td>
</tr>
<tr>
<td><strong>Kiribati</strong></td>
<td>0</td>
<td>Troll 2,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,000 x 2,000 x 0.5</td>
</tr>
<tr>
<td><strong>Marshall Islands</strong></td>
<td>0</td>
<td>LL (tuna) 1.836</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LL (b/c) 1.835 PS 46,672</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,000 x 5,000 x 0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n/a mainly shark 46,672 x 800 x 0.2</td>
</tr>
<tr>
<td><strong>Nauru</strong></td>
<td>50</td>
<td>LL 1.2 t. Troll 10 t.</td>
</tr>
<tr>
<td></td>
<td>50 x 5,000 x 0.5</td>
<td>11.2 x 2,000 x 0.4</td>
</tr>
<tr>
<td><strong>Niue</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LL fishery started in 2005</td>
</tr>
<tr>
<td><strong>Palau</strong></td>
<td>LL 2,500</td>
<td>LL 2,580</td>
</tr>
<tr>
<td></td>
<td>2,500 x 6,080 x 0.5</td>
<td>2,580 x 6,000 x 0.2</td>
</tr>
<tr>
<td><strong>PNG</strong></td>
<td>PS 50,000 LL 500</td>
<td>LL 4,810 PS 198,000</td>
</tr>
<tr>
<td></td>
<td>50,500 x 878 x 0.4</td>
<td>LL 4,810 x 5,000 x 0.2 PS 198,000 x 800 x 0.2</td>
</tr>
<tr>
<td></td>
<td>17.74 m</td>
<td>4.810 x 5,000 x 0.2 PS 198,000 x 800 x 0.2</td>
</tr>
<tr>
<td><strong>Samoa</strong></td>
<td>LL 5,156</td>
<td>LL 2,000</td>
</tr>
<tr>
<td></td>
<td>5,156 x 1,908 x 0.5</td>
<td>2000 x 2,520 x 0.2</td>
</tr>
<tr>
<td><strong>Solomon Islands</strong></td>
<td>PS, P&amp;L, LL 73,328</td>
<td>PS 16,094 P&amp;L 6,882 LL 1,162</td>
</tr>
<tr>
<td></td>
<td>73,328 x 945 x 0.4</td>
<td>16,094 x 900 x 0.2 6,882 x 900 x 0.2</td>
</tr>
<tr>
<td></td>
<td>27.69 m</td>
<td>1,162 x 4,000 x 0.2</td>
</tr>
<tr>
<td><strong>Tonga</strong></td>
<td>LL 800</td>
<td>LL 526</td>
</tr>
<tr>
<td></td>
<td>800 x 4,595 x 0.55</td>
<td>526 x 5,000 x 0.2</td>
</tr>
<tr>
<td><strong>Tuvalu</strong></td>
<td>0</td>
<td>Troll 120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 x 2,400 x 0.5</td>
</tr>
<tr>
<td><strong>Vanuatu</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>140,330</td>
<td>79 million</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(92.6 m) 53.5 m*</td>
</tr>
</tbody>
</table>

**Note:** The economic contribution of locally based purse-seine vessels, especially fleets in the Marshall Islands and PNG, are uncertain, pending the DevFish study.

VAR=value added ratio, LL=longline, PS=purse seine, P&L=pole-and-line, n/r=not reported, b/c=bycatch

**Source:** modified from DevFish 2007.
### Table A-2: Domestic Tuna Sector Summaries

<table>
<thead>
<tr>
<th>Country</th>
<th>Active locally based tuna vessels</th>
<th>Canneries and dedicated loining facilities</th>
<th>Air export packing &amp; value-adding facilities</th>
<th>Local jobs on vessels</th>
<th>Local jobs at onshore facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook Islands</td>
<td>10 LL</td>
<td>23 LL</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>FSM</td>
<td>34 LL, 8 PS</td>
<td>3 PS</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Fiji</td>
<td>96 LL, 1 P&amp;L</td>
<td>60 LL</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Kiribati</td>
<td>2 LL, 1 PS</td>
<td>1 PS</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>54 LL, 5 PS</td>
<td>40 LL, 6 PS</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Nauru</td>
<td>1 LL</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Niue</td>
<td>100 skf</td>
<td>40 skf, 2 LL</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Palau</td>
<td>71 LL, 1 PL</td>
<td>139 LL</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PNG</td>
<td>40 LL, 24 PS</td>
<td>11 p/bt, 25 LL, 43 PS</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Samoa</td>
<td>153 LL</td>
<td>29 LL 10 alia</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>8 LL, 2 PS, 12 P&amp;L</td>
<td>-</td>
<td>2 PS, 11 P&amp;L</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tonga</td>
<td>26 LL</td>
<td>15 LL</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Tuvalu</td>
<td>20 skf</td>
<td>24 skf</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>20 skf</td>
<td>30 skf</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: LL=longline, PS=purse seine, P&L=pole-and-line, skf=skiff, p/bt=pump boat

Source: DevFish (2007)
Appendix 4: The Western and Central Pacific Fisheries Commission

In the mid-1990s there was a growing awareness of the need for a tuna management agency that would cover an area larger than that encompassed by Pacific Island countries, and which would include countries that have vessels that fish in the area, such as Japan and the USA. After four years of complex negotiations between the coastal States of the western and central Pacific, and States fishing in the region, the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean was opened for signature in September 2000. The objective of the Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 United Nations Convention on the Law of the Sea and the 1995 UN Fish Stocks Agreement. For this purpose, the Convention establishes a Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, now known as the Western and Central Pacific Fisheries Commission. The Convention entered into force on 19 June 2004. The Commission, which has its headquarters in Pohnpei, Federated States of Micronesia, has been operational for almost three years and three full meetings of the Commission have been held.
Appendix 5: The World Bank in Pacific Island Fisheries

Past Activity
A non-exhaustive list of World Bank activity in the last 10 years in the region’s fisheries sector includes:

- In July 1995, a World Bank fisheries team visited the Federated States of Micronesia to “improve institutional framework for fisheries development and identification of constraints affecting public investments in the fisheries sector”.
- As part of the World Bank’s 1995 Regional Economic Report, there was a specialized fisheries study that produced the report “Pacific Island Economies: Sustainable Development of Fisheries”.
- In 1996/1997, trust funds from Iceland were used to carry out a study on the industry, trade and marketing of Pacific Island trochus.
- In 1998/1999, there was a study on coastal resource management in the Pacific Islands, which involved a detailed examination of successes and failures in coastal resource management at 31 sites in 5 Pacific Island countries. This resulted in several publications, including “Voices from the Village”.
- Volume III of the 2000 Regional Economic Report was titled, “Managing Use of the Oceans”.
- In 2001, a study on the “Contribution of Fisheries to the Economies of Pacific Island Countries” was jointly funded by ADB and the World Bank.
- In 2000, Gert Van Santen and a former FFA director produced “Working Apart Together”, an analysis of selected benefits and costs of a common approach to managing tuna resources in the exclusive economic zones of Pacific Island countries.
- In 2005, Gert Van Santen produced the paper “Tuna Industry Indicators”, which proposed a simple annual system for monitoring key parameters of the tuna fishery, and its impact on FFA members.

A Perspective on the Comparative Advantages of the World Bank
What can the Bank can do with regards to Pacific Island fisheries that regional organizations (e.g. SPC, FFA) and others (AusAID, ADB, and FAO) are unwilling or unable to do? Based on experience in the region during the past decade, the comparative advantages of the World Bank in Pacific Island fisheries appear to be:

- Support the process of sector restructuring being forced upon the sector through rising energy costs, and changing patterns of demand for tuna products.
- Regional organizations are, to some degree, limited to responding to a specific request, or at least carrying out work that has been approved by their governing bodies. This system may have served them well, but has its limits with respect to being proactive and exploring subjects where benefits are not readily apparent.
- The Bank’s contacts extend beyond the fisheries sector, and avoid the problem that individuals within the sector may not be receptive to criticism and recommendations. Few decision makers saw ADB’s review of Fiji’s fisheries sector.
- The Bank can handle subjects that are “too hot to handle” by regional organizations. Neither SPC nor FFA could address the very large and growing subject of fisheries corruption.
- The Bank’s economic expertise is undisputed and highly diverse, and could support the strengthening of

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1 This does not include any of the large number of Global Environment Facility (GEF) projects in the region.
economic sector analysis in the region. FFA no longer has a section dedicated to economics and SPC has no fisheries economists.

- Some of the best staff from FFA and SPC have worked most, if not all, of their professional lives in Pacific Islands fisheries, with limited exposure to other regions. The Bank can bring in experience from other areas of the world, where some regionally important issues may have been studied, analyzed, and resolved.
- To some degree, both SPC and FFA cannot be overly critical of their donors and their favored policies. For example,
- SPC would have difficulty drafting a report critical of aquaculture development approaches in the region.
- ADB has some of the above advantages. Policy changes at ADB have occurred, and the organization is no longer involved in the fisheries sector in the Pacific Island region, except perhaps where there is a fisheries component in a large integrated development loan.
Appendix 6: Some Especially Relevant Current Projects

Development of Tuna Fisheries in the Pacific ACP countries (DevFish)

This is a regional project with two staff members based in Honiara, Solomon Islands, and 1 staff member in Noumea, New Caledonia. Project duration is 48 months and has a value of €3,000,000. Key stakeholders are Pacific Islanders involved in tuna fishing, processing and marketing, or businesses servicing those industries; or who have the potential to become involved. DevFish is intended to contribute to the establishment of a concerted policy and economic environment conducive to the further development of Pacific ACP owned fishing and processing operations, and to an increased contribution of foreign fleets to the economic development of these countries. These are to be obtained through:

- Improved information for policy making available and being used;
- New and improved strategies for fisheries development identified;
- Opportunities for participation of the Pacific ACP private sector in tuna fisheries improved;
- Conditions for regional and international trade in tuna products and investment in tuna production improved; and
- National policies and institutional arrangements for private sector tuna fishery development improved and coordinated.

The project is now at the half-way mark in its four-year duration. All 14 Pacific ACP states have been visited at least once, while the two subregional tuna industry meetings for the Melanesian and Micronesian countries were completed in September and November 2006, respectively. The required baseline information has been collected and provided in all the relevant trip reports undertaken by project staff, while outcomes of the subregional tuna industry meetings are provided as annexes to its annual report. The project has already begun some major support to fishing associations and major tuna industries, while carrying out regional economic studies and analyses on the impact of different domestic and locally based fisheries, engaging external resources where internal sources are not available. Reports produced by DevFish to date are:

- Longline Economics Benefits Brochure, 2007;
- A Business Manual on Value Added Products From Tuna and Tuna By-Catch, 2007;
- Priority Issues For The Tuna Industry In Melanesia, 200;
- An Assessment of the Economic Benefits Of Tuna Purse Seine Fishing and Onshore Processing of Catches, 2007;
- An Assessment of Development Options in the Longline Fishery, 2006;
- An Assessment of Opportunities For Increasing Utilization And Value Adding From Shark Bycatch in Tuna Longline Fisheries, 2007; and

Global Environment Facility (GEF) Islands Offshore Fisheries Management Project

The objective of GEF’s project is to assist Pacific small island developing states: (a) participate in the initial operations of the Commission formed to implement the WCPF Convention; and (b) reform, restructure and strengthen their national fisheries laws, policies, institutions and programmes to take advantage of the opportunities and meet the responsibilities associated with the WCPF Convention. The project began in November 2005 and will continue for five years. The project has two primary goals:

- The global environmental goal is to achieve environmental benefits by enhanced conservation and management of transboundary oceanic fishery resources in the Pacific Islands region, and the protection of biodiversity of the “western tropical
• Pacific warm pool large marine ecosystem”;

and

• The broad development goal is to assist PICs in improving the contribution to their sustainable development from improved management of transboundary oceanic fishery resources, from the conservation of oceanic marine biodiversity generally.

The project’s three components include:

• **The Scientific Assessment and Monitoring Enhancement Component**, is aimed at providing improved scientific information and knowledge on oceanic transboundary fish stocks and related ecosystem aspects of the “western tropical Pacific warm pool large marine ecosystem”, and at strengthening the national capacities of Pacific SIDS in these areas. This work will include a particular focus on the ecology of seamounts in relation to pelagic fisheries, and the fishing impacts upon them;

• **The Law, Policy and Institutional Reform, Realignment and Strengthening Component**, is aimed at assisting PICs as they participate in the earliest stages of the work of the new Western and Central Pacific Fisheries Commission, and at the same time reform, realign and strengthen their national laws, policies, institutions and programs relating to management of transboundary oceanic fisheries and the protection of marine biodiversity; and

• **The Coordination, Participation and Information Services Component**, is aimed at effective project management, complemented by mechanisms to increase participation and raise awareness of the conservation and management of oceanic resources and the oceanic environment. The project design has involved a substantial consultative process, which has been supported throughout the region. The project seeks to (a) apply a regional approach that recognizes national needs; (b) strike a balance between technical and capacity-building outputs by twinning technical and capacity building activities in every area; and (c) open participation in all project activities to governmental and non-governmental stakeholders. The structure for project implementation and execution builds on a record of successful collaboration between the United Nations Development Programme, regional organizations, and Pacific small island developing states, in past activities in oceanic environmental management and conservation, strengthened by planned new partnerships with the International Union for Conservation of Nature, a regional environmental non-governmental organization, (NGO) and a regional industrial NGO.
Appendix 7: Some Key Reports and Findings on Pacific Tuna Fisheries and their Benefits

The Pacific Islands Forum Fisheries Agency (FFA) carries out a large number of studies each year. However, a list of recent reports is not available in the public domain. In the 10-year period from 1990–1999, more than 1,000 technical reports were produced by FFA staff and consultants. Other agencies have also reported on PIC tuna fisheries: SPC, FAO, AusAID, Pacific Islands Forum Secretariat, Australian National University, Asian Development Bank, the University of the South Pacific, and others.

It should be noted that some of the most important papers may not be in the public domain. The list of reports given below is not intended to be exhaustive, but rather consists of those documents that are readily available and which are relevant to the issue of increasing benefits from the region’s tuna resources.


The 2007/2008 schedule of activities includes the following:

- Printing and circulation of the report, “Regional Contribution of Tuna to GPD” — base year 2004;
- Publication and distribution of brochures on the longline fishery, and the purse seine fishery and associated onshore activities;
- Publication of studies on bycatch processing and utilization, focusing on sharks;
- Publication of SPC brochure on the implications of the Torremelinos Protocol;
- Pursuing the completion of a study on labor mobility with the Pacific Regional Economic Integration Programme;
- Completing gender studies of the tuna industry in PICs;
- Completing studies on sports fishing and small-scale troll fisheries;
- Conducting a cetacean study in consultation with USP and a research student;
- Securing a consultant and resource person for the fisheries statistics meeting;
- Conducting a regional longline access study;
- Processing a strategy for the Parties to the Nauru Agreement; and
- Providing regional laboratory services.
- Organizing attendance of participants at the following regional meetings:
  i. Statisticians workshop;
  ii. Vessel operators and crewing agencies; and
  iii. EU participants at Pacific Regional Tuna Conferences.
- In-country project to include the following:
  i. Study of biofuel in PNG;
  ii. Small-scale tuna supply for Solomon Islands;
  iii. Support to competent authority in Niue;
  iv. Support to tuna fishing associations within Pacific ACPs;
  v. Analysis of Nauru Fisheries Corporation; and
  vi. Others as may be identified during the year.
- Other possible studies that would require engaging consultants include:
  i. Economic implications of management options;
  ii. Development plan preparation; and
  iii. Trade issues.

Williams and Reid (2007) provide an overview of tuna fisheries in the western and central Pacific Ocean in 2006, including the economic conditions.

- Annual total catches of the four main tuna species (skipjack, yellowfin, bigeye, and albacore) in the Western and Central Pacific Fisheries Commission area increased steadily during the 1980s as the purse-seine fleet expanded and
remained relatively stable during most of the 1990s until the sharp increase in catch during 1998. Over the past five years, there has been an increasing trend in total tuna catch, primarily due to increases in purse-seine fishery catches;

- The estimated delivered value of the purse-seine tuna catch in the WCPFC area for 2006 is US$ 1,583 million, the highest level since at least 1995. This represents an increase of US$ 82 million or 5% on the estimated delivered value of the catch in 2005. This increase was driven by a US$ 89 million (8%) increase in delivered value of the skipjack catch; and
- The estimated delivered value of the longline tuna catch in the WCPFC area for 2006 is US$ 1,112 million. This represents a marginal increase of US$ 5 on the estimated value of the catch in 2005.

Barclay and Cartwright (2006) specify 10 strategies for working towards the goal of capturing more wealth domestically from tuna resources in a sustainable and socially equitable manner.

- Place greater emphasis on predicting economic outcomes — particularly across fisheries, gear types and WCPFC members — when designing and determining management measures, including levels of fishing effort by domestic and foreign fleets;
- Follow up the 2002 FFA Rights-Based Workshop, possibly through a series of in-country seminars, to increase awareness among domestic policy makers and fisheries managers of such approaches;
- Base tuna management and development on the principles of Ecologically Sustainable Development (ESD) — balancing economic, environmental and social goals and outcomes;
- Hold an access fee summit (hosted by FFA), including PIC fisheries officials, other stakeholders and experts to discuss various ways of licensing DWFN vessels, including improving the existing access fees-based arrangements and alternatives, such as appropriate rights-based/licensing/chartering arrangements;
- PIC government officials, with industry representatives, review the delivery of government services with industry representatives, to highlight bottlenecks and ways of streamlining bureaucratic processes to increase industry efficiency and thus profitability;
- Review successes and failures in tuna management and development planning processes to date, and base future efforts on lessons learned. Develop tuna management plans so that they are “owned” by Pacific Island nationals, and have agreed upon, achievable goals and timelines. Plans should have legislative force, rather than being “flexible” enough to be ignored. Progress needs to be assessed on a regular basis, and goals and strategies revised to ensure alignment with national and regional policies, as well as tuna fisheries and market dynamics;
- Appoint a professional regional representative (possibly part time) to represent the interests of PIC tuna industries, working closely with FFA. The representative should be adequately funded to travel and liaise to improve consultation and inclusion. In particular, the representative should attend regional meetings and set up information networks with industry players;
- Bring industry, environmental and social/community NGOs into consultative decision-making processes, as envisaged in Tuna Management Plans;
- Sponsoring agencies to make consultants’ reports publicly available as a general rule. FFA or SPC to develop and manage a publicly accessible bibliography database of publications and reports with relevance to tuna in the
region;
• Build capacity in PIC fisheries departments in the following fields: fisheries management (including working knowledge of stock assessments); economics; business management; and public policy. Where capacity gaps exist, consider recruiting suitably qualified and motivated staff from other government departments and externally.

Gillett (2006) reviews the history of industrial fisheries development in the region. In over a half century of fisheries development predicated on the tuna resources of Pacific Islands, there have been many lessons learned, especially from those efforts that have failed. Three important ones are:

• Government-owned national tuna fishing companies — which have operated in Fiji (Ika Corporation), Tuvalu (NAFICOT), Kiribati (Te Mautari), Tonga (Sea Star), and the Federated States of Micronesia (National Fishing Corporation and 13 other national/state fishing companies) — are not viable. The experience of these companies demonstrates the following: (1) None of these national fishing companies have been profitable in the long term. Several of the investments and losses are staggering — the government of FSM has invested over US$100 million in several companies. (2) There has been great reluctance to privatize these firms. This seems to come from an absence of local investors with sufficient resources, a reluctance to bring in foreigners, personal agendas of government officials associated with the national company (director fees, perks, overseas travel), and government officials wishing to avoid an embarrassing accounting of large historical losses, which would become apparent in an asset sale. (3) Bold decisions to privatize or sell were rarely made. Assets decayed to near zero value while waiting for government action. For a few companies, a conveniently-timed disaster provided the catalyst for sale, or simply liquidation;

• Another important lesson is that, for tuna purse seining, having easy access to resources is not a guarantee of success. In previous decades, many PICs believed that by being close to the tuna fishing grounds, they had an inherent advantage over other countries whose vessels were based at considerable distances from the fishing activity, or even outside the region. Many countries learned that this was not the case; and

• Perhaps the most important lesson learned in the history of industrial fishing activity in the Pacific Islands, is that past sustainable operations have been mainly associated with tuna resources. Similarly, most industrial-scale opportunities for the foreseeable future are likely to be related to tuna.

Philipson (2006) reports on a study whose objective is to determine the benefits returned to the national economy from different longline operational models and licensing regimes so as to inform policy decisions related to achieving the national goal.

The different operational models evaluated in this study showed a very wide range in terms of their benefit to the national economy, based on the evaluation criteria used. The model with the greatest economic impact was that which combined a conventional longlining operation with full scale onshore value adding. This model produced the maximum scores for employment returns, value added, and profitability, and second highest for local purchases (all on a per metric tonne of raw material basis). Previous emphasis on the development of the catching sector may have occurred at the expense of the processing sector, which, if true, has been to the detriment of overall returns from the longline fishery. The key element in increasing returns from the longline fishery is the development of
large-scale, commercially viable onshore value added processing. As local investors have been slow to respond to this opportunity, direct foreign investment (DFI) should be encouraged into the processing subsector. Licensing regimes should be designed to achieve the goals set out for the longline fishery above, namely, the establishment of a commercially viable and environmentally sustainable commercial fishery that optimizes returns to the local economy. This may require allowing DFI in the catching sector, at least on a temporary basis. Building a national commercial fisheries sector is not necessarily best initiated by a focus on the creation of a domestic catching sector. In fact, this report highlights the beneficial affects of onshore processing to the national economy, and the fact that returns to the economy are not significantly directly effected by the ownership of the assets.

The purpose of a study by Campling et al. (2006), commissioned by FFA, was to produce a user-friendly guidebook on contemporary issues in the Pacific’s tuna trade (i.e. a reference guide to assist government officials, particularly those in fisheries, trade and foreign affairs) and tuna industry operators to better understand the rules and requirements of international and regional trade agreements, and how they relate specifically to the fisheries sector.

In order to trade fisheries products from PICs, exporters must manoeuvre a complicated network of tariffs, subsidies and the ever-changing global trends in production and consumption of fisheries products. In particular, the international trade environment is becoming increasingly important to tuna trade; however, navigating the regulations is difficult because of the complex and overlapping rules and institutions that include World Trade Organisation (WTO) rules and the rising importance of Free Trade Agreements (FTAs), such as the Pacific’s negotiations with the European Union and (potentially) with Australia and New Zealand. The intraregional trade environment is becoming similarly complex with the development of regional agreements, such as the Pacific Islands Countries Trade Agreement (PICTA). To date, much of the focus in regional discussions about WTO and regional trade agreements has been on the implications for agricultural trade. Fisheries issues have only recently started to be incorporated into such discussions. This guidebook is a contribution to furthering this understanding. In particular, as a reference guide to assist government officials (in particular, fisheries and trade officials) and tuna industry operators to better understand the rules and requirements of international and regional trade agreements, and how they relate specifically to the fisheries sector.

Reid (2006) reports on the economic implications of a reduction in fishing effort levels in the region.

This paper analyses the economic implications of an implicit allocation of bigeye harvest rights through an across the board reduction in effort levels in the Western and Central Pacific Tuna Fishery, a multi-species, multi-sector and multi-jurisdictional fishery. The paper concludes that the major beneficiaries of an across-the-board reduction in effort levels will be the frozen longline fleet targeting sashimi grade tuna, which operate primarily on the high seas while the economic costs of such a policy will be borne primarily by the purse-seine fleet and the PICs in which this fleet operates.

Duncan (2006) discusses the economics and politics of tuna management in the Pacific Islands region.

The paper concludes that the persistence of poor policies by PICs in the exploitation of their tuna resources is very disappointing. The poor policies, which defy the Law of Comparative Advantage and the Tinbergen Principle, are wasteful
uses of resource rents and are ineffective in achieving any of the countries’ stated objectives. Persistence with these policies appears to be an outcome of the patron-client politics that pervades Pacific politics. Moreover, the positions taken by the PICs appear to generate unhelpful reactions by DWFNs, resulting in corruption and free riding. It is especially disappointing that FFA has been so ineffectual in changing the policies followed by PICs. Australia’s investment in FFA has yielded a very poor return with respect to policy improvements. What will change this predatory behavior of PIC governments that has such high costs in terms of foregone improvements in the welfare of Pacific peoples? I believe that it is only through educating the public about the benefits of following transparent, market-based policies that such behavior can be changed. Ultimately, if the public does not demand good governance, nothing will change.

A report by McCoy and Gillett (2005) discusses tuna longlining by China in the Pacific Islands, emphasizing the considerations for increasing benefits to FFA member countries.

The report indicates that some of the elements of the business and regulatory environment in FFA member countries that detract from the region’s attractiveness from the perspective of Chinese vessel operators include:

- Lack of control over, and sometimes high expenses for, offloading, packing and shipping the catch;
- Certain individual PIC government policies, regulations or requirements (e.g. ban on shark finning or the need to obtain port clearances for each fishing voyage);
- Difficulty in obtaining US visas for transit to some PICs; and
- High cost of vessel monitoring systems (VMS) relative to other electronics on some vessels and sometimes harsh or strict enforcement of VMS requirements.

A case study of one PIC indicates that expenditures by Chinese vessels and agents amounted to US$ 4.4 million in 2004. The PIC government received direct revenue of about 16% of the total access fees, other fees and taxes. The most likely means by which the government would increase direct revenue would be by increasing these fees and taxes. In the case study, payments to the private sector were found to be greater than payments to government, with fuel being about 59% of total expenditures. There appear to be few opportunities to increase benefits to the private sector, other than by increasing the number of vessels based in the country, which may provide proportional increases in all or most expense categories.

With respect to the future:

- Fiji stands out as one FFA member country that has become a focus for Chinese tuna fishing. As one of the larger countries in the region, it has the infrastructure to support fleets, a cannery to purchase the fish from Chinese longliners, and air connections to sashimi markets;
- Possible revaluation of Chinese currency and increased emphasis on profitability of state-owned enterprises could change some of the economic conditions under which Chinese vessels currently operate; and
- China will most likely continue to try and increase its presence in the Pacific Islands through the expansion of longline basing arrangements, and formal bilateral fishery agreements with more PICs.

A study by GPA (2005) examines building the sustained competitive advantage in the PNG domestic fishing industry.

The report reviews the cost structures of the domestic tuna longline and prawn fishing industries, with recommendations on strategic directions for future development.
A study by Van Santen (2005) is primarily concerned with proposals for a simple annual system to monitor key parameters of the tuna fishery and its impact on FFA members. The report notes the difficulty of conducting an economic analysis of the performance of the fishing sectors at the national and regional level, and states that the reasons for this have considerable relevance to fishery development in the region:

- There are several reasons for the current lack of permanent, comprehensive economic monitoring of the performance of fishing sectors at the national and regional level. The simple answer is that this kind of economic analysis usually requires data that are currently not regularly collected in the region, or are perceived as politically sensitive, and as such, are not made public;
- A more fundamental reason is that Pacific tuna fisheries are probably some of the most complex fisheries in the world. Industrial fishing fleets of five major and several smaller DWFNs as well as local vessels, exploit four major tuna stocks that migrate among the EEZs of 17 FFA members and other oceanic areas, and use at least four different technologies; and
- Pacific tuna fisheries are also part of a complex process in which DWFNs aim to serve their regional political interests. This process has generally not been the subject of publicly accessible studies. Nevertheless, understanding this political process is at least as important as economic and biological studies when evaluating the current status and structure of the fishery, and its actual impact on PIC economies.

The paper by Tiller (2004) is controversial and was not well received at SPC and (especially) FFA. The paper argues that while the fishery is significant and coastal states numerous, the two are unlikely, at least initially, to assert sufficient influence to affect outcomes in the world tuna market. And although sector management practices have failed to produce long-awaited outcomes they persist, seemingly infallible and non-accountable. The paper urges consideration of initiatives that build value in the fishery. Under current management arrangements the emphasis is on access fees, which represent a production cost for fishers. Attempts to make fishers pay more without improving their productivity, add to their costs, thereby limiting their capacity and willingness to pay. Coastal states are right to seek access fees but regional strategies have neglected the next, and potentially much more helpful, phase of nurturing the growth of economic rent. Access fees and economic rent are not mutually exclusive. To improve economic benefits from the sector there must be the prospect of value and profit, which entails amending current strategies. In essence this entails ensuring that those generating economic activity have the opportunity to work within an institutionally and commercially conducive framework. They would then be expected to share a proportion of the benefits with those coastal states that contributed to making such benefits possible. The paper argues for the tailored application of conservative and successful fisheries management and commercial principles. Elsewhere and in diverse fisheries such practices have restored value and economic benefits. It urges that regional fishery management arrangements and domestic policies converge and complement one other so as to enable the production of economic rent. In essence the solution to the problems confronting coastal states effectively lies in their hands. At present, outcomes, frustrating though they may be, are largely preordained by strategies that sought access fees and neglected economic rents. These strategies, which have been likened to plundering the caravan, have existed in various forms for 15 years or more and it is timely to
critically and dispassionately re-examine them. There is no institutional reason why change could not occur. If there is a reluctance to change it is more because options have rarely been considered in the context of both fisheries management and economic development. In fact the two issues are inseparable.

Gillett (2003) discusses a number of issues relevant to domestic tuna industry development in the region: Who is successful in the tuna industry, foreign investment, tuna management plans, commercial involvement of governments in the tuna industry, small-scale tuna industry development, applicability of Samoa alia fishing and economics of small-scale fisheries, credit, air freight, dissemination of reports and other aspects of fisheries information, fisheries associations, rights-based management, taxation, fuel, the FSM arrangement, and other observations relevant to future development assistance. The report indicates that several constraints cited by tuna industry stakeholders are amenable to mitigation:

- Stability of policies affecting the tuna industry;
- Credit availability;
- Fuel cost;
- Air freight availability;
- Fisheries taxation difficulties;
- Excessive government administrative charges and administrative bottlenecks;
- Low level of entrepreneurial development;
- Low level of fisheries skill development;
- Poor government and/or industry dialogue;
- Low attractiveness to investors (foreign and local);
- Inefficient harbor management; and
- Lack of preparation for HACCP requirements.

Gillett et al. (2001) has as its objective to stress the economic importance of tuna to the region.

- It is well known that fish and fishing are tremendously important to the people of the Pacific Islands. Much of the nutrition, welfare, culture, recreation, government revenue, and employment are based on the region’s living marine resources. What is less appreciated is that, not only is tuna the most important of the fisheries in the region, it produces about 10 times the amount of fish as all of the other fisheries of the region combined. In terms of value, tuna fisheries are worth over seven times that of all other Pacific Island fisheries combined;
- The Pacific Islands region is presently the most important tuna fishing area of the world. About one-third of all tuna in the world comes from the Pacific Islands, and the region’s tuna fisheries dwarf those of the other three major tuna fishing areas both in volume and value; and
- In the future Pacific Island climate of continued economic stagnation, very high population growth, severe economic shocks, and massive unemployment, it is inevitable that the presently underexploited tuna resources of the region will assume an importance much greater than at present. Quite simply, in most countries there are few, if any, alternatives to tuna.

Bertignac et al. (2001) study focuses on maximizing resource rent from the western and central Pacific tuna fisheries.

Rent generated by the tuna fisheries occurring in the waters of PICs is estimated for various levels and combinations of purse-seine, pole-and-line, frozen tuna longline, and fresh tuna longline fishing effort, using a multi-species, multi-fleet bioeconomic model. The underlying population model integrates available information on the population dynamics of skipjack, yellowfin, bigeye, and southern albacore tunas in the Pacific Ocean. The economic model utilizes the most recent data on fishing effort costs for the purse seine, pole-and-line, and longline fleets operating in the western and central Pacific
Ocean, along with recent estimates of prices by species, method of capture and market, and estimates of demand elasticity. The results of the model indicate that fishery rent could be increased substantially above the current level by decreasing the size of all fleets, with the possible exception of the tuna longline fleet. The results also suggest that PICs could benefit significantly by changing the level and structure of access fees levied as a percentage of total catch revenue.

Van Santen and Muller (2000) present the case for a common approach to the management of tuna resources in PIC EEZs.

This report attempts to capture some of this complexity and focuses on economic aspects and political linkages of the access agreements PICs have negotiated with DWFNs. The paper reviews the potential effects of the draft Convention, its financial implications, and its impact on the ability of PICs to obtain maximum benefits from the tuna resource in the future. The report does not attempt to give ready, optimal solutions. This would require considerable additional analysis and consensus building. Instead, it tries to predict the impact of simple “approaches” to addressing the issues. Its key message is that PICs should carefully consider the risks of non-cooperation, and the advantages of cooperation when reviewing the draft Convention and when developing strategies for future tuna access agreements and negotiations.

The report by FIAS (2000) is about capturing economic benefits from tuna fisheries.

Decisions taken by PICs in recent years would suggest that, in many instances when attempting to apply mechanisms to achieve an appropriate balance, governments may have focused largely on the more obvious benefits to government and less so on the ramifications of use of those mechanisms for investment. Thus, it could be beneficial to governments, both in terms of securing greater national benefits and improving the environment for investment in these sectors, if they could be better informed of the range of options available to them and the implications to investors arising from the application of each. When would it be in their interest to choose policies relying on indirect methods rather than seeking returns from direct access charges? Several possibilities come to mind. If governments did not have a good system of spending and distributing the revenue raised, that might be one reason for going to indirect methods. Another might be that monitoring and control might be better facilitated by requiring fishers to come to port. Or it could be the case that there are other resources, such as port facilities, for which a rent might be charged. Indirect charges and policies that mandate actions that operators would not normally do, raise operating costs. This makes investment less attractive for foreign and domestic investors alike. It also means that the capacity of operators to pay access charges is reduced, thereby lowering government revenues. Whether such policies reduce total revenue depends on the value of the mandated activities. Policies that might appear to be improving economic well-being might, when the opportunity cost of the reduction in government revenue is taken into account, actually reduce the welfare of the nation as a whole. Foreign investment in fisheries and other natural resource sectors in the Pacific is likely to provide a source of capital and technological “know how” for many years to come. While it makes sense for PICs to gather in the returns due to them from utilisation of the fishery, too aggressive collection of rent will discourage investment. It is also the case that some policies, such as export taxes levied on unprocessed tuna, encourage investment in processing by effectively subsidising key inputs to local processing activity. Other, broader issues also stand to influence the choice of policy instrument and size of benefit. The capacity of PICs to manage their fishery
resources is one such issue. The “capacity to manage” the resource may be just as important as the fishery resource itself in terms of the ability for PICs to appropriate benefits from fishery utilization. Another issue is the relationship between PICs and DWFNs. The prospect of profits attracts investors to a particular location; however, experience has also shown that governments can do a lot to encourage foreign investment.

Pollard (1995) reports on a large FFA/ADB project to identify the key issues affecting the development of locally based tuna industries in PICs. The study was intended to develop options for encouraging the development of sustainable tuna enterprises beneficial to the local economies of FFA member countries.

In-country reports were prepared by three teams of consultants for nine FFA countries: Cook Islands, FSM, Fiji, Kiribati, Marshall Islands, Palau, PNG, Solomon Islands, and Tonga. Later, a regional report drew together common themes identified in the individual country reports. The results of the work, as given in “Tuna Industry Development Study – Regional Report”, indicated that a wide range of constraints deter investment and locally based industrialization. The particular nature of the tuna industry provides the perspective that must guide future investment and this calls for commercial, private sector led investment. Two themes or issues were common to the analysis of constraints: (1) The excessive and direct involvement of government in domestic industry to the detriment of sustainable, locally based industrialization, and (2) the protective nature of domestic economies, resources, and business interests with economies oriented to serving government rather than government serving wealth-creating locally based industry. The study concluded that, if the countries of the region want to establish a viable, sustainable, locally based tuna industry then their joint experiences to date dictate that this should be led by private sector investment. A fundamental reordering of the complementary roles and operations of government and private sector is required, and the region’s economies need to be restructured in support of investment. Given the nature of the industry and the status of the region’s domestic private sectors, initial direct foreign investment is essential. Previous experience suggests that the development of the industry should be gradual and phased, direct foreign investment could be employed to initiate this development, but past experiences of joint ventures can be improved upon by more careful planning.
Appendix 8: The US Tuna Treaty

In June 1988, the Treaty on Fisheries between the governments of certain Pacific Island states and the Government of the United States of America (the Tuna Treaty) came into force. This multi-lateral agreement provides U.S. purse seiners with nearly free roaming access to most of the waters of the 16 Pacific Island states that are party to the Treaty. The Treaty area encompasses the limits of the fishery, from Palau, eastward to the Line Islands of Kiribati, and the Cook Islands. This provides the U.S. fleet with a considerable advantage over fleets of other countries that remain geographically limited by domestic policies and/or bilateral access agreements.

The U.S. purse-seine fleet has a very strong ally in the U.S. government, which has a vested interest in maintaining the Treaty and good relations with Pacific Island countries that it engenders. Not only has the Treaty improved relations between the U.S. and Pacific Island countries, but it provides other benefits to the U.S. government from several perspectives. It enables the government to (a) obtain very good fishery management information from the fleet through access to fishery data and (b) further cooperation with the Pacific Island countries and the FFA through the cooperative operation of an observer program. It also facilitates the government’s implementation of flag state control. Indirectly, the existence of a U.S. presence in the fishery enhances the U.S. position when it interacts with other resource users (including Asian countries) in international tuna fishery discussions. The existence of the fleet can provide a broader basis on which to participate in such discussions than only the geographic position of its territories or the existence of its market.

The main advantages of the Treaty perceived by many in the industry are the reduced cost of access paid by vessel owners, the “industry contribution”, and the free ranging access to multiple zones. Compared with Asian fleets, which must purchase fishing licenses separately for several jurisdictions and are required to pay fees to each, the cost of a license under the Treaty can be seen as a bargain. From the fleet’s operational standpoint, the ability to seek tuna schools over a wide geographic area is a key requirement in purse-seine fishing. The access guaranteed under the Treaty enables vessels to move freely (with the exception of some internal archipelagic waters and closed zones) within jurisdictions in order to adjust to changes in resource abundance and availability. Administratively, the Treaty facilitates the fleet’s activities rather than hinders them. For example, once they are licensed, vessels must contend with only one access administering authority and abide by one set of rules that governs access in all Pacific Island jurisdictions. While restrictions and requirements are placed on the fleet, most of these are contained in the “minimum terms and conditions of access” adopted by Pacific Island countries, and must be adhered to in any licensing regime. The long-term nature of the Treaty reduces transaction costs for the fleet, and assures access to a high degree.

In exchange for the U.S. fleet having fishing access to the waters of 16 countries, Pacific Island countries receive an annual payment to all countries of US$21 million ($3 million from vessel owners, $18 million from the U.S. Government). Pacific Island countries share 15% of the total equally, with the remainder allocated according to the location of the catch. As the U.S. purse-seine fleet shrinks, Treaty payments — expressed as a percentage of the value of the catch — is rising. At one point in the early 1990s, there were 50 vessels in the treaty. During the annual license period, ending in mid-2007, there were only 11 vessels in the fleet. Those vessels landed about 70,000 metric tonnes of tuna worth about US$70 million. The access fees paid represented about 30% of the value of the catch.

\[2\] In March 2005, Pacific Island parties decided at their 17th annual consultation with the US in Tonga to apply a rebate scheme, whereby, a fixed license fee of US$133,000 per vessel is agreed.
From the beginning of the Treaty to mid-2006, the accrued financial benefits to Pacific Island parties to the Treaty is just over US$300 million. U.S. Government officials stress that the financial transfer represents more that just payments for access.

Source: Gillett et al. (2002); Ray Clarke (US National Marine Fisheries Service, pers. comm., October 2007)
Appendix 9: Fisheries Statistics in the Region

The situation with respect to fisheries statistics is very different between inshore/coastal fisheries and offshore fisheries. Information from SPC’s website, Gillett (2002b) and recent observations are given below.

Overall, the offshore statistical systems are in relatively good condition, both at a national and regional level. As a component to SPC’s fisheries services to the region, the Oceanic Fisheries Programme (OFP) has a Statistics and Monitoring Section. The activities of that section currently include:

- compiling estimates of annual catches of target tuna and billfish species;
- estimating annual catches of non-target species;
- compiling operational (logsheet) catch and effort data;
- data processing on behalf of member countries and territories;
- providing technical support to port sampling programs and observer programs in member countries and territories;
- training in fisheries statistics and database management;
- developing data collection forms;
- publishing the Tuna Bulletin and the Tuna Fishery Yearbook;
- statistical analyses; and
- providing statistical support to the Scientific Committee of the Western and Central Pacific Fisheries Commission.

Several of these activities are conducted by OFP under contract to WCPFC.

The situation with coastal fisheries statistics is considerably different. Typically, government fisheries agencies give low priority to estimating the total amount of domestic catches. In general, the smaller the scale of fishing, the less is known about production levels, with quantitative information being especially scarce for subsistence fisheries in most countries. Samoa, where a survey of village fisheries was completed a few years ago, is a notable exception. Short-term support to enhance fisheries statistical systems has been provided by FAO, SPC, and the National Marine Fisheries Service (NMFS), the Japanese International Cooperation Agency and other agencies. A major lesson from almost 25 years of support towards establishing and enhancing national fisheries statistical systems is that, once external support is withdrawn, systems usually degenerate and eventually become dysfunctional. Despite the importance of such data, the reality is that (a) in the prioritization of scarce government funding, the ongoing routine collection of fisheries data has not been accorded the appropriate priority, and (b) it is quite unlikely that any of donors active in the region’s fisheries sector would be willing to fund such systems over the long term. Another issue is that most countries in the region attach great important to their subsistence and small-scale commercial fisheries. However, it is these fisheries that present the greatest difficulties for the collection of production information. In addition, many fisheries specialists have questioned the cost-effectiveness and practicalities of regular and extensive data collection from small-scale fisheries in the Pacific Islands.

In summary, offshore fisheries catch statistics in the region are quite good, largely because of SPC’s involvement. Inshore fisheries statistics are quite poor for numerous reasons.
The 38th Pacific Islands Forum meeting was held in Tonga from 16–17 October 2007, and was attended by heads of state and the governments of the Cook Islands, Federated States of Micronesia, Fiji, Nauru, New Zealand, Niue, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu, and representatives of Australia, Kiribati, Palau, the Republic of the Marshall Islands and Solomon Islands. New Caledonia and French Polynesia also attended the formal session as Associate Members, and Timor-Leste, Tokelau, and Wallis and Futuna as observers. The Forum Retreat was held at Vava’u, Tonga. A representative of Venezuela also attended as a special guest of the Government of Tonga.

The communiqué issued from the meeting gave fisheries special prominence. Below is the section on fisheries from the communiqué, and a special annex dedicated to fisheries. Areas of special interest to this report are bolded.

**Fisheries**

Despite the considerable work undertaken to date to strengthen the region’s management of its highly migratory fish stocks, [Forum] Leaders believe urgent supplementary work is needed in specific areas. Fisheries represent one of the region’s strongest drivers for sustainable economic growth. As a source of both export revenue and food security, efforts must continue to maintain regional solidarity among Forum Members in their management of these fish stocks, particularly tuna. Greater effort to foster a long-term strategic approach to ensuring these resources are effectively managed will provide enduring benefits for all Forum Member countries. This approach must include the upholding and strengthening of existing regional arrangements, agreements and conservation measures that protect this essential resource in the face of threatened stock levels and intensifying global interest, particularly from distant water fishing nations. Leaders adopted a Declaration on Pacific Fisheries Resources (attached as Annex B).

**Annex B: The Vava’u Declaration On Pacific Fisheries Resources: “OUR FISH, OUR FUTURE”**

We, the Leaders of the Pacific Islands Forum, meeting at Vava’u in the Kingdom of Tonga:

RECOGNISING that our regional fisheries resources remain a key driver for sustainable economic growth in the region, especially for small island states, and that they must as a consequence be supported by responsible and effective stewardship;

RECALLING the commitment by Leaders under the Pacific Plan to maximise sustainable returns from fisheries by developing an ecosystem based fisheries management planning framework; encouraging effective fisheries development, including value-adding activities; and collaboration to ensure legislation and access frameworks are harmonised;

ALSO RECOGNISING the aspirations of Pacific Island countries to strengthen their engagement in sustainable fisheries and to maximise the flow on benefits from both domestic fisheries and foreign fishing operations in the region;

RECALLING in this context our 2004 call for closer Ministerial oversight of Pacific fisheries issues;

NOTING with appreciation and deep concern the report on the current state of Pacific fisheries provided to us by the current Chair of the Forum Fisheries Committee, at the request of the Committee’s 64th Meeting, held at Ministerial level;

COGNISANT of the significant economic opportunities which the regional fisheries resource offers to all our members, and of the comparatively low returns on the resource being achieved by countries in the region;

SEIZED by the scientific advice that over-fishing of two key regional tuna species —
bigeye and yellowfin tuna — now places stock levels in jeopardy;

CONSCIOUS therefore of the imperative need for us to take immediate and decisive collective action to ensure that, within the next three to five years, we secure our peoples’ future livelihoods, regional food security, and environmental sustainability of our seas and their ecosystems;

HEREBY reaffirm the importance of fisheries to the economies of all Pacific Forum countries, and commit ourselves to:

- PROMOTING DOMESTIC FISHERIES, in particular the development of national tuna industries, in the context of a phased introduction of rights-based management arrangements supported by an appropriate management and regulatory framework;
- DEVELOPMENT AND MANAGEMENT OF COASTAL/INSHORE FISHERIES and aquaculture to support food security, sustainable livelihoods and economic growth for current and future generations of Pacific people;
- MAINTAINING REGIONAL SOLIDARITY among Forum member countries in managing the region’s tuna stocks;
- STRENGTHENING OUR SUPPORT for the Forum Fisheries Agency, the Secretariat of the Pacific Community and other regional fisheries bodies as they intensify their efforts in applying a long-term strategic approach to Pacific fisheries, and in tuna species in particular, to ensure that these resources are effectively managed so as to provide enduring economic, social and cultural benefits;
- UPHOLDING AND STRENGTHENING the existing regional and national arrangements, agreements and conservation measures that protect this essential resource; and
- CONSISTENT with our earlier calls for the sustainable utilisation of fisheries resources, and with our concerns regarding food security for future generations, we further solemnly COMMIT ourselves and our governments to the conservation and sustainable management of highly migratory tuna resources by:
  - FULLY IMPLEMENTING without delay the conservation and management measures developed and endorsed by the Western and Central Pacific Fisheries Commission (WCPFC);
  - SEEKING THE URGENT ADOPTION OF ADDITIONAL MEASURES by the WCPFC to address over-fishing of bigeye and yellowfin, including a reduction in longline catches and addressing purse seine fishing, and specific steps to reduce the catch of juvenile bigeye and yellowfin;
  - RECOGNISING THE ASPIRATIONS OF SMALL ISLANDS DEVELOPING STATES to develop their domestic fisheries and CALLING ON DEVELOPED MEMBER COUNTRIES of the Commission to implement measures to support such endeavours;
  - DEVELOPING AND IMPLEMENTING, with the assistance of the Forum Fisheries Agency, a comprehensive regional Monitoring, Control and Surveillance (MCS) strategy;
  - INVESTIGATING AND TAKING APPROPRIATE STEPS as a matter of priority to strengthen, simplify and give full transparency to our national fisheries governance and licensing arrangements; CONTINUING SUPPORT as appropriate for the current tuna tagging initiative of the Secretariat of the Pacific Community, including the aspiration that it expand to cover the rest of the Pacific; and,
  - SUPPORTING AND ENDORSING efforts by the Forum Fisheries Agency, supported by the Forum Secretariat, to take forward as a matter of urgency work to examine the potential for new multilateral Pacific regional arrangements patterned on the Niue Treaty Subsidiary Agreement model for exchange of fisheries law enforcement data, cross-vesting of enforcement powers, and use of fisheries data for other law enforcement activities;
  - CONSISTENT with our previous
deliberations, REAFFIRM the Declaration on Deep Sea Bottom Trawling adopted at the 2006 Nadi Forum and WELCOME the subsequent UNGA Resolution 61/105 which called for strong measures to regulate and manage deep sea bottom trawling;

• COMMIT to the protection of high seas biodiversity and the conservation and management of non-highly migratory fish stocks in the Pacific Ocean;

• ENCOURAGE effective participation in the negotiations to deliver a best-practice South Pacific Regional Fisheries Management Organisation in view of the longer-term strategic significance to Members and the possible interaction of the high seas pelagic stocks with tuna resources governed by the WCPFC;

• AGREE TO RAISE THESE DEEP CONCERNS as a matter of urgency with Distant Water Fishing Nations (DWFNs) and regional coastal states participating in the Post-Forum Dialogue, and urge their close cooperation with our efforts; and

• REQUEST the Forum Fisheries Agency, the Secretariat of the Pacific Community, the Forum Secretariat and the Western and Central Pacific Fisheries Commission to jointly monitor progress in implementing these commitments, and reporting on this – especially progress in regional tuna management – under the Pacific Plan to Forum Fisheries Ministers and our next Leaders’ Meeting for further consideration.
Appendix 11: People Contacted

- Transform Aqorau, Deputy Director-General, Pacific Islands Forum Fisheries Agency (FFA)
- Len Rodwell, Manager of Economics and Monitoring Division, FFA
- Andrew Wright, Executive Director, Western and Central Pacific Fisheries Commission
- Tim Adams, Director, Marine Resources, Secretariat of the Pacific Community (SPC)
- John Hampton, Oceanic Fisheries Programme Manager, SPC
- Thomas Gloerfelt-Tarp, Head of Project Administration Unit, Asian Development Bank
- Bill Aalbersberg, Professor, University of the South Pacific (USP)
- Joeli Veitayaki, Associate Professor, USP
- Mike Batty, DevFish Project Coordinator, FFA
- Jonathan Manieva, DevFish Fisheries Development Officer, FFA
- Ian Cartwright, fisheries consultant, Thalassa Consulting
- Mike McCoy, fisheries consultant, Gillett, Preston and Associates
- Garry Preston, fisheries consultant, Gillett, Preston and Associates
- Sofia Bettencourt, Senior Natural Resources Economist, Southeast Asia and the Pacific Region
- Ray Clarke, Fisheries Biologist, US National Oceanic and Atmospheric Administration (NOAA), Fisheries Service, Pacific Islands Regional Office
- Roman Grynberg, Director Economic Governance, Pacific Islands Forum Secretariat
Optimizing Fisheries Benefits in the Pacific Islands: Major Issues and Constraints

May 2008