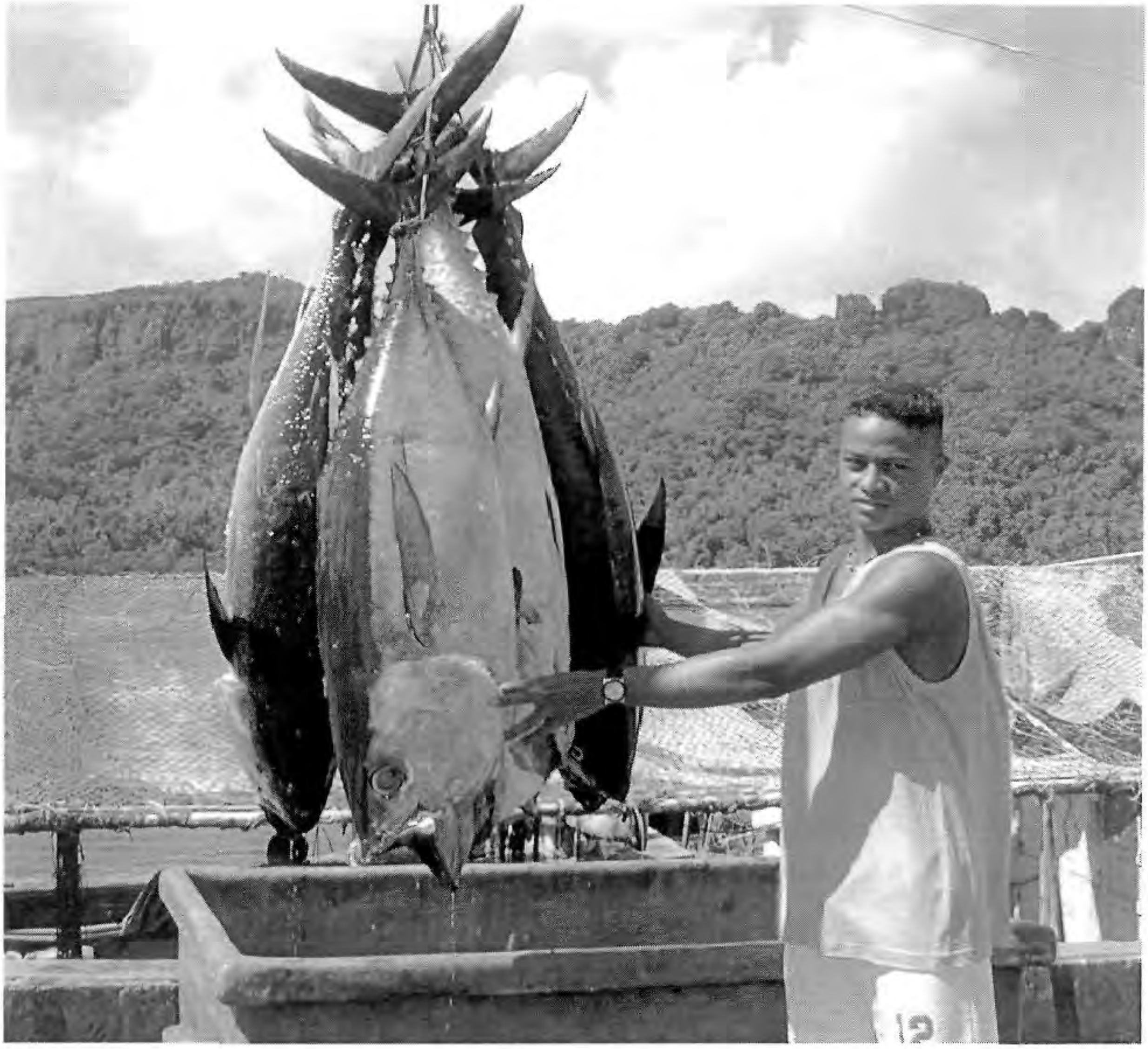
A Study of Tuna Industry Development Aspirations of FFA Member Countries



A Study of Tuna Industry Development Aspirations of FFA Member Countries

A report prepared for the Forum Fisheries Agency

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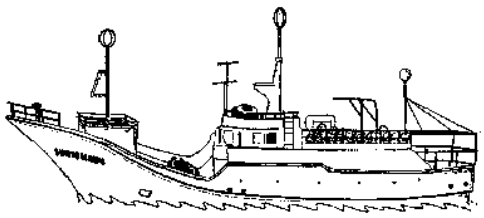


Executive Summary

The study

A review domestic tuna industry development aspirations was undertaken mid-March to early May 2008. The study included:

- Documentation of the domestic tuna industry development aspirations of stakeholders in FFA member countries
- Analysis of the impacts of various factors on development aspirations: access agreements, IUU fishing, and regionalism
- Analysis of the implications of the various forms of Commission management measures on the development aspirations

Purpose of this report

The overall purpose of this report is not simply to record aspirations – such documenting could easily work against the interests of Pacific Island countries as it could conceivably lead to attempts by DWFNs to freeze aspirations. The goal is to explore the issue of domestic tuna industry development aspirations and provoke discussion. This report is for FFA internal distribution and is not intended to be circulated in its present form to countries.

What is an aspiration ?

Many dictionary definitions associate aspiration with desire. For the purpose of this study, aspiration is defined as "a strong desire".

Aspirations and WCPFC

Although the term "aspiration" is used frequently in WCPFC documents and meetings, the *only* place where the term appears in the Convention is in Article 10: "In developing criteria for allocation of the total allowable catch or the total level of fishing effort the Commission shall take into account, ... [many factors, including]... the fishing interests and aspirations of coastal States, particularly small island developing States, and territories and possessions, in whose areas of national jurisdiction the stocks also occur".

Aspirations and associated perceptions

During the field work for this study, information related to domestic tuna industry development aspirations was collected from 108 stakeholders in all FFA member countries. The aspirations are documented in the report (in decreasing detail) in Appendix 3, Section 2, and in Table 1.

Some of the major aspirations

Six types of development aspirations were especially common: expanding the longline fleet/catch (12 countries), non-cannery value adding (11), new or expanded shore basing (7), small-scale development (7), expanding purse seine fleet/catch (7), and additional canning/loining (6).

Perceptions by officials of access agreement impacts

The views of fisheries officials are given in Table 2. In summary:

- Within a single country, there can be differing views by fisheries officials on the relationship between access arrangements and domestic tuna industry development.
- In several countries there is the situation in which fisheries officials contend that domestic tuna industry development should be pursued using licensing concessions, but this is over-ridden by government policies at a higher level.
- Many countries are struggling to balance two very different types of benefits related to tuna: government revenue from licensing versus jobs and spin-off benefits from domestic development.
- There is a large range in the flexibility that countries have in making concessions in access fees to promote development.

Access and development

It appears that the countries of the region can be placed in three categories with respect to resource endowment and access fees: (1) Countries that are well endowed with tuna resources but are not highly dependent on access fees: PNG and RMI, (2) Countries that are well endowed with tuna resources but are highly dependent on access fees: e.g. Kiribati, Tuvalu, Nauru, Solomon Islands, (3) Countries that are less endowed with tuna resources. It is no coincidence that most recent domestic tuna industry development in the region is occurring in the first category.

Change in development attitude

A decade ago there was a sentiment of resign in several countries that could be paraphrased as "we tried domestic tuna industry development and it failed so we will pursue the relatively simple access fees". In some of the same countries a different attitude now prevails: It has changed to "although we tried domestic tuna industry development, we used the inappropriate model of a government fishing company, so now we will use the leverage of access to promote foreign or joint venture development onshore".

Switching from access fees to domestic development	The contention that access agreements should give way to domestic tuna industry development is supported by most fisheries officials and by economic analysis and policy statements. Although total benefits of domestic development are likely to be greater, an important point is that they are in a different form, e.g. 100 jobs versus a million dollars of access fees. The beneficiaries also change. Consequently, there is likely to be varying degrees of institutional enthusiasm in the FFA countries for a change from the status quo.
IUU effects on development aspirations	It is difficult to objectively determine the degree to which IUU fishing affects domestic tuna industry development aspirations. The opinions of knowledgeable people may be the best source of information on the subject. Views obtained during the study suggest that currently the impacts of IUU on aspirations are not large.
Implications of regionalism on development aspirations	The results showed considerable variability, but some patterns emerged: • Fisheries officials of the region, especially those from small countries, feel that regionalism is important, if not essential, for domestic tuna industry development. • Managers of commercial tuna fishing companies in the private sector tend to be less enthusiastic about regionalism facilitating domestic tuna industry development. • *Certain regional initiatives were often mentioned by stakeholders and there tended to* be some geographic grouping in the comments.
The feasibility of the aspirations	If an aspiration is defined to be "a strong desire or ambition", it does not have to be demonstrated as feasible to be valid – any more than a desire must be capable of being fulfilled to be real. Following from this, it may be counter-productive to investigate the technical feasibility of the various aspirations, at least for WCPFC purposes. With respect to Commission matters, it may be more appropriate to consider "aspiration feasibility" only to the extent of demonstrating that the expressed aspirations are legitimate - in other words, that they are not fanciful or whimsical.
Recent evolution of domestic industry	Figure 1 in Section 4.2 shows the evolution in total numbers of locally based tuna vessels, export packing facilities, dedicated cannery/loining plants, and number of jobs at facilities ashore. Decreases can be seen in the numbers of longline and pole/line vessels. Increases are apparent in the number of purse seine vessels, canneries, and jobs at shore facilities. Most countries have the aspiration to expand longline activities, whereas Figure 1 indicates that the reverse has occurred in the mid-2000s. Most of the gains that have been made in recent years are in activities associated with purse seining, both catching and processing. Activities in PNG are responsible for almost all the recent gains.
Time horizon of aspirations	The aspirations of senior officials and senior managers often extend to only the end of their current employment which, for some people, is just a few years into the future.
Freezing and limiting aspirations	The short time horizon of many of the aspirations captured in this study and the changing nature of aspirations have major WCPFC implications. These two features give support to the contention that aspirations should be considered an evolving concept and that attempts to freeze them or "put a boundary around them" should be resisted as that would disadvantage Pacific Islands in their WCPFC negotiations.
Perceptions of the effects of management on aspirations (fisheries officials)	Senior fisheries officials interviewed in five countries were not focussed on the issue and were not able to offer views on the subject. In other countries, rather than give the effects on aspirations of WCPFC management measures that are likely in the future, the most common response of the senior fisheries officials interviewed was a philosophical discussion of why there should be no effects – because the WCPFC measures are not applicable, or should not be applicable. Most of the knowledgeable fisheries officials did not seem threatened by WCPFC management measures.
Perceptions of the effects of management on aspirations (industry)	The larger companies in the west and north of the region were more familiar with this issue than the smaller longline companies in the south, most of which could not offer any views – but were eager to obtain more information on the subject. Many of the local fishing companies that are familiar with WCPFC issues believe that measures to assure sustainability of the tuna resources are inevitable – and they offer management measures that do not affect them.
Exemptions from the management measures	The WCPFC currently has 17 binding decisions relating to conservation and management, five of which have provisions so that the legitimate rights and obligations of SIDS override the management measures.
***The value of the* exemptions**	*In one sense, the exemptions to the measures are extremely valuable – the planed* development would probably not occur if the measures are applied evenly across the western and central Pacific. In another sense, the exemptions may become less important - if WCPFC measures are not applicable in-zone, any exemptions from those measures have limited relevance to the countries' development aspirations.

Impacts of bigeye and yellowfin management measures

Tables 3 and 4 give the effects of the main management measures on the six major development aspirations. It can be seen that the effects of the various bigeye/yellowfin management measures on development aspirations are complex. It is not possible to make blanket statements on the desirability of the measures that are applicable to all FFA countries – suitability is specific to the sub-region or country level. Nevertheless, it can be stated that there is at least some PNA-related polarization of the effects of bigeye management measures on aspirations. A 50% reduction in longline effort would fall very hard on the aspirations of non-PNA countries and, to a much lesser extent, PNA aspirations. A 50% reduction in purse seine effort would have a positive or zero effect on aspirations of non-PNA countries, but have very negative impacts on the fishing and processing aspirations of PNA countries.

Impacts of general fisheries management measures

Section 5.4 gives the main impacts of the types of management measures the Commission is empowered to adopt: catch quantity limitations, fishing effort limitations, area and time limitations, fish size limitations, fishing gear and technology limitations. Thoughts on impacts of FAD and bycatch measures are also given. The management measures have a range of effects on PIC aspirations. Significant determinants include (a) the degree of importance that purse seining and subsequent processing of the catch has in aspirations, (b) the degree of importance that bigeye has in aspirations, and (c) the development model to be followed.

Catch limitation and effort limitation

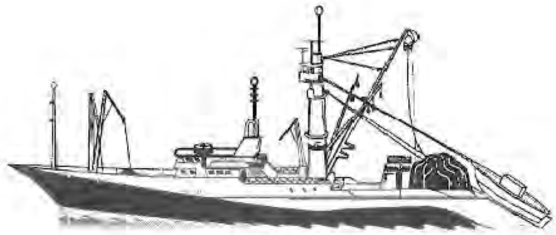
For catch limitation and effort limitation, many of the effects on aspirations appear to be similar. Both types of limitations seem to favor those fishers that have the most capital to fish fast or to fish efficiently but, other factors being equal, effort controls in the WCPO tuna fisheries appear to be more compatible with the economic efficiency and with the processing aspirations expressed by stakeholders in several PICs.

Effects of allocation type on aspirations

The impacts of several types of limits (e.g. restrictions on catch, effort) on aspirations are greatly affected by the basis on which the limits are apportioned. The limits could be a development opportunity or, alternatively, a major constraint on benefits - depending on whether the factor being limited is done so on the basis of the nationality of participants or by fishing zone.

Limiting the aspirations

Tuna industry development is very important in FFA member countries, and for some of the countries represents one of the few opportunities for economic advancement. The aspirations associated with this development are to some degree safeguarded by a provision in the Convention. Efforts by the DWFNs to delineate the aspirations may lead to limiting those aspirations and constraining critically important prospects for the future – leaving countries with less opportunities than was the case before the WCPFC was established.



1.0 Introduction

1.1 Background

FFA member countries have for a considerable period of time placed a high priority on the development of domestic tuna industries as a means of increasing the economic benefits they receive from the exploitation of tuna stocks. FFA member countries are, however, participating in the Western and Central Pacific Fisheries Commission (WCPFC) which has both current and planned measures to limit fishing effort – and this may have an effect on tuna industry development. To safeguard the interests of small island developing States, the WCPFC Convention has provisions that give special consideration to development aspirations.

In March 2008 FFA recruited a consultant to review the issue of domestic tuna industry development aspirations. That person was asked to carry out a number of tasks, including:

- Documentation of the domestic tuna industry development aspirations of stakeholders in FFA member countries
- Analysis of the impacts of various factors on development aspirations: access agreements, IUU fishing, and regionalism
- Analysis of the implications of the various forms of Commission management measures on the development aspirations

The consultant began his work in early March and made short visits to nine countries: Solomon Islands, PNG, Fiji, Tonga, Samoa, Tuvalu, Marshall Islands, FSM, and Kiribati. Telephone discussions were undertaken with individuals in the other countries.

In each of the countries visited, several stakeholders in the tuna industry were interviewed. This involved from five to twelve fisheries officers, other government officials, fishing industry participants, and other individuals from the private sector. For countries not visited, many senior fisheries officers were contacted at the FFA Negotiations Workshop in early April. Additional discussions were conducted with other stakeholders in those countries by telephone. The 108 people interviewed in the study are given in Appendix 1.

In order to establish a degree of consistency for the study, a time frame of 10 to 15 years into the future ("2020") was originally established. For reasons covered in a later section of this report, this time horizon was not always appropriate.

Some shortcomings of the study should be acknowledged. During interviews the spontaneous responses received from the stakeholders may be somewhat different had the respondents reflected on the issues over a longer period of time. Some senior fisheries officials preferred group discussions to individual discussions and this may have inhibited some individuals from express dissenting opinions. For some stakeholders, especially the managers of fishing/processing companies, commercial secrecy may have had an effect on the responses. In several countries, recently-appointed senior fisheries officials are unfamiliar with domestic tuna industry development issues and their expressed aspirations may not have the benefit of experience. The country-by-country basis of this report includes both large and small countries (e.g. PNG, Niue) and this may result in some distortion of the overall picture.

The overall purpose of this report is not simply to record aspirations. In fact, such documenting could easily work against the interests of Pacific Island countries - it could conceivably lead to attempts by DWFNs to freeze aspirations. The goal of this report is to explore the issue of domestic tuna industry development aspirations and provoke discussion on the subject and associated issues. Although this report is not intended to cover the strategies to be used in WCPFC negotiations, it contains background information that could be useful for those strategies.

As per the discussion with the FFA Director General, this report is for FFA internal distribution and is not intended to be circulated in its present form to countries.

1.2 Aspirations

1.2.1 What is an Aspiration ?

In preparation for a nuanced discussion of development aspirations, it would be appropriate to carefully define the term "aspiration". From an etymological perspective, this noun is derived from the verb "to aspire" which comes from French *espoir*, and originally the Latin *aspirare:* to desire (Word Reference, 2008).

Various dictionaries were consulted to obtain an appropriate definition of "aspiration":

- A strong desire for high achievement
- An object of such desire; an ambition
- Ambition: a desire or ambition to achieve something
- Ardently desiring; strong wish; high desire
- A cherished desire
- A strong desire or ambition, as for advancement, honor, etc.
- The thing so desired
- A strong desire to achieve something

Following from the above, many definitions associate aspiration with desire. Accordingly, for the purpose of this study, aspiration is defined as "a strong desire". This definition has implications for an examination of the feasibility of the various aspirations in Section 4.1 of this report.

1.2.2 Aspirations and WCPFC

Article 10 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean states:

> "In developing criteria for allocation of the total allowable catch or the total level of fishing effort the Commission shall take into account, ... [many factors, including]... the fishing interests and aspirations of coastal States, particularly small island developing States, and territories and possessions, in whose areas of national jurisdiction the stocks also occur".

The above is the *only* place in the Convention where the term "aspiration" appears. Similar terms are, however, used in the measures adopted by the Commission:

Conservation and Management Measure-2005-01:

> "Nothing in this decision shall prejudice the legitimate rights and obligations of those small island state Members and participating territories in the Convention Area **seeking to develop** their own domestic fisheries."

Conservation and Management Measure-2005-02:

> "..shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs in the Convention Area for whom South Pacific albacore is an important component of the domestic tuna fishery in waters under their national jurisdiction, and who may **wish to pursue** a responsible level of development of their fisheries for South Pacific albacore. "

Conservation and Management Measure-2005-03:

> ".....shall not prejudice the legitimate rights and obligations under international law of those small island developing State Members and participating territories in the Convention Area whose current fishing activity for North Pacific albacore is limited, but that have a real interest in, and history of, fishing for the species, that may **wish to develop** their own fisheries for North Pacific albacore in the future."

Conservation and Management Measure 2006-03:

> "….shall not prejudice the legitimate rights and obligations under international law of small island developing State and participating Territory CCMs, in the Convention Area who may **wish to pursue** a responsible level of development of their own fisheries for swordfish….."

Conservation and Management Measure 2006-04:

> "…shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs, in the Convention Area who may **wish to pursue** a responsible level of development of their own fisheries for striped marlin in the Convention Area…"

Although both types of wording[1] relate to special considerations for SIDS' future development, the Convention wording refers to something to take into account when allocating catch or effort, while the wording in the measures concerns exemptions from a management measure – which to date have not involved allocations.

The term "aspiration" is used frequently in WCPFC meetings. In the record of the fourth *Commission meeting in December 2007, the term appears 22 times, including:*

- In the opening statement by the chair of the Commission, mention was made of the outstanding issue of the aspirations of developing States and the need to support the legitimate development of fisheries by developing States without threatening resource sustainability.
- In the opening statement by the FFC chair, reference was made to the long standing position of FFA members that the right to determine who fishes in their waters and to develop their domestic industries within sustainable limits, is the most basic exercise of sovereign rights.
- In the opening statement by PNG a question was posed: "is this the way we want things to turn out to be, that is, for more and more focus to be on areas that are under national jurisdiction and burden the small island developing states with measures so as to derail their legitimate development aspirations whilst delaying implementation measures for the high seas?
- A proposal was introduced for a new management measure dealing with the aspirations of small island developing States
- There was agreement for a consultation for CCMs to further discuss strategies for promoting the development aspirations of SIDS members of the Commission to be organized for mid-2008

Subsequent to the above WCPFC meeting, the PNA discussed the issue of aspirations. The press release issued after the February 2008 meeting stated:

> "The Parties considered long-term options for the development of their fisheries and highlighted that their development aspirations was a matter which only they, as individual countries and collectively as members of the PNA, can determine."

This statement can be interpreted as an assertion that the Commission should not be involved in determinations relating to the aspirations of PNA members.

2.0 National Aspirations and Associated Perceptions

During the field work for this study, information related to domestic tuna industry development aspirations was collected from stakeholders in all FFA member countries. A detailed account of the aspirations and associated perceptions obtained in all the interviews has been prepared and are given in Appendix 3.

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[1] If there is any significance in this change of terminology (i.e. from the Convention requiring an aspiration to a measure requiring a wish), it appears that wording of the measures is less stringent. Consistent with many of the dictionary definitions above, a "strong desire" for development is associated with allocations, while only a "wish to pursue/develop" is associated with exemption from measures.

The following subsections attempt to condense the information obtained in interviews in each country to capture the elements and diversity of national domestic tuna industry development aspirations. In the cases where the countries were visited during the study, some observations related to the aspirations are made (e.g. initiatives underway that are related to the aspirations).

Because the methodology evolved to some degree as the study progressed, the country information is presented in the order in which the countries were visited.

2.1 Solomon Islands

Fisheries officials indicated that the major aspirations related to tuna are (a) to have several new loining plants in the near future; and (b) in the longer term, to have various forms of small-scale tuna fishing so that non-industrial Solomon Island fishers benefit by providing a substantial portion of the tuna throughput to the loining plants.

The two main commercial companies with involvement in fishing or processing of tuna have very different aspirations. One feels comfortable with the present size of the purse seine fleet and believes that the major future opportunities lie in fishing by Solomon Islands purse seiners outside the Solomon Islands zone and in taking advantage of relaxed rules of origin in tuna importing nations. The other company's main fishing aspiration is to establish new or improved labour-intensive tuna fisheries and to have all tuna caught in the Solomon Islands' zone processed in the country.

Some observations relating to the aspirations:

- As the two important industry players are not involved with longlining, there appears to be some sentiment of consensus against longline development, or at least no support for it.
- The vision set out for the tuna industry in the government's recent policy statement is consistent with many of the public/private sector views: (a) introduction of small-scale tuna fishing for rural residents, (b) setting up two new loining facilities, and (c) strengthening the government fishing/processing company for long-term survival.
- Initiatives are presently underway in all of these areas.

2.2 Papua New Guinea

The government fisheries agency has the view that the expansion of benefits related to tuna will mostly come from shore-side activity and therefore has aspirations to increase processing and create new facilities to service tuna vessels. This includes the concepts of (a) 100% processing of in-zone catches by three or four more canning/loining plants, (b) further afield, sourcing raw material from outside PNG to take advantage of relaxed rules of origin, and (c) providing all the necessary facilities deemed to be integral to the harvesting and processing of tuna at "marine parks". Increased employment of PNG nationals as crew is also a desire expressed by several fisheries officials.

The aspirations of many commercial fishing companies largely involve cautious expansion of fleet activity - both purse seine and longlining, as well as some small-scale tuna fishing. However, one major fishing/processing company indicated that, rather than catch more, the company will aim at processing more. Purse seine companies aspire to secure long-term access to the tuna resource which, as a result of government policy, is resulting in increasing shore-side involvement, including that related to canning/loining facilities.

Some observations:

- The government and private sector are presently carrying out activities related to the aspirations of canneries, fleet servicing facilities, and small-scale tuna fisheries.
- The driving factors behind much of the recent activity seem to be the "carrot" of relaxed EU rules of origin and to a lesser degree the "stick" of linking access to

onshore investment. In addition, there is the contention that, because of fuel price increases, processing closer to the fishing ground (e.g. in PNG) becomes more favourable.

2.3 Fiji

The views expressed by senior fisheries officials suggest an enhanced *status quo*: they aspire to have a fleet of 60 to 90 vessels in the local fleet (fishing in-zone), to have a total of 140 vessels based in Fiji, and to maintain a total of six fish export processing plants.

The management of the tuna cannery hopes to expand operation so that loining takes place in Levuka and canning in Suva. Their main aspiration is assuring an adequate flow of fish (mainly albacore) to the processing plant for both loining and canning. The largest local tuna fishing companies feel that tuna extraction from the zone cannot be increased significantly past the present level, and therefore their aspirations involve activities other than expansion of tuna fishing. The local companies cite various value-adding activities, fishing activities based on non-tuna species, and Marine Stewardship Council certification. A large Chinese fishing company indicates the desire to move at least some of its fleet to a processing factory they are constructing in Vanuatu, purportedly closer to the fishing grounds.

Some observations:

- The major fishing companies have considerable knowledge of the industry and their views on the future have been tempered by past experience in Fiji. Their aspirations seem realistic, or even conservative – but there could easily be an element of commercial secrecy involved.
- In the early 2000s there were some major tuna-related aspirations of the government that have since become less important or non-existent: indigenous participation in industrial tuna fisheries, developing a regional service centre to attract foreign vessels, and the establishment of a National Fisheries Corporation.

2.4 Tonga

Fisheries officials express the aspiration to have a fleet of 50 longline vessels ten years from now. They envision that the vessels will be both locally-owned and foreign-owned locally-based.

Most local tuna companies see an expansion of the longline fleet in the next decade. Depending on the firm, ideas on the size of the future fleet range from 29 to 40 vessels. These companies variously anticipate involvement in JVs, large offshore longliners, value adding, dedicated air-freighting, swordfish, and alternative fisheries. Some companies, however, have aspirations that extend only to surviving the present period of low profitability.

Some observations:

- The vision for the future is not very grandiose and in many cases, is even less than the number of vessels operating a few years ago. This is likely to be a result of the sobering performance of the longline fleet in the past few years.
- Many commercial tuna fishers in Tonga are not focussed on the long-term future of the industry, but rather short-term survival. Efforts to discuss the situation in ten years' time with industry invariably drifted back to discussions of the current situation.
- Most of the above observations apply to Samoa.

2.5 Samoa

Fisheries officials in Samoa recognize a number of realities associated with development aspirations: the small size of the Samoa zone and that the future of the existing fleet is closely tied to the fate of Pago canneries. The officials aspire to at least partially circumvent these factor by having a fleet of locally-based foreign fishing vessels licensed to fish only in high seas and by involvement with value adding – for fresh/frozen export markets and, should the Pago canneries close, for loins.

The development aspirations most often expressed by the commercial fishing companies are to modernize their vessels and to expand their operations into value adding, mostly of a non-specified nature. The representative of an *alia* association indicates that its members wish to obtain larger and more efficient vessels.

Some observations:

- Although all stakeholders are worried about the closure of canneries in Pago, nobody interviewed indicated that such a closure would be the end of the tuna industry in Samoa.
- Most commercial people in Samoa are not focussed on the long-term future of the industry, but rather short-term survival. Efforts to discuss the situation in ten years time with industry participants invariably drifted back to the current situation (like in Tonga).

2.6 Tuvalu

Tuvalu officials indicate that by mid-2009 a Tuvalu/Taiwanese JV will have its first purse seine vessel, followed by two to three in the future – which will fish under the FSM arrangement. In addition, the officials aspire to have a fleet of small longline vessels that will be owned/operated by locals "like what is happening in Samoa". Shore-based facilities will be established "to process for sashimi and canneries".

The new Master Plan for Fisheries Development states that the main hope is that, by offering access for tuna longliners on preferential terms (i.e. free licences for a number of years), an overseas company will be willing to register a company in Tuvalu, and employ Tuvaluan crew and management trainees.

Tuvaluans outside the government service that are familiar with tuna industry development are sceptical of the aspirations of officials. They cite high costs of operating from Funafuti, strong overseas competition, and limited benefits to Tuvalu of a purse seine joint venture. These individuals have much more modest aspirations that include an expanded troll fleet and low-technology tuna processing.

Some observations:

- ADB 2006 Tuvalu Economic Report (based on the implementation of the national development strategy, Te Kekeega II), makes little mention of domestic tuna industry development other than that the operations of NAFICOT should be wound up and that its assets be leased to a commercially viable joint venture.
- The very reasonable/pragmatic *National Master Plan for Fisheries Development* states that "many of the problems Tuvalu faces in the fisheries sector result from repeating mistakes that have already been made in other countries in the region, or even in Tuvalu itself".

2.7 Marshall Islands

The tuna-related aspirations of fisheries officials in the Marshall Islands are based on phasing out of distant water fishing, and replacing it with a functional locally based fleet. This would involve 10 to 15 RMI-flagged seiners within 10 years and a continuation/expansion of successful longlining from the fish base and airfreighting of fresh fish. Aspirations related to tuna processing include expansion of the loining plant to 80 tonnes per day within five years and eventually having all fish caught by locally-based vessels processed in the country.

Aspirations of the commercial fishing/processing firms relate to their line of business. The longline company envisions a significant expansion to 50 vessels from the 36 at present. The purse seine company aspires to increase the fleet to 10 vessels from the 5 at present. The operator of the loining company desires to increase the throughput from the planned 10,000 tonnes in 2008 to 25,000 tonnes annually. Both fishing companies can see an expansion of bycatch processing and other value adding.

Some observations:

- Action is presently underway in support of many of the aspirations.
- The substantial new infrastructure investments by both the operator of the purse seine vessels (US$43 million office/processing facility) and of the loining plant (major modifications to the old plant) suggest a long-term business commitment to the Marshall Islands, giving considerable credibility to their development aspirations.

2.8 Federated States of Micronesia

The tuna development aspirations of national-level officials include an expansion of existing purse seine company fleets (both Yap and Pohnpei based companies), an expansion of Pohnpei-type longline operations to the other three states (like at present but more/better), the present foreign interest in loining/canning intensifying to fruition, and increased transshipment. Other government officials aspire for more tuna development (both purse seine and longline) catalyzed by both larger aircraft landing facilities and by the elimination of straight DWFN access agreements.

The commercial fishing companies have very diverse aspirations. These consist of expansion of purse seine and longline fleets, greater use of skipjack resources, involvement in the international trading of tuna (once a critical volume of fleet catch is achieved), JV arrangements with vertically integrated tuna companies (to assure a real interest in processing, and establishment of a "Majuro-type" loining plant.

Some observations:

- There is a distinct lack of enthusiasm for government intervention to promote domestic tuna industry development. The stakeholders in FSM are keenly aware of past failures in government involvement and many contend that development will happen by itself without government involvement if there is a real opportunity.
- The major government stakeholders have a vast amount of experience with proposed and attempted domestic tuna industry development and are by no means naïve with respect to assessing feasibility.
- In general, the aspirations expressed by the government and by the commercial sectors are not very different.

2.9 Kiribati

Kiribati fisheries officials aspire to phase out DWFN fishing, and replace it with a fleet of purse seine, longline, and pole/line vessels. There are differing views on the type of ownership for these vessels: (a) "like in FSM, government owned but operated as private companies", or (b) JV ownership with the local partner being a semi-private entity as per the government's privatization policies ("stepping away from CPP"). Most officials interviewed visualize a fresh tuna export operation at Christmas Island and participation in a PNA/regional cannery in a country where the conditions are more favourable.

The aspirations of individuals associated with commercial fishing are largely oriented to longlining/export at Christmas Island, and to a lesser extent, purse seining in the Gilbert Group, with considerable diversity of views on disposing of the purse seine catch. Small-scale low technology processing of tuna was mentioned.

Individuals in both the government and commercial sectors feel that crew employment on foreign fishing vessels will increase. This aspiration is also reflected in the Kiribati Tuna Development and Management Plan.

Some observations:

- There are few private sector participants that are familiar with tuna industry development. The one person in this category interviewed for this study had aspirations very different from that of the government sector or government fishing company.
- Several of the major stakeholders were reluctant to discuss future aspirations.
- Aspirations related to crew employment is much greater in Kiribati than in any other FFA member countries.

2.10 Vanuatu

Present and former fisheries officials indicate that the two longline processing facilities under construction will result in a large increase in interest in longlining. In addition, all vessels licensed to fish in Vanuatu that do not offload in Vanuatu will pay significantly higher fees. These two factors will contribute to making the aspiration of having a substantial longline fleet based in the country a reality.

A major operator of longline vessels (who is building the tuna processing facility in Vanuatu) aspires to have a fleet of 25 to 45 longline vessels based in Port Vila within a few years – but he stresses that fleet survival will be the main aspiration for the next decade. The desire to increase the fleet based in Port Vila stems from the perception that the port is closer than Suva (where much of his fleet is based) to the longline fishing ground that he targets.

Some observations:

- The two longline facilities are already under construction and preparation for transferring vessels from Suva are currently being made.
- According to the Fisheries Department, the Vanuatu flagging of longline and purse seine vessels that do not fish in Vanuatu waters is quite a different issue from domestic tuna industry development.

2.11 Cook Islands

The head of the government fisheries agency aspires to raise the tuna longline catch from the present 2,000 to 3,000 tonnes to 6,000 tonnes within 10 years. In addition his aspirations include a fully domesticated longline fleet owned by Cook Islands nationals, capability in on-board processing, a high degree of offloading in Rarotonga for subsequent overseas shipment, and access to EU markets. On the other hand, a former fisheries official is quite pessimistic on the future.

A major operator of longline vessels aspires to have a cautious expansion of the longline fleet in the future. He does not envision an expansion of processing capability.

2.12 Palau

Aspirations for tuna industry development could be greatly affected by proposed legislation that would ban all foreign fishing activity in the Palau zone. The ban would take effect after existing fishing agreements with the three fishing companies expire in 2012. The idea is that the $3 million that Palau would lose in access fees would be mitigated by a $10 million trust fund set up by a conservation group.

In consideration of this scenario, there is currently the aspiration on the part of at least some government officials that Palau businesses could assume ownership of the fishing businesses - local companies would continue tuna fishing, processing, and exporting.

2.13 Nauru

Fisheries officials aspire to have expanded harbour facilities. A further aspiration is to use these facilities to catalyze the establishment of a locally based longline fishery and an associated fresh tuna export packing facility. Involvement with purse seining is a possibility. Another view (from a former fisheries official) stresses the importance of the sole opportunity for the future, artisanal longlining.

2.14 Niue

A senior fisheries official stated the aspiration that in 10 years Niue will expand its tuna catch to 3,000 tonnes - assuming present developments stay on track. This is currently thought to be the sustainable limit. To take this catch, a local fleet of 15 to 20 longline vessels will be required. After the 3,000 tonne limit is reached, monitoring of the stock condition may show that additional catch could be sustainable. With respect to processing aspirations, the maximum capacity of the present processing plant is 6,000 tonnes per year.

2.15 Tokelau

Government officials state that the major domestic tuna industry development aspiration in Tokelau is the phasing out of DWFN fishing activities and pursuing with vigor locally based longline fishing. This will require channel and wharf upgrading to enable local basing of the vessels. There is also a strong desire to have an ongoing FAD program. With respect to post harvest aspirations, two schemes are being considered: (a) having a mothership to transfer longline catch to Apia for sale on the Samoan market, and secondarily, the Pago market, and (b) having small fish processing plants on each island.

2.16 A Summary of National Aspirations

Any attempt at producing a simple summary of national aspirations in a field so complex as domestic tuna industry development will inevitably be an oversimplification. Nevertheless, a synopsis of the situation (Table 1) may give some insight as to the areas of focus and on the diversity of aspirations within and between countries.

Table 1: A Summary of National Aspirations Expressed During the Study

	Expand PS Fleet or Catch	Expand LL Fleet or Catch	Additional Canning Loining	Additional Other Type Value Adding[2]	Small-Scale Develop.	New Pelagic Fisheries	New or Expanded Shore Basing	Enhanced Trans-Shipping	Crewing	Other
Solomon Is.	XXX	XXX	XXX		XXX					
PNG	XXX	XXX	XXX	XXX	XXX		XXX		XXX	Marine parks for servicing vessels
Fiji			XXX	XXX		XXX				
Tonga		XXX		XXX		XXX				
Samoa				XXX	XXX	XXX				
Tuvalu	XXX	XXX		XXX	XXX		XXX		XXX	
Marshall Is.	XXX	XXX	XXX	XXX			XXX			
FSM	XXX	XXX	XXX				XXX	XXX		Larger runway for bigger planes
Kiribati	XXX	XXX		XXX	XXX				XXX	Participation in regional cannery
Palau			XXX							Purchase of fishing firms by local businesses
Nauru	XXX	XXX		XXX	XXX		XXX			Expanded harbour facilities
Cook Is.		XXX		XXX						On-board processing
Niue		XXX								
Vanuatu		XXX		XXX			XXX			
Tokelau		XXX		XXX	XXX		XXX			Channel and wharf upgrading

Bearing in mind the difficulties and limitations in compiling Table 1, a number of features emerge. The most common aspirations are expansions of longline fishing and additional value adding. All PNA countries (except Palau) and only PNA countries aspire to increase their purse seine fleets or catches. Few countries have express high aspirations for increased transshipping. Only three countries (all in the south) have desires to enter new pelagic fisheries. Small-scale tuna fishery development appears important in several countries.

2.17 Other Sources of Information on Development Aspirations

Additional insight on domestic tuna industry development aspirations is available from several sources:

- In the Management Options Workshop (October 2007, Rarotonga) information was compiled from FFA member countries on tuna management objectives – which could be considered as development and non-development aspirations. The report of the workshop stated: "There is a general shift in priorities over time, with most PICs indicating that the major economic benefits in the short term are from fees and food security, but that in the longer term, domestic development related objectives, especially onshore processing, are given greater weight, while fees and food security

[2] Fresh export packing, cutting/freezing for retail, jerky, etc.

are seen as less important in the long term. Tuna fishery related tourism is seen as more important in the longer term".

- At the PNA meeting in February 2008 Micronesian, Polynesian and Melanesian sub-groups discussed their individual aspirations and how they would fit into the hugely diverse but exclusive regional tuna club of members. This enabled some group consideration of the sub-regional similarities and differences.
- Campling et al. (2007) cite the domestic tuna industry development aspirations (as given in national tuna management plans) for PNG, Niue, Fiji, Tonga, Marshall Islands, and Samoa.
- Clark and Sheppard (1984) give domestic tuna industry development aspirations for 11 Pacific Island countries.

3.0 Impacts on Tuna Industry Development Aspirations

The terms of reference for this study call for an examination of the impacts of certain factors on the tuna industry development aspirations. The following sections give stakeholder perceptions of the effects on aspirations of IUU fishing, access agreements, and regionalism.

3.1 Impacts of Access Agreements on Development Aspirations

3.1.1 Perceptions of Stakeholders

Most stakeholders interviewed, especially fisheries officials, offered their views on the impacts of access agreements on development aspirations. The responses of fisheries officials[3] are given in Table 2.

[3] Unless otherwise indicated, the views given are those of fisheries officials.

Table 2: Impacts of Access Agreements on Development Aspirations

Country	Views of Fisheries Officials (present and former)
Cook Is.	• [Subject not relevant]
Fiji	• Not very relevant for development • Reduction of licenses for Taiwanese vessels supplying cannery has resulted in less throughput. Access arrangements are important for maintaining our level of development. (Pafco)
FSM	• The thinking of "thou shall not touch access fees" has given way to more development-oriented thinking by senior leaders. The government can get political credit for job creation and development can produce government revenue • Government is hesitant to interfere with revenue stream. In response to a recent proposal for major onshore investment, there was the expectation on the part of the government to be compensated for loss of access revenue • There is less access fee payments than in the past – political will is increasing for sacrificing some cash in order to have domestic tuna industry development
Kiribati	• Sometimes helps development, sometimes hurts development. Access arrangements have been used to facilitate development: fisheries training school, fisheries infrastructure. • Access arrangements should be used as a development tool, but government will insist that fee levels are maintained.
Marshall Is.	• Access fees are not that important for RMI, so the income stream from them is not as inhibiting for domestic development as in other countries • There is a balance between the government revenue stream and domestic development that may have a somewhat inhibiting effect on the enthusiasm • It was always intended that access agreements would be a transition to domestic tuna industry development
Nauru	• Access fees are important to the country but there is some flexibility to use the access agreements to encourage development
Niue	• In the past a policy of requiring all DWFN vessels to offload in Niue was considered: "If you fish, you must offload in Niue". The policy has been put on hold, but it is thought that the concept of using access to leverage domestic tuna industry development has some potential
Palau	• Most present domestic development is based on foreign fishing, but the government is considering phasing out of all foreign fishing
PNG	• Quite useful for promoting development: Future access will be tied to 100% offloading and later to onshore investment.
Samoa	• [Not relevant]
Solomon Is.	• As emphasis will be on domestic development, there will be less access. As domestic fishing goes up (with incentives), foreign fishing will go down. • Foreign fishing important for supply of fish to new/planned processing facilities, so do not want to *eliminate access arrangements (NZ project)*
Tokelau	• Access agreements are hurting domestic tuna industry development • Large amounts of money are passed under the table to facilitate these deals and this has a corrupting influence on fisheries governance
Tonga	• [Not relevant]
Tuvalu	• No real relationship between licensing foreign vessels and domestic tuna industry development – except that the need for access by aspiring entrants could leverage onshore development through JVs • Access fees are critically important to the government. No past support to domestic tuna industry development because government was worried that this could interfere with an important revenue stream.
Vanuatu	• The future licensing agreements are likely to require offloading in Vanuatu, hence they could contribute to development. • Bilateral access fees are important, but there is some flexibility in using access arrangements to promote onshore development – depending on the economics of the situation.

Several observations on Table 2 can be made:

- Within a single country, there can be differing views by fisheries officials on the relationship between access arrangements and domestic tuna industry development.
- In several countries there is the situation in which fisheries officials contend that domestic tuna industry development should be pursued using licensing concessions, but this is over-ridden by government policies at a higher level.
- Several countries are struggling to balance two very different types of benefits related to tuna: government revenue from licensing versus jobs and spin-off benefits from domestic development.

- There is a large difference in the flexibility that countries have in making concessions in access fees to promote development. Where there is the least flexibility, there appears to be greater perception that the current access arrangements inhibit development.
- The need for raw material from vessels licensed under access agreements to feed domestic processing is apparent (Fiji, Marshalls) and is likely to grow as domestic processing capacity increases.
- The importance of non-fee access compensation (e.g. infrastructure provided in association with access arrangements) for domestic tuna industry development was cited in only one country.

3.1.2 Some Additional Considerations

The recent FFA Access Negotiations Workshop (April 2008) discussed the relationship between access agreements and domestic tuna industry development. The general tone of the workshop conclusions on this subject was that access arrangements can and should used as a tool for promoting domestic development (Box1).

Box 1: Access and Domestic Development: Conclusions of the Access Negotiations Workshop

The FFA Access Negotiations Workshop:

- noted the strong link between control of access and domestic industry development;
- agreed that opportunities exist to include other economic benefits under access agreements such as offloading and employment;
- agreed that restricting allocation and choosing committed industry players has the potential to not only promote domestic industry development but also increase access fee returns and promote resource conservation;
- agreed that there was value in taking a regional approach to restricting access and promoting industry development; and
- identified the issues related to domestic development as being appropriate for consideration by Ministers at FFC67: (a) the need to signal to DWFNs that all agreements must transition towards more meaningful provisions for domestic industry development at all levels. This includes onshore processing and the service and supply sector; and (b) endorse the principle of restricting allocation and choosing committed industry players as the means of potentially promoting domestic industry development.

While not contradicting the results of the Workshop, the results of recent country visits during the present study give a somewhat different picture. It appears that the countries of the region can be placed in three categories with respect to resource endowment and access fees:

1. Countries that are well endowed with tuna resources but are not highly dependent on access fees: PNG and RMI
2. Countries that are well endowed with tuna resources but are highly dependent on access fees: e.g. Kiribati, Tuvalu, Nauru, Solomon Islands
3. Countries that are less endowed with tuna resources

It is no coincidence that most recent domestic tuna industry development in the region is occurring in the first category: new/enhanced processing facilities, expansion of purse seine fleets, and long-term commitments by commercial interests to the countries. This carries some suggestion that not all countries have the resources and flexibility to use their access arrangements for domestic tuna industry development.

Batty (2008) makes some sensible points on the relationship between access agreements and domestic tuna industry development:

- In the nine southern FFA countries, the four countries that have substantial access agreements have little domestic longline development while the five countries that have substantial development have no access agreements.
- Future strategies of using access agreements to promote domestic development will be: preferential access for domestic development, mandatory supply for

processing, increased inclusion of non-access fee benefits, and partial ownership of productive assets.

In conceptual terms, fishing effort licensed under access agreements can have adverse impacts on other fishing taking place in the same waters (Clark 2006). Conceivably, the foreign fishing activity permitted by access arrangements in the Pacific Islands area could have a negative effect on the current and future profitability of domestic tuna fishing in the region. Although in the last two decades domestic tuna fishers occasionally complain of being negatively impacted by large industrial foreign fishing operations, this was not a feature of the interviews carried out in the present study. When asked of the impacts of licensing agreements on domestic fishing, only one fisher interviewed (in Kiribati) stated that an important impact is that catch rates are affected.

Another observation from the country visits is a change of development approach in several countries. A decade ago there was a sentiment of resign in several countries that could be paraphrased as "we tried domestic tuna industry development and it failed so we will pursue the relatively simple access fees". In some of the same countries a different attitude now prevails: It has changed to "although we tried domestic tuna industry development, we used the inappropriate model of a government fishing company, so now we will use the leverage of access to promote foreign or joint venture development onshore".

The contention that access agreements should give way to domestic industry is supported by most fisheries officials and by economic analysis (e.g. DevFish reports) and policy statements. Although total benefits of domestic development are likely to be greater, an important point is that they are in a different form, e.g. a million dollars of access fees vs 100 jobs. The beneficiaries also change - the individuals/agencies that benefit from DWFN licensing are not necessarily the same ones that benefit from the broader domestic industry development. With respect to implementation of such a new regime, the use of access arrangements to leverage domestic tuna industry development represents a re-channelling of benefits. Among the PICs there is likely to be varying degrees of institutional enthusiasm for a change from the status quo.

With respect to conclusions of this study on the relationship between access agreements and domestic tuna industry development, a modification of sentiments expressed in Batty (2008) appears appropriate: Control of access can be an important tool for domestic industry development in some countries, while unrestricted access has probably hindered domestic development.

3.2 Effects of Illegal, Unregulated and Unreported Fishing

3.2.1 Perceptions of Stakeholders

IUU, as defined by FAO (FAO 2001), is a term that is very broad, and perhaps overly encompassing to be useful in the present study. Because most stakeholders interviewed for this study equate IUU in the tuna fisheries to simply illegal activity of foreign fishing vessels, the results in this section are reported accordingly; i.e. the perceived effects of illegal foreign fishing activity on domestic tuna industry development.

Responses obtained from the 108 people interviewed in the 15 countries showed considerable variation. The perceived effects of illegal foreign fishing activity on domestic tuna industry development varied from little or no impact to very important. Some generalizations can, however, be made.

Virtually all stakeholders indicate a paucity of data on which to base an informed opinion as to the level of IUU fishing and its impacts. Fisheries officials, especially those from the less-developed countries, generally perceive that there is more IUU fishing than the managers of commercial fishing companies. Examples of responses from fisheries officers in three small countries on the impacts of illegal fishing on domestic tuna industry development are:

- "Illegal fishing is having a major impact on domestic tuna industry development. Our fishers have noticed a major change in the behaviour of tuna and this has been attributed to illegal fishing in the zone"
- "Big problem because we cannot patrol our zone"
- "Although the amount of IUU fishing is not known, reports from people on the outer islands indicate that it is significant"

Fisheries officers from the more sophisticated countries characteristically are less disturbed about the domestic impacts of IUU fishing:

- "We do not know the level of IUU fishing and therefore even less is known about its effects on our development aspirations – but the "tuna dream" is not likely to be impacted.
- "Unlicensed fishing activity is probably not having a major effect on present domestic industry. The sum total of all misreporting by legal vessels is probably greater than the catch of all illegal vessels".

The exception to this observation would be Palau, where one official stated: "There is impact. Palau is closer to Asia than any other PIC and so is more frequently victimized by illegal fishing than other countries".

Few of the managers of commercial fishing companies based in the region (who presumably would be the main recipients of any harmful effects of IUU fishing on the domestic industry) are worried. The exception to this general observation would be in the Solomon Islands, where one company indicated that illegal fishing by licensed foreign vessels on the company FADs is a source of concern. Some of the observations by company managers on the subject of IUU impact are interesting:

- "Fish transfers between licensed vessels are the common illegal activity by the foreigners"
- "Only the odd illegal shark operation"
- "Any illegal fishing that occurs is focused on sharks and this could conceivably make tuna longline vessels more profitable".
- "Effect of illegal fishing is now not very large but it could be much more important in the future when the resource is more fully exploited"
- "We have occasional sightings of unlicensed vessels based in neighboring countries. This has little impact on profitability, but during periods of poor fishing, can have a negative impact on crew morale/productivity".

Two managers of large fishing companies offered thoughts on why some people feel that IUU fishing is large in the region:

- "Hysteria whipped up by Greenpeace creates the perception that IUU is large."
- "Unlicensed fishing is not important – countries of the region have been misled by Australia and New Zealand to believing that illegal fishing is important, when it is not significant. Why risk illegal fishing when it is so cheap to get license in so many countries?"

3.2.2 Effects of Illegal, Unregulated and Unreported Fishing – Some Thoughts

Apart from the above perceptions, what can be objectively stated as to the impacts of IUU fishing on development aspirations? To make such an assessment would require (a) an estimation of the amount of IUU fishing (*not known, but methodology is currently being developed*), and (b) an estimate of the current economic interactions of various levels of IUU fishing (*not known but methodology could be developed*), and (c) estimates of how current economic impacts could affect future developments (*would require some degree of speculation*).

It can be concluded that it is difficult to objectively determine the degree to which IUU fishing affects domestic tuna industry development aspirations. The opinions of knowledgeable people may be the best source of information on the subject. Views obtained during the study suggest that currently the impacts of IUU fishing on aspirations are not large.

3.3 Implications of Regionalism on Development Aspirations

For the purpose of this study, regionalism is defined as cooperation between Pacific Island countries in fisheries matters. The 108 individuals interviewed in this study were asked whether regionalism is important in fulfilling their domestic tuna industry development aspirations.

The results showed considerable variability, but some patterns emerged. Three of these features (and examples of stakeholder remarks) are:

1) Fisheries officials of the region, especially those from small countries, feel that regionalism is important, if not essential, for domestic tuna industry development:

- "Very important for domestic tuna industry development – only large countries can do it alone" [very common response]
- "Regionalism is helpful – and most important between adjacent countries. The PNA countries have very different resources and development aspirations from us."
- "Regionalism is important – and not just that mediated by FFA". Examples given of beneficial regionalism not mediate by FFA are the Melanesian Spearhead Group mediating fisheries trade, countries supporting Marshalls/Tuvalu in their efforts for the purse seine joint venture, and duty free entry of Tuvalu fish into Fiji
- "Cooperation among countries could be important in learning what not to do; avoid repetition of neighbour's mistakes in development".

2) Managers of commercial tuna fishing companies in the private sector tend to be less enthusiastic about regionalism facilitating domestic tuna industry development:

- "Not relevant"
- "The problems are complex and many are not addressable through regional cooperation."
- "Regionalism is mostly implemented through fishery officers - and they have other agendas than domestic development"
- On the other hand, two fishing company managers (generally perceived to be industry leaders) feel regionalism is quite important to them: "Our attendance at regional meetings is testimony to belief in regionalism for development purposes" and "Good for fish sanitary requirements, PITIA initiatives, and marketing".

3) Certain regional initiatives were often mentioned by stakeholders. There tended to be some geographic grouping in the comments:

- Many stakeholders (both public/private sectors) in the west and north of the region indicated that the FSM Arrangement and VDS are powerful tools to promote domestic tuna industry development.
- PITIA was only specifically mentioned in the southern countries.
- The potential regionalism in air freighting of fresh tuna arose in Kiribati and Tonga, where there was recognition of the value of cooperating - but "nobody to organize it".
- "Abuse of the FSM Arrangement" appears to be a favourite complaint of individuals from outside the region.

Recent FFA regional initiatives to promote tuna industry development include analysis of export processing zones (e.g. Madang Industrial Marine Park) and reciprocal access arrangements for locally-based longline vessels. The results of the present study show:

- Reaction to the value of the recent sub-regional initiative on reciprocal licensing was polarized. Fisheries officials generally think the concept is marvelous, whereas commercial operators (with one important exception) dismiss the scheme.
- Apart from PNG, only stakeholders in Kiribati and Nauru stated that the Madang Marine Park would be important for their industry development.

4.0 Observations on the Aspirations

4.1 The Feasibility of the Aspirations

The terms of reference for the present study make reference to assessing the feasibility of the development aspirations of the stakeholders. While not disputing the wisdom of exploring this topic, it should be noted that an aspiration, if defined to be "a strong desire or ambition", does not have to be demonstrated as feasible to be valid – any more than a desire must be capable of being fulfilled to be real.

Following from this, it may be counter-productive to investigate the technical feasibility of the various aspirations, at least for WCPFC purposes. With respect to Commission matters, it may be more appropriate to consider "aspiration feasibility" only to the extent of demonstrating that the expressed aspirations are legitimate[4] - in other words, that they are not fanciful or whimsical.

Possibilities for demonstrating that an aspiration is not fanciful include showing that:

- Initiatives are currently underway in pursuit of an aspiration. A example is Tuvalu's aspiration to have a purse seine fleet and the arrangements that have already been established with the Taiwanese company.
- Private sector participants are investing their own money in an aspiration: RD's investment in the Madang Marine Park.
- The aspiration is essentially an enhancement of the current situation: the increase in employment of Kiribati men on foreign fishing vessels.
- The aspiration is based on a substantial comparative advantage: processing aspirations in PNG that are based on relaxed EU rules of origin
- The required infrastructure is in place or likely to become available: the establishment of a longline fleet in Vanuatu will be catalysed by two processing plants presently under construction.

It may be useful at this point to generically comment on those schemes that may fall into the fanciful category. These include aspirations that:

- Defy basic economic sense or are dependent on massive subsidies
- Are based on substantial infrastructure that is not likely to become available

During the country visits for this study some of the aspirations that could be considered fanciful include:

- The establishment of fresh export tuna fisheries to be undertaken by a government fishing company at a location where air freight is prohibitively expensive, where parts/expertise for repairs are unavailable, and where a similar scheme has recently failed.

[4] The WCPFC resolution on the reduction of overcapacity (Resolution 2005-02) makes reference to "legitimate aspirations of developing island State members to develop their domestic tuna fisheries". [emphasis added]

- Fleets of government-owned tuna vessels jointly managed by multiple national fishing companies
- Industrial tuna fleet establishment at locations that lack a suitable harbour
- Small-scale tuna fishers providing raw material for industrial processing plants alongside purse seine suppliers

4.2 Extrapolation of Industry Status

Another way of gaining some insight into thr feasibility of the various domestic tuna industry development aspirations could conceivably involve examining recent evolution in the industry in the region and extrapolate those changes into the future.

Appendix 2 gives the industry status in the countries of the region in 2002, 2006, and in early 2008. Figure 1 below shows the evolution in total numbers of locally based vessels (longline, pole/line, purse seine), export packing facilities, dedicated cannery/loining plants, and number of jobs at facilities ashore[5]. Decreases can be seen in the numbers of longline and pole/line vessels. Increases are apparent in the number of purse seine vessels, canneries, and jobs at shore facilities.

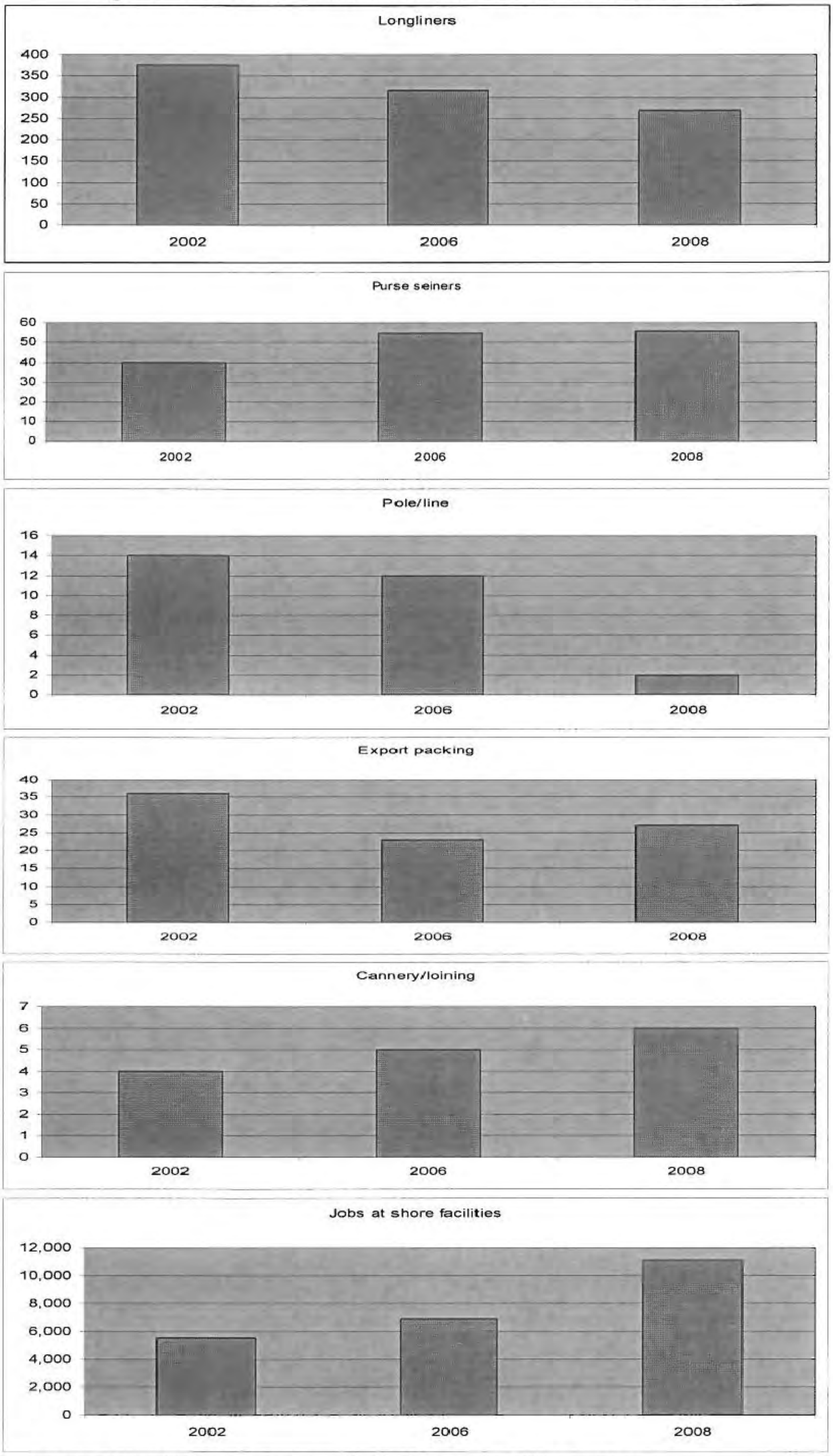
What does this tell us about feasibility ?

- Table 1 above suggests that most countries have aspirations to expand longline activities, whereas Figure 1 indicates that the reverse has occurred in the mid-2000s
- Most of the gains that have been made in recent years are in activities associated with purse seining, both catching and processing. These are largely based on skipjack and, to a much lesser extent, yellowfin. Bigeye is not a resource base of this aspiration but, ironically, measures to conserve bigeye may interfere with the fulfilling of the aspiration.
- Activities in PNG are responsible for almost all the recent gains: purse seiners, canneries, and jobs ashore.

On reflection, the concept of projecting current industry trends into the future does not appear as useful as anticipated for gaining insight into aspiration feasibility. These trends tend to be volatile and extrapolation for more than a few years would be tenuous. On the other hand, the trends give support to the feasibility of those aspirations related to processing and purse seining.

[5] The change in number of jobs is not shown because it is distorted by the volatile alia fleet and it was not possible to extract the alia-related jobs.

Figure 1: Recent Evolution of the Domestic Tuna Industry



Source: Appendix 2; Units – number of individual vessels, facilities, and jobs

4.3 Time Horizon of Aspirations and Evolution of Aspirations

An important observation made during the study concerns the time frame for the aspirations. Discussions with FFA indicated that the "10 to 15 years into the future" would be the appropriate time frame. The initial field work revealed that few stakeholders interviewed have such a long time horizon. The aspirations of senior officials and senior managers often extend to only the end of their current employment which, for some people, is just a few years into the future. Those people involved in fisheries with current low profitability mostly offer thoughts related to short-term survival, rather than long-term aspirations. Even when stakeholders were encouraged to extend their time horizon during interviews, it is suspected that the time frame in their minds was not very long-term.

Aspirations change with time. Just a few years ago Fiji aspired to have an industry with substantial indigenous control/participation and a regional service centre attracting foreign vessels. These aspirations have since become less important or non-existent. Most of the national domestic tuna industry development aspirations given in Clark and Sheppard (1984) for 11 Pacific Island countries have changed significantly – as another example of Fiji shows:

> Fiji is planning a continued expansion in the fishing operations of its national fishing company, Ika Corporation, through acquisition of more pole and line vessels and possibly seiners, and through expansion of facilities for unloading, storing and processing associated with the operations of the joint venture company, PAFCO. Consideration is also being given to the construction of a second cannery.

In the last few years domestic tuna industry development has assumed a much higher profile in many Pacific Island countries. It is likely that technological innovations will create new opportunities relevant to the tuna industry. For example, Tuvalu may be able to take advantage of ULT shipping containers to overcome difficulties that have thwarted the development plans of a generation of fisheries officers. Other factors, such as scarcity of access, may motivate potential JV partners to propose activities and make concessions unthinkable only a few years ago.

The short time horizon of many of the aspirations captured in this study and the changing nature of aspirations have major WCPFC implications. These two features give support to the contention that aspirations should be considered an evolving concept and that attempts to freeze them or "put a boundary around them" should be resisted as that would disadvantage Pacific Islands in their WCPFC negotiations.

4.4 Additional Observations

A few additional observations on aspects of domestic tuna industry development aspirations can be made.

It is interesting to note some of the items *not* included in the aspirations expressed during this study:

- Several women were interviewed during the study, but no gender aspects of aspirations were mentioned.
- Although food security and sportsfishing were mentioned as aspirations in the October 2007 Management Options Workshop, they were not cited during the present study.
- A recent World Bank study indicated that equity participation by PICs in a large vertically integrated fishing/processing/distributing company is a major opportunity, but this apparently is not recognized as a development opportunity by those individuals interviewed.
- There was no sentiment that the expressed aspirations by one country could be in competition with another PIC.

A recent study of capacity in Pacific fisheries (Hannich et al. 2008) cited "Lack of fisheries development vision" as one of 26 governance and institutional gaps and weaknesses that significantly challenge fisheries management and development. The present study came up with a slightly different perspective on the issue. Rather than a "lack of development vision", a major feature is the short time horizon of the aspirations.

5.0 Effects of Management Measures on Aspirations

5.1 Stakeholder Perceptions of the Effects of Management Measures on Aspirations

Most of the individuals interviewed during the study were asked for their views on how WCPFC management measures would affect their aspirations for domestic tuna industry development. As expected, there was great diversity in opinions, ranging from a well-articulated and logical explanation of anticipated impacts, to indicating a complete lack of knowledge of the subject. Despite this variation, some interesting patterns did emerge from the interviews.

The most pronounced feature is the large difference in views between government fisheries officials and the private sector. Taking the **fisheries officials** first, there appear to be two main types of responses:

Senior fisheries officials interviewed in five countries were not focussed on the issue and were not able to offer views on the subject.

In other countries, rather than give the effects on aspirations of WCPFC management measures that are likely in the future, the most common response of the senior fisheries officials interviewed was a philosophical discussion of why there should be no effects – because the WCPFC measures are not applicable, or should not be applicable. Various types of justification were offered[6]:

- The DWFNs created the mess of over-exploitation, so they should clean it up [a common comment]
- WCPFC is only applicable in the high seas
- The country is outside the zone where the measures are likely to be applicable
- National management measures are in place, so the country is insulated from WCPFC management measures
- The WCPFC priority should be on placing controls on the high seas (where there is no management), rather than in-zones (where there is at least some management)
- Effort can be reduced within the framework of the Palau Arrangement

Some well-considered responses of senior fisheries officers did not fall into the above two categories:

- "As for the future, the effects of WCPFC measures may be limited. This is because (a) our main target species is albacore, (b) PICs have certain exemptions from Commission management measures, and (c) The current national bigeye quota of 2,000 tonnes is very large for our country."
- "Do not see incompatibility between our aspirations and WCPFC management measures. We can increase our domestic fishing capacity by reducing foreign access."

[6] Exact quotes are not given but rather a paraphrasing in order to capture the essence of more than one similar response.

As for the perceptions of the **private sector** on how WCPFC management measures would affect their aspirations for domestic tuna industry development, some generalizations can be made:

The larger companies in the west and north of the region were more familiar with this issue than the smaller longline companies in the south, most of which could not offer any views – but were eager to obtain more information on the subject.

Many of the local fishing companies that are familiar with WCPFC issues believe that management controls to assure sustainability of the tuna resources are inevitable – and they subsequently offer management measures that have little of no effect on their own operations:

- A company that operates old/small seiners recommends gear restrictions that would affect new/big seiners
- Longline operators suggest controls on purse seiners
- Seiner companies recommend the use of VDS rather than FAD controls
- "Threshold quotas" that are set high enough so they are unlikely to affect a national catch

Other views of the private sector:

- Many purse seine companies are worried about FAD controls. Two companies contend that any national FAD management measures in place (even those not related to tuna resources conservation) would insulate a country from WCPFC FAD management measures.
- A very successful longline operator in Fiji favours economically efficient management measures: limit on the number of vessels, rather than limiting the efficiency of domestic vessels with such controls for longlining as VDS or seasonal closures.
- Two vertically integrated Chinese companies offered unique perspectives when asked about the impact of management controls on aspirations: (1) "The only resource of the country is tuna which does not require controls for sustainability. Can save the country OR save the ocean"; (2) "Exemptions for PICs will undermine effectiveness of management measures because it is easy for DWFNs to set up phoney JVs"
- Private sector companies with substantial interest in tuna processing seem only focussed on the flow of raw material to their facilities, rather than on the control of specific fishing activities.

What can be concluded about stakeholder perceptions on how WCPFC management measures would affect their aspirations ?

- It is notable that when asked of the management measure impacts, only one official (and nobody from the private sector) mentioned the exemptions allowed in the convention for national tuna industry development aspirations.
- Most respondents who are knowledgeable enough to offer views were more focused on what management measures should be implemented, rather than on the impacts of actual or proposed measures.
- Most of the knowledgeable fisheries officials did not seem threatened by WCPFC management measures.

This final point could be a situation of those officials being comfortable with doing their own in-zone management, and influencing/impacting WCPFC measures on the high seas – rather than the reverse (L. Clark, per.comm.)

5.2 Exemptions from the Management Measures

5.2.1 Current Exemptions

The WCPFC currently has 17 binding decisions relating to conservation and management. Several of those place restrictions on fishing activities, and SIDS are exempt from most of the restrictions. Box 2 gives the five management measures in which the legitimate rights and obligations of SIDS override the management measures.

Box 2: Exemptions from MCPFC Management Measures

Conservation and Management Measure-2005-01:

"Nothing in this decision shall prejudice the legitimate rights and obligations of those small island state Members and participating territories in the Convention Area seeking to develop their own domestic fisheries."

Conservation and Management Measure-2005-02:

"..shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs in the Convention Area for whom South Pacific albacore is an important component of the domestic tuna fishery in waters under their national jurisdiction, and who may wish to pursue a responsible level of development of their fisheries for South Pacific albacore".

Conservation and Management Measure-2005-03:

".....shall not prejudice the legitimate rights and obligations under international law of those small island developing State Members and participating territories in the Convention Area whose current fishing activity for North Pacific albacore is limited, but that have a real interest in, and history of, fishing for the species, that may wish to develop their own fisheries for North Pacific albacore in the future."

Conservation and Management Measure 2006-03:

"....shall not prejudice the legitimate rights and obligations under international law of small island developing State and participating Territory CCMs, in the Convention Area who may wish to pursue a responsible level of development of their own fisheries for swordfish....."

Conservation and Management Measure 2006-04:

"...shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs, in the Convention Area who may wish to pursue a responsible level of development of their own fisheries for striped marlin in the Convention Area..."

Two management measures have "semi-exemptions" that are applicable PICs:

- CMM 2006-05 on sharks places a number of restrictions (e.g. full utilization of sharks) but gives special consideration to coastal states (not just SIDS) in their own waters: "Nothing in this measure shall prejudice the sovereign rights of coastal States to *apply alternative measures for the purpose of exploring, exploiting, conserving and* managing sharks, including any national plan of action for the conservation and management of sharks, within areas under their national jurisdiction". Of relevance to SIDS exemptions, the measure applies at the initial stage only to vessels greater than 24m overall length.
- CMM 2006-01 on bigeye/yellowfin stipulates that, beginning in 2007, CCMs shall take necessary measures to ensure that the total capacity of their respective other commercial tuna fisheries for bigeye and yellowfin tuna, including purse-seining that occurs 20 north and 20 south, but excluding artisanal fisheries and those fisheries taking less than 2000 tonnes of bigeye and yellowfin, do not exceed the average level for the period 2001-2004 or 2004.

5.2.2 Some Considerations in Dealing with Exemptions

Strictly speaking, the exemptions to allow for SID development do not flow from the aspirations provision in the Convention. The only mention of aspirations in the Convention states that aspirations are something to be taken into account when "developing criteria for allocation of the total allowable catch or the total level of fishing effort".

However the Convention has other (slightly vague) provisions that allow for exemptions for SIDS:

- It recognizes SIDS' "economic and social dependence on highly migratory fish stocks".

- It states that the management measures should be "based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States".
- It states that the "Commission shall give full recognition to the special requirements of developing States Parties to this Convention, in particular small island developing States, and of territories and possessions, in relation to conservation and management of highly migratory fish stocks in the Convention Area and development of fisheries for such stocks".

In one sense, the exemptions[7] to the measures are extremely valuable. In theory, such restrictions create scarcity which in turn creates value that Pacific Island countries could take advantage of. Judging from interviews with stakeholders, much of the domestic tuna industry development in FFA member countries likely to take place in the near future (e.g. expansion of longlining and purse seining) would probably not occur if the restrictions are applied evenly across the western and central Pacific.

In another sense, the exemptions may become less relevant. At the recent WCPFC Chair's Meeting in Canberra, the PNA countries and other Pacific Island countries expressed disappointment with the failure of the Commission to establish effective management measures in the high seas. They indicated they would apply several management measures in their EEZs from 2009 and, in the future, PNA Members/PICs, not the Commission, will adopt and apply measures for their EEZs, allowing the Commission to focus on its two main jobs: addressing overall stock status, limits and standards, and applying compatible measures in the high seas (PNA/PICs 2008). In such a scenario, if WCPFC measures are not applicable in-zone, any exemptions from those measures have limited relevance to the countries' development aspirations. Any exemptions granted to PICs for high seas fishing activities would, however, still remain important.

In Section 5.1 above it was noted that, when asked of the impacts of WCPFC management measures, only one government official (and nobody from the private sector), mentioned anything about the exemptions for SIDS in the measures. While this could be related to the lack of value they attach to the exemptions, another explanation could be that they assume that the WCPFC measures do not apply to the EEZ of PICs.

Some of the views obtained during the study on the future of exemptions from individuals who are affiliated with DWFNs are noteworthy:

- "Exemptions for PICs in the future will undermine effectiveness of WCPFC management measures as it is easy for DWFNs to set up phony J/Vs in almost any PIC" (Manager of Chinese fishing/processing company)
- "PIC exemption from WCPFC management measures is not the default position – all need to be specified in the measure" (representative of NOAA Fisheries)
- Controls placed on bigeye fishing "should apply to all commercial fisheries, including longline, purse-seine, hand-line, pole and line, ring-net and troll fisheries, that may have effects on the bigeye and yellowfin tuna resources, but excluding artisanal fisheries" (Ho, 2008)

As stressed by Les Clark (per.com.), eventually exemptions must give way to something more comprehensive. PICs having perpetual exemptions from management measures is not consistent with long term sustainable use. Ultimately, *ad hoc* exemptions need to be replaced by arrangements that more comprehensively accommodate the sovereignty, sovereign rights and the right to participate in high seas fisheries of SIDS/PICs, through which they can pursue their development aspirations.

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[7] The issue of the change of wording from the originally proposed "shall not apply .. " to that of the adopted text "shall not prejudice .." is covered in Clark (2007).

5.3 Impacts of the Various Bigeye and Yellowfin Management Measures

International fisheries management entails both costs and benefits for the countries involved. The challenge for FFA member countries is to maximize the gain and minimize the pain. The latter can be reduced by exemptions from measures (Section 5.2 above), while the choice of management measure can have an effect on both gains and pains for participating countries.

Several types of bigeye and yellowfin management measures are being contemplated for introduction by WCPFC. A paper prepared for the Management Options Workshop held in Rarotonga in 2007 (FFA 2007) indicates that discussions on options for a measure for bigeye and yellowfin conservation and management in 2007 in the Scientific Committee, TCC and FFA Sub-regional Management Options Workshops have focused on: catch retention, FAD closures, and longline bigeye catch limit reduction. Other measures have been proposed or considered in different contexts, but for a range of reasons, including feasibility, FFA (2007) only considers in detail catch retention, FAD closures, and longline bigeye catch limit reduction.

Table 1 in Section 2.16 of this report summarizes the domestic tuna industry development aspirations of FFA member countries, giving ten categories of aspirations. Six types of development aspirations were especially common (more than five countries expressing the same type of aspiration). These aspirations are: expanding the longline fleet/catch (12 countries), non-cannery value adding (11), new or expanded shore basing (7), small-scale development (7), expanding purse seine fleet/catch (7), and additional canning/loining (6).

A crude attempt to assess the effects of the three management measures on the six major development aspirations is given in Table 3.

Table 3: Some Effects of Bigeye and Yellowfin Management Measures on Aspirations

	Expand LL Fleet or Catch	Additional Other Type Value Adding[8]	New or Expanded Shore Basing (PS and LL)	Small-Scale Develop.	Expand PS Fleet or Catch	Additional Canning Loining
Catch retention	Few negative effects; Not entirely sure it will be effective - have positive effects on BET yield or CPUE	More small size fish available for processing	Little effect on LL; Small fish more plentiful at PS bases	Additional small fish on market negatively affects small-scale tuna fishers	Large negative effect on US-style PS fishing Negative effects on most PS fleet operation types during low fish prices. The "not fit for human consumption" provision tends to negate effectiveness for BET conservation.	More raw material available
FAD closures	More bigeye available for fresh export	Few negative effects (little non-can/loin processing of PS catch) More bigeye available for fresh export	No negative impact on LL fisheries Longer trips by PS vessels – possibly less time spent in port	Negative effect if no FADs available	Little effect on Korean-style PS fishing – but (a) no PIC domestic operation has adopted this style, (b) recently Korean vessels are increasing use of FADs due to fuel costs Major and increasing negative effect on most PS fleet operation types - fuel cost increases are resulting in greater use of FADs	Major impact on raw material supplies to light meat canning/loining facilities
Longline bigeye catch limit reduction	Major negative impact on BET and ALB LL fisheries	Major impact on flow of material to fresh tuna export operations	Negative impacts on LL basing No impacts on PS basing	Little impact	No negative impact	Negative impact on flow of raw material to white meat canning/loining facilities

Notes: Assumes no exemptions; Dark shading indicates negative impacts; Lighter shading indicates somewhat negative impacts.

[8] Fresh export packing, cutting/freezing for retail, jerky, etc.

From the table it can be seen that the impacts of the various bigeye/yellowfin management measures with respect to development aspiration are complex. It is not possible to make blanket statements on the desirability of the measures that are applicable to all FFA countries – suitability is specific to the sub-regional or country level. This sentiment is consistent with FFA (2006): any management measure adopted by the WCPFC is likely to have widely varying impacts between areas and fleets.

FFA (2007) is a document that provides additional insight into the impacts of management measures on development aspirations. The document gives the impacts on yield of four different types of measures for bigeye/yellowfin management. Table 4 goes further and attempts to identify the impacts of those yield/CPUE changes on aspirations and gives some comments about some geographic differences[9].

Table 4: Impacts of Types of Effort Reductions on Yield and Aspirations

Type of effort reduction	Yield Impact (Tonnes per annum)	Yield Impacts on Aspirations (gain/pain)	Other Effects on Aspirations
25% across the board	ALB: -9,600 BET: 900 SJT: -126,700 YFT: -900	LL fisheries of the equatorial PICs, especially in the west LL fisheries of the southern PICs PS fisheries in the PNA countries Canning/loining all PICs	There is an overall large increase in BET and YFT longline CPUE – largest in western equatorial area; about 2/3 of the yield reduction is in SIDS waters
25% FAD use cut	ALB: 0 BET: 2,600 SJT: -23,700 YFT: -4,200	LL fisheries of the PICs Crew employment PS fisheries in the PNA countries Canning/loining in the PNA countries Small-scale development Other value adding	Only small increase in BET and YFT longline CPUE; about 2/3 of the yield reduction is in SIDS waters; Tuvalu and Tokelau and Kiribati/Phoenix zones would be the PS fisheries most affected by FAD fishing measures; Jarvis and Kiribati/Line would be least affected[10].
25% Purse seine effort reduction	ALB: 0 BET: 3,800 SJT: -126,700 YFT: 1,000	LL fisheries of the equatorial PICs Non-canning value adding PS fisheries in the PNA countries Canning/loining in the PNA countries	Only a small increase in BET and YFT longline CPUE; about 2/3 of the yield reduction is in SIDS waters
25% LL effort reduction	ALB: -9,600 BET: -3,600 SJT: 0 YFT: -7,600	LL fisheries of the PICs Other value adding Crew employment	Moderate increase in BET and YFT longline CPUE; only 30% of the yield reduction is SIDS waters

From Table 4, the following is notable:

- Yield impacts do not give the full picture; CPUE changes and geographic variations add additional complexity to the impacts of management measures.
- Assessing the present impacts on the existing industry involves considerably less speculation than impacts on future aspirations.
- Longline effort reductions do not have much positive impact on aspirations related to purse seining, but purse seine effort reductions promote tropical longlining aspirations.
- With respect to employment, measures that impact purse seining have an effect on aspirations related to shore jobs. Measures that impact longlining largely have an effect on aspirations related to on-board jobs. It is important to note that such shore employment is presently an order of magnitude greater than on-board employment.
- The table emphasizes the trade-offs between purse seining and longlining

Following from the last point, there is at least some PNA-related polarization of the effects of bigeye management measures on aspirations. In Section 2.16 above, it is shown that all FFA

[9] Caution should be taken when making geographic inferences (e.g sub-regional) from this information – stock-wide assessment models have been used to generate the data.
[10] According to information in Hampton (2008b).

member countries (except Palau, Fiji, Samoa) desire to expand longline fishing. All PNA countries (except Palau) and only PNA countries aspire to increase their purse seine fleets or catches. As indicated by Hampton et al. (2007), large reductions in longline and/or purse seine effort are required to achieve at the level that gives MSY for bigeye:

LL 50%, PS 0%
LL 40%, PS 15%
LL 30%, PS 30%
LL 20%, PS 45%
LL 10%, PS >50%
LL 0%, PS >>50%

A 50% reduction in longline effort across the board (at the top of the scale), would fall very hard on the aspirations of non-PNA countries and to a much lesser extent PNA aspirations. A 50% reduction in purse seine effort (at the bottom of the scale) would have a positive or zero effect on aspirations of non-PNA countries, but have very negative impacts on the fishing and processing aspirations of PNA countries.

5.4 Impacts of General Fisheries Management Measures

The above section examines the impacts of management measures associated with conserving bigeye/yellowfin in the WCPO. Such management is considered to be the most urgent for the tuna resources of the region and is presently receiving much attention. Management of the tuna fisheries for other objectives is also important at present and its significance – and impacts on development aspirations - is likely to grow in the future. Accordingly, the following section discusses several general types of management measures and associated impacts on domestic tuna industry development.

Several different approaches can be utilized for looking at the impact of specific management measures on domestic development aspirations. One is to examine the effects of specific measures on present industry activities, then speculate as to the effects on similar activities in the future. Another approach is to examine the effects of specific measures on development models, such as nurturing domestic entrepreneurs, or encouraging partnerships with overseas companies. Although the terms of reference for this study encourage the former approach (and hence the flavor of the discussion below), the importance of the second approach should be recognized. Much of the major domestic tuna industry developments now occurring (e.g. processing facilities in PNG, RMI, and Solomons) are based on large overseas companies wishing to secure access to the resource - because of perceptions of future difficulties of resource access. Following from this, management measures that generate scarcity of access to the resource (and give PICs the discretion to allocate access as they see fit) are favorable to domestic tuna industry development aspirations.

It is important to note that this study (and the subsequent discussion) is oriented to the various forms of *Commission* management measures. Although tuna fisheries can be managed for a variety of objectives, the Commission's management is restricted to the objectives specified in the Convention. The primary objective is to ensure long-term sustainability of the resources, but also includes the goals of minimizing waste/discards and the capture of non-target species, and protecting biodiversity. The Convention indicates that the Commission may adopt measures relating to, *inter alia*

- The quantity of any species or stocks which may be caught;
- The level of fishing effort;
- Limitations of fishing capacity, including measures relating to fishing vessel numbers, types and sizes;
- The areas and periods in which fishing may occur;
- The size of fish of any species which may be taken;
- The fishing gear and technology which may be used; and
- Particular subregions or regions.

Prior to a discussion of these specific management measures, several points should be made:

- Several papers (e.g. Clark 2007) and meetings (e.g. the 2007 Rarotonga Management Options Workshop) have discussed in detail the impacts of various management measures, sometimes including the impacts on current industry. The thoughts below contain many sentiments previously expressed, with some additional thoughts on the subject, including insight obtained during the stakeholder interviews for this report.
- The discussion below does not focus on the practicality or effectiveness of a measure, but rather, on the potential impact on development aspirations if the measure is in place.
- Many of the impacts given below are generalized and do not apply to all tuna fisheries in the PIC region.
- Exemption from a measure obviously changes its effect on development aspirations. Unless otherwise noted, the points below refer to a situation where there is no exemption. Some additional thoughts on exemptions are subsequently given.
- Thoughts on the issue of flag/zone applicability of the measures (which has a large effect on their impact) - are also provided.

5.4.1 Catch quantity limitations

This is an output-type management control and can be applied to the target tuna as well as bycatch[11]. Joseph (2003) explores catch limitation as a tuna fisheries management tool and indicates that a major characteristic is that it encourages fishers to "race to take as large a share of the quota as they can before the quota is reached". This feature gives rise to many economic issues, but of relevance to PIC industry development aspirations, catch limitation tends to favour those vessels and companies that have large/fast vessels and efficient gear – something that is capital intensive and likely to be scarce in PICs both now and in the foreseeable future. In the longline fishery, the "race to fish" confers some advantage to geographic proximity to the resources. However, after a quota is filled, large DWFN longliners have more mobility to get to regions/areas where the fishing is still open, while the characteristically smaller PIC vessels would have more difficulty. From the social perspective, Pacific Islanders would find the longer fishing trips during the open season much less appealing than shorter trips. On the post harvest side, for some tuna fisheries of the region, after a quota is filled, the small processing operations and operations based in remote locations (like many PIC-based facilities are) must compete for raw material with large/efficient facilities worldwide. With respect to MCS, PIC vessels can be expected to come under greater scrutiny because their generally smaller size leads to more frequent port calls, while the DWFN competition could turn the less frequent monitoring into an advantage. It should be noted that the small/old PIC tuna vessels of today (and on which some of the comments above/below are focussed) may not be always the case in the future – with examples of this being the new Tuvalu and RMI seiners. Another consideration in the WCPFC context is that the impact of catch limitations depends on how the limited catch is allocated, with allocation by flag and allocation by zone being possibilities. If the latter is the case, there is the potential for the PICs to allocate in such a way as to encourage domestic tuna industry development.

The managers of local longline and purse seine fishing companies (both foreign locally-based and local) interviewed during this study were generally not in favour of catch quantity limitations, often citing their economic inefficiency. However, (a) the manager of the large longline company in Majuro saw an "overall quota for WCPO" as the lesser of many evils; and (b) the manager of a small longline company in Samoa stated "There are advantages of a quota system – vessels could shift into other fishing activities".

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[11] Bycatch controls are discussed separately below.

5.4.2 Fishing effort limitations

This is an input-type management control. Joseph (2003) explores fishing effort limitation as a tuna fisheries management tool and indicates that a major characteristic is that it encourages fishers to adjust their fishing practices, or the performance of their vessels, to improve efficiency in order to increase their share of the available catch. As with catch limitation, effort limitation favours those fishers that have the greatest resources to innovate to improve efficiency (e.g. catch the maximum amount per day, per hook, etc.) and thus may work against capital-scarce PIC fishing operations. The tendency for fishing vessels to increase their fishing power is referred to as "capital stuffing" or "effort creep" and could be a constant threat to competing PIC operations. On the other hand, effort limitations do not produce the inefficient "race to fish" characteristic of catch limitations – and tend to have a more favourable impact on rent in a fishery. Effort limitations do not result in such pronounced periods of lack of raw material that place disproportionate hardship on PIC processing operations. As with catch limitations, an important consideration for promoting development is the basis on which effort allocations are made, with the VDS being a zone-based effort limitation system. As stated by Clark (2007):

> "The VDS is specifically designed to create a more competitive environment for purse seine access within which operators will compete for limited fishing days through their participation in domestic development and payment of access fees."

The commercial managers interviewed during this study appeared to be slightly more in favour of effort limitations than catch limitations. The manager of CNFC in Fiji/Vanuatu stated that he favours limitation of longline effort by number of hooks. Managers of NFC and Koos (in FSM and RMI, respectively) favour the VDS for limiting purse seining.

5.4.3 Fishing capacity limitations

The WCPFC Convention gives the Commission the power to "adopt measures relating to......limitations of fishing capacity, including measures relating to fishing vessel numbers, types and sizes". Consistent with this wording, there appears to be a tendency in the WCPFC process to associate fishing capacity to vessel numbers. It should be understood, however, that the concept of fishing capacity and its measurement can be quite complex and considerably more involved than simply the number of vessels in a fishery (Box 3).

Box 3: Different Understandings of "Fishing Capacity"

Different groups of people generally have a different understanding of capacity. Fishing technologists often consider fishing capacity as the technological and practical feasibility of a vessel achieving a certain level of activity – be it days fishing, catch or processed products. Fisheries scientists often think of fishing capacity in terms of fishing effort, and the resultant rate of fishing mortality (the proportion of the fish stock killed through fishing). Fisheries managers generally have a similar view of fishing capacity, but often link the concept directly with the number of vessels operating in the fishery. Many managers express fishing capacity in measures such as gross tonnage or as total effort (e.g. standard fishing days available). Most of these ideas reflect an understanding of capacity primarily in terms of inputs (an input perspective). In contrast, economists tend to consider capacity as the potential catch that could be produced if the boat were to be operating at maximum profit or benefit (an output perspective).

Source: Metzner (2004)

Restrictions on the numbers of vessels allowed to participate in a fishery are an input control. In tuna fishery management it often takes the form of a moratorium on fleet growth and is generally done in conjunction with catch or effort limits. Clark (2007) states "the CCMs of less competitive and attractive fleets can be expected to propose capacity limits that would protect existing fleets, and obstruct arrangements that would threaten to displace them". Indeed, in preparation for defending their position, the United States in the last few years has funded several initiatives that document the fishing capacity growth in longline, purse seine, and pole/line WCPO fleets. With respect to development aspirations, this management measure tends to lock-in and lock-out participants, creating difficulties for aspirants. On the other hand, appropriate vessel restrictions can lead to greater fishery profitability for all participants – but the partitioning of the increased rent is not always favourable to PIC domestic tuna industry development aspirations. As with limitations on catch/effort above, the allocation of the numbers of vessels (flag vs zone) is an important issue.

The managers of longline companies interviewed during this study were more enthusiastic about fishing capacity limitations than other management measures. Three managers of well established longline companies in Fiji/Samoa stated:

- "Favors economically efficient management measures: limit on numbers of vessels, rather than limiting the efficiency of the vessels that are fishing"
- "Not focused on this subject but intuitively a cap on vessel numbers seems best"
- "Conceptually a limit on vessel numbers seems the best"

Operators of purse seine vessels who were interviewed[12] and who expressed an opinion on appropriate management measures, did not cite capacity limitations. One operator of small/old seiners felt that gear restrictions would be more favorable to his company than capacity restrictions.

5.4.4 Areas and time limitations

In WCPO tuna management the limiting of fishing areas (either permanently or during specific periods) has involved excluding tuna fishing operations to protect a variety of species and/or activities: gamefish next to resort and sportfishing areas, artisanal fishers next to islands, sharks near dive sites, and national tuna fishing operations in internal waters. It could conceivably be extended to cover "hot spots" such as where juvenile bigeye are especially common around FADs, where there is a high prevalence of turtles in the longline catch, or where a high proportion of purse seine sets is on cetaceans . In recent years there has been increased discussion on the use of high seas large-scale protected areas for ecosystem-based management purposes (e.g. Worm et al., 2003). The desirability of wholesale closure of high seas areas to tuna fishing was often mentioned in discussions with stakeholders during this study.

The relevance of this type of tuna management to tuna industry development aspirations include:

- The protection aspect above has a favourable impact on aspirations, as many of the features being protected are related to aspirations expressed during this study.
- "Hot" spots are often used for important resource conservation purposes, but they can work against the aspirations in countries where those hot spots occur. Compensatory mechanisms may be needed for those countries that make a sacrifice for the net benefit of all PICs.
- Large-scale restrictions could have negative implications for processing operations that rely on continued supplies of raw material from geographic areas that include closures.
- As "closing the high seas" was cited during the study as being important for some tuna industry development aspirations, there may be some potential for linking this concept to the idea of large-scale protected areas in the open ocean - a rare case where the interests of industrial developers and environmentalists coincide.

The high seas are a special case of area limitation. Clark (2007) describes the impact of such WCPFC measures on PICs:

> With respect to participation in high seas fisheries, under the limits on numbers of vessels fishing for south Pacific albacore and swordfish south of 20^0S, Pacific Island

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[12] The managers of Diving Seagull and Caroline Fishing Company operate old/small vessels but were not available for comment during the study.

Countries would be locked out of developing their fisheries for those species in the high seas south of 20^{0}S. In the same way, under the high seas purse seine effort limits, new entrants to the fishery such as Tuvalu would never be allowed to fish in the high seas when they acquire purse seiners because they never fished there in the past; and Pacific Island countries with growing purse seine fleets such as Marshall Islands and PNG would be limited to past low levels of fishing in the high seas, while the established fleets would continue to enjoy historical levels of fishing in the high seas.

Time limitations in tuna management in the region are not as common as area restrictions. Among the few examples are: (a) plans to introduce a three-month third quarter FAD closure in PNA countries and (b) some discussion on closing specific periods to various types of fishing activity: restricting fishing during certain moon phases to reduce the capture of certain species (e.g. bigeye, turtles) and restricting purse seining at dawn to discourage fishing on floating objects that would tend to capture more juvenile tunas. With respect to industry development aspirations, the obvious challenge is to construct a temporal closure to accomplish its objective in such a way that its impact is relatively favourable (or at least not unfavourable) on PIC aspirations.

The only case in which PIC industry stakeholders cited the desirability of time limitation as a tuna management measure was in Samoa, where some company managers indicated that a closure during the first quarter of the year would not affect their operation. Some processors mentioned that large-scale time restrictions could have negative implications for their operations.

5.4.5 Fish size limitations

Fish size limitations have limited applicability to tuna fishery management in the WCPO: (1) There has been a suggestion (Dalzell 2008) of a minimum size for longline bigeye, and (2) Conceivably, there could be a ban on seining small tuna or a catch limit on small tuna. The implications of these measures on fishing aspirations are not readily apparent. There is the possibility that a ban on the taking of small tuna would be favourable for the PIC canning/loining operations as they characteristically obtain less yield from small fish than canneries in SE Asia. No stakeholder mentioned fish size limitation in this study.

5.4.6 Fishing gear and technology limitations

Fishing gear and technology limitations (FADs are covered in the next section) tend to favour those fishing operations that have less sophisticated vessels and associated equipment. In general, Pacific Island domestic tuna fleets are not "state of the art", but comprised of older/cheaper vessels that are less efficient in their catching and in their fuel use[13]. For purse seining, the DWFN vessels tend to be bigger, carry more fish, have deeper nets, and use more advanced electronics than the vessels owned by PIC companies. For longlining, the situation is made more complex due to the diversity of fishing activities, but the Asian-based vessels tend to be larger and more technologically efficient[14] than their PIC competitors. Fuel costs and the innovations associated with reducing fuel use are likely to play a dominant role in any restructuring of fleets to occur in the next few years.

Management measures that limit gear/technology would therefore tend to have a positive impact on the competitive ability of PIC tuna fleets. There are, however, some issues to consider that may affect applying this concept to promote aspirations:

- By agreement, WCPFC measures cannot simply promote inefficiency. Article 5 of the Convention states: "The Commission shall adopt measures to...... promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques". Ideally for PICs, the management measure involving a gear

[13] As mentioned in the section on catch limitation, there are important exceptions to this generalization such as the RMI and Tuvalu seiners.

[14] High labour costs (e.g. Japanese long-range longliners) and other factors tend to lower the overall efficiency.

limitation would serve a higher level objective (e.g. reduce bigeye mortality or bycatch) and in doing so, discourage the use of a technology that is not prevalent in PIC fleets. An example of this could be deep purse seines (deeper on new DWFN fleets) that catch more bigeye[15].
- What is favourable to today's PIC tuna industry (banning certain technology) may work against domestic tuna industry development aspirations in the future. For example, discouraging large vessels may limit the ability of PICs in the future of fishing the high seas – where the PICs may have a real comparative advantage due to low labour costs and relative proximity to the fishing areas.
- The development model of limiting access to encourage local basing may result in the desire on the part of very sophisticated vessels to be based in the region – if management rules do not ban their advanced technology.

Not many of the managers of commercial fishing companies interviewed during this study had comments on using gear/technology limitations as management measures. The two that did are:
- A purse seine company manager in the Solomon Islands commented: "Unlike our vessels, new seiners have deeper nets, so gear restrictions could be favourable to us."
- The manager of a large fishing company in Fiji indicated that he favours economically efficient management measures and he considered gear restrictions as counter-efficient.

5.4.7 FAD limitations

There is general recognition by PIC fisheries officials that to address the bigeye over-fishing issue, some form of restrictions on purse seine fishing around FADs[16] is required. By contrast, the operators of nearly all seiner companies interviewed in this study had FAD restrictions (and how they could avoid them) foremost in their minds when discussing Commission management measures. Some of the considerations on how FAD limitations can affect tuna industry development aspirations are:
- Tuvalu and Tokelau and Kiribati/Phoenix zones are the purse seine areas that would be most affected by FAD fishing measures. Jarvis and Kiribati/Line would be the least affected (Hampton 2008b).
- The Korean purse seine fleet makes the least use of FADs, but in the era of rising fuel costs, even their dependence on FADs is becoming large.
- Old and small seiners, such as those based in the Solomons and FSM, are especially dependent on FADs.
- At WCPFC3, FFA Members did not support a FAD closure, largely on the ground of uncertainty about how a FAD closure would affect vulnerable FFA Members. This vulnerability was not based solely on domestic industry considerations, but also on the effects on access fees.
- FADs are not necessarily evil – it is their use in purse seine fishing that results in increased fishing mortality of bigeye. FADs are one of the few innovations that allow small-scale fishers to economically take advantage of the region's tuna resources – and little of the small-scale catch is bigeye.
- The increase in bigeye CPUE that would presumably accompany FAD restrictions would impact positively on some of the longline fisheries, but those gains are likely to be overall much smaller than the losses in the purse seine fishery. The gains/pains in restricting FADs would be very different between PNA and non-PNA PICs.

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[15] The contention that deep nets catch more bigeye (advanced by NFD in the Solomons) is not shared by all. D.Itano (per.com.) indicates that his research has shown that bigeye and yellowfin all come up shallow in the pre-dawn time to are vulnerable to even the so called "low tech" fleets. Deeper nets in the WCPO can be an advantage to the ability of a boat to exploit free schools of skipjack and yellowfin – which contain less bigeye.

[16] The term FAD is used in this report as in CCM 2005-01: "any man-made device, or natural floating object, whether anchored or not, that is capable of aggregating fish".

Because FAD use increases as fuel costs escalate, the scenario of virtually no non-FAD purse seining in the region is a real possibility. Any types of blanket restriction on the use of FADs are therefore likely to have a large negative effect on all purse seine operations and possibly the associated processing operations. There are several possibilities for mitigating the effects of FAD restrictions on PIC aspirations:

- Exemptions for seining operations: a blanket spatial exemption on all in-zone areas or more limited exemptions on archipelagic waters, territorial seas, or areas characteristically fished by PIC seining operations.
- Exemptions for artisanal and sports fishers.
- Although "hot spots" have been a subject of discussions of FAD restrictions, "cold spots" should also be considered. PIC purse seine FAD fisheries that can be shown by verified observer data to have a low incidence of bigeye in the catches (e.g. as indicated by NFD in the Solomons) should be considered for exemption.
- It is in the interest of both DWFNs and PIC industry development aspirations to develop bigeye-friendly purse seine FAD fishing techniques. Experience from other fisheries suggests that an appropriate way of doing this is by vessel-specific catch quotas for small bigeye and yellowfin – and then letting the fishers innovate.

During this study commercial stakeholders were very polarized with respect to their views on FAD restrictions:

- Longline fishers are delighted at the prospect of purse seine FAD fishing restrictions.
- Purse seine fishers put forth various types of justification of why they should be exempt, or alternative ways of saving the bigeye.

5.4.8 Bycatch limitations

Bycatch can be limited in tuna fisheries by both input measures (e.g. mandatory use of circle hooks) or output measures (e.g. a limit on the number of turtle interactions). In the various tuna fisheries the species receiving some degree of protection through bycatch limitation include turtles, sharks, birds, and marine mammals. Bycatch limitation measures are likely to have the greatest effect on those aspirations involving shallow water longlining (particularly for sharks and for swordfish) and purse seining on FADs. As turtles are likely to receive considerable attention in WCPFC bycatch limitation measures, Box 4 gives some insight on the locations where turtle interactions with tuna fishing is likely to occur.

Box 4: Turtle Interactions with Longline Gear

There has been very little published documentation on interactions on a WCPO-wide basis. From personal experience, the highest interaction rates can be expected where shallow-set longline fisheries intersect with turtle migratory pathways. One example is the swordfish fishery north of Hawaii where the loggerheads travelling from/to Japan and North America follow the same prey as fish, i.e. oceanographic features such as temperature breaks and resultant levels of high food abundance. Recent work indicates that there are high incidences of turtle interaction in the far western parts of the WCPO, in particular where the Taiwanese longline fleet uses basket gear. Palau is an example, and probably the Pacific areas of Indonesia. Ironically, the interactions are mainly with olive ridley turtles of which little is known of their life history. It follows that the lowest rates of interaction would be where deep-set longline fisheries are located. Albacore longline fisheries such as those around Fiji are probably a good example. The caveat here is that interactions with leatherbacks can be high for even deep-set fisheries due to entangling as opposed to hook ingestion. This would likely be highest around PNG, Solomons and Vanuatu. The migratory pathways are becoming more and more defined by satellite tracking these days. (source: M.McCoy, pers.com.)

Several of the domestic tuna industry development aspirations documented in this study involve increased utilization of bycatch, but these are based mostly on species not normally the focus of protection. Nevertheless, the WCPFC Convention states that the parties shall "adopt measures to minimize ......catch of non-target species" and this provision may be invoked for a large range of species in the future.

The only case in which PIC industry stakeholders volunteered information on the impacts of bycatch limitation was from a fisher who targets swordfish: "the concept of measures dealing with turtles and sharks are a worry".

5.5 Some Additional Considerations on Impacts

In the discussion above of the impact of the various management measures on development aspiration two cross-cutting issues emerged: flag vs zone allocations and exemptions from management measures.

5.5.1 Allocations

The impacts of several types of limits (e.g. restrictions on catch, effort) on aspirations are greatly affected by the basis on which the limits are apportioned. Several of the limits could be a development opportunity or, alternatively, a major constraint on benefits - depending on whether the factor being limited is done so on the basis of the nationality of participants or by fishing zone. This feature is of great importance for industry development and reinforces the significance of a remark made in a statement by an FFA member to WCPFC3:

> "We want to take this opportunity to reiterate the policy of FFA Members on allocation as it was set out throughout the MHLC and Prep Con processes......we do not see the Commission as having a major role in allocations relating to fishing in waters under national jurisdiction."

The results of this study endorse the benefits of such an approach.

The discussions above carry the suggestion that <u>allocation of catch or effort by zone is critically important for the fulfillment of domestic tuna industry development aspirations</u>. In this context it is notable that the *only* mention of "aspirations" in the Convention is a statement that aspirations should be taken into consideration when allocating catch or effort. This appears to support the contention that allocation should be done in a manner favourable to SIDs – that is, by zones rather than by flag.

5.5.2 Exemptions

A second crosscutting issue concerns exemption from WCPFC management measures. One line of thinking is to make management measures (including those that are quite burdensome for industry), and then continue with the present practice of exempting PIC domestic industry from all these measures – giving them a competitive advantage. This approach may be somewhat naïve in that there is an inherent expectation that the exemptions will be perpetual (unlikely to be the case) and that many PICs receive benefits from DWFN fleets that may diminish due to the impact of the burdensome measures. Nevertheless, many of the managers of large tuna operations in PNG, Solomons, FSM, and RMI predicate much of their future success on continued exemptions. Additional thought needs to be focused on the future of exemptions.

6.0 Concluding Remarks

Much of this study was focused on three items:

- Documentation of the domestic tuna industry development aspirations
- Analysis of the impacts of various factors on development aspirations: Access agreements, IUU fishing, and regionalism
- Analysis of the impacts of management measures on aspirations

The domestic tuna industry development aspirations of FFA member countries are documented in the report (in decreasing detail) in Appendix 3, Section 2, and in Table 1. Six types of development aspirations were especially common: expanding the longline fleet/catch (12 countries), non-cannery value adding (11), new or expanded shore basing (7), small-scale development (7), expanding purse seine fleet/catch (7), and additional canning/loining (6).

With respect to the impacts of various factors on development aspirations:

- A modification of sentiments expressed in Batty (2008) encapsulates the conclusion of this study on impacts of **access agreements**: Control of access can be an important tool for domestic industry development in some countries, while unrestricted access has probably hindered domestic development.
- It is difficult to objectively determine the degree to which **IUU fishing** affects domestic tuna industry development aspirations. The opinions of knowledgeable people may be the best source of information on the subject – and this suggests that currently the impacts of IUU on aspirations are not large.
- With respect to the impact of **regionalism** on development aspirations, fisheries officials of the region, especially those from small countries, feel that regionalism is important, if not essential, for domestic tuna industry development. Managers of commercial tuna fishing companies in the private sector tend to be less enthusiastic about regionalism facilitating industry development.

The impacts of the various management measures on development aspirations are complex and vary considerably between the countries. It is difficult to make generalizations on the desirability of the different measures which are applicable to the aspirations of all FFA countries – the suitability seems to be specific to sub-regions or countries. Some features do, however emerge:

- There is at least some PNA-related polarization of the effects of bigeye management measures on aspirations.
- Exemptions from WCPFC management measures could be critically important for fulfilling aspirations, but there is also the view that exemptions are not very relevant due to those measures only applying in the high seas,
- The management measures have very different effects on aspirations between countries. Important determinants include (a) the degree of importance that purse seining and subsequent processing of the catch has in aspirations, (b) the degree of importance that bigeye has in aspirations, and (c) the development model to be followed.

The scheme for allocating the inputs/outputs limited by management measures will have much to do with the impacts of the measures on development aspirations of PICs. More specifically, allocations based on zones can create an environment favorable for domestic tuna industry development. Section 5.2.1 of the report gives some thought on how the aspirations provision in the Convention support allocations by zone.

Tuna industry development is very important to FFA member countries, and for some represents one of the few opportunities for economic advancement. The aspirations associated with this development are to some degree safeguarded by a provision in the Convention. Efforts by the DWFNs to delineate the aspirations may lead to limiting those aspirations and constraining critically important prospects for the future – leaving countries with less opportunities in domestic tuna industry development than was the case before the WCPFC was established.

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Appendix 1: People Contacted

Cook Islands

- Ian Bertram, Secretary of Marine Resources
- Kelvin Passfield, New Zealand High Commission, former officer in Ministry of Marine Resources
- Julian Dashwood, former Secretary of Marine Resources and former Director, SPC Marine Resources Division
- Bill Doherty, Landholdings Ltd. [operator of 6 LL vessels]

Fiji

- Sanaila Naqali, Director of Fisheries, Fisheries Department
- Anare Raiwalui, Licensing Officer, Fisheries Department
- Graham Southwick, Executive Chairman, Fiji Fish Marketing Group Ltd.
- Russell Dunham, Group Business Director, Fiji Fish Marketing Group Ltd.
- Robbie Stone, Manager, Gourmet Foods; former President, Offshore Fisheries Council
- David C. Lucas, Director, Solander (Pacific) Ltd.
- Jing Chunde, Managing Director, Seafresh (Fiji) Ltd.and CNFC
- Chandra Prakash, Acting General Manager, PAFCO
- Kamlesh Kumar, PAFCO Board Member
- Gerald Kontoh, Manager operations, PAFCO

FSM

- Bernard Thoulag, Executive Director, NORMA
- Eugene R. Pangelinan, Deputy Director, NORMA
- Marion Henry, Assistant Secretary, Department of Resources and Development
- Nick Solomon, President/ CEO, National Fisheries Corporation
- Hilo Hsueh, Operations Manager, Luen Thai Fishing Venture Ltd.
- Peter Sitan, Senator and Chairman of Committee on Government Operations, FSM National Congress
- James Movick, Clearwater Inc. and Chairman, Pacific Islands Tuna Industry Association
- Loren Robert, Department of Foreign Affairs

Kiribati

- Ribanataake Awira, Director of Fisheries
- Iannang Teakoro, General Manager, Central Pacific Producers
- Mike Savins, Board Member, Central Pacific Producers
- Barerei Onorio, former General Manager, Central Pacific Producers; former Chief Fisheries Officer
- Tiaeki Kiaroro, Deputy Principal, Fisheries Training School
- Komeri Onorio, Deputy Chairman of the Board, Central Pacific Producers
- Teekabu Tikai, Chairman, Board of Directors, Central Pacific Producers
- Tooti Tekinaiti, Principal Fisheries Officer
- Raikaon Tumoa, Principal Fisheries Officer

Marshall Islands

- Glen Joseph, Glen Joseph, Director, Marshall Islands Marine Resources Authority
- Samuel Lanwi Jr., Deputy Director, Marshall Islands Marine Resources Authority
- Berry Muller, Chief Oceanic and Industrial Affairs, Marshall Islands Marine Resources Authority
- Hill Zhu, Acting General Manager, Marshall Islands Fishing Venture Inc.
- Hilo Hsueh, Operations Manager, Luen Thai Fishing Venture Ltd.

- Don Xu, Vice President, Pan Pacific Foods
- Eugene Muller, Manager, Koo's Fishing Company, Ltd.
- Carl Hacker, Director, Economic Policy, Planning and Statistics Office
- Danny Wase, [former] Director, Marshall Islands Marine Resources Authority

Nauru

- Charleston Deiye, CEO, Nauru Fisheries and Marine Resources Authority
- Ross Cain, Deputy CEO, Fisheries and Marine Resources Authority
- Terry Amram, Oceanic Manager, Fisheries and Marine Resources Authority
- Peter Jacob, USP student and former staff of Fisheries and Marine Resources Authority

Niue

- Brendon Pasisi, - Director, Department of Agriculture, Forestry and Fisheries

Palau

- Ellender Ngirameketii, Marine Law Enforcement
- Hilo Hsueh, Operations Manager, Luen Thai Fishing Venture Ltd.
- Kathleen Sisior, Fisheries Licensing & Revenues, Bureau of Marine Resource, Ministry of Resources & Development
- Vic Uherbelau, marine policy consultant, and former Director, FFA

PNG

- Norman Barnabas, Director, Devads Ltd
- Blaise Paru, Managing Director, Sanko Bussan (PNG) Limited
- Hugh Walton, National Fisheries College
- Sylvester Pokajam, Managing Director, NFA
- Ronald Kuk, Executive Manager Projects Management Unit, NFA
- Augustine Mobiha, Executive Manager, Fisheries Management Division, NFA
- Ludwig Kumoru, Fisheries Manager, Tuna, Fisheries Management Division, NFA
- Pedro Celso, RD Tuna Canners Limited
- Francis Houji, Fair Well Investment Limited
- Peter Cusack, IFC
- Gus Nativitad, Frabelle (PNG) Limited
- Maurice Brownjohn, Latitude 8 Limited

Samoa

- Pouvave Fainuulelei, Principal Fisheries Office and Acting Assistant Chief Executive Officer
- Ueta Faasili Jr, Fisheries Officer, Fisheries Division
- Victoria Ieremia, Compliance Officer, Fisheries Division
- Mose Topeto, Offshore Fisheries, Fisheries Division
- John Boyle, Managing Director, Pacific Corporate Services Ltd.
- Chris Hewson, Fleet Manager, Apia Export Fish Packers Ltd.
- Beverley Levi, General Manager, Tradewinds Fishing Company Ltd.
- Lui Bell, Secretariat of the Pacific Regional Environment Programme and former senior fisheries officer.
- Iosia Tolovae, alia fisherman and Treasurer, Tautai Samoa (alia fishermen's association)

Solomon Islands

- Adrian Wickham, National Fisheries Development
- Simon Tiller, Advisor, New Zealand Fisheries Project
- Chris Ramofafia, Permanent Secretary for Fisheries, Fisheries Department

- Sylvester Diake, Under-Secretary of Fisheries, Fisheries Department
- Milton Sibisopere, General Manager, Soltai

Tonga

- Chin Choe, Managing Director, South Pacific Resources Ltd.
- Coco Haunga, Licensing Officer, Fisheries Department
- Naitilima Tupou, Tonga Export Fisheries Association
- Penisimani Vea, Director, Ministry of Agriculture and Food, Forests and Fisheries
- Ulunga Fa'anunu, Acting Secretary of Fisheries
- Tricia Emberson, Manager, 'Alatini Fisheries
- Siotame Taunaholo, Managing Director, Global Fishing Company Ltd
- 'Etimoni Palu, Palu Fisheries Ltd.
- Bill Holden, President, Tonga Export Fisheries Association and Manager 'Alatini Fisheries

Tokelau

- Foua Toloa, Faipule of Fakaofo and former Director of Department of Agriculture and Fisheries
- Mose Pelasio, Senior Policy Advisory Officer

Tuvalu

- Samasoni Finikaso, Director of Fisheries
- Uale Teleni, Secretary of Natural Resource and Environment
- Falasese Tupau, Fisheries Licensing Officer
- Lt. Steve Cleary, Maritime Surveillance Advisor
- Taoa Vaisua, skiff troll fisher
- Soloseni Penitusi, Tuvalu Fishermen's Association
- Elisala Pita, Member of Paliament, and former fisheries officer
- Satalaka Petaia, [former] Manager, National Fishing Company of Tuvalu

Vanuatu

- Robert Jimmy, Acting Director of Fisheries, Department of Fisheries
- Jing Chunde, Managing Director, Regional Office, China National Fisheries Corporation
- Moses Amos, former Director of Fisheries, Department of Fisheries

FFA

- Dan Sua
- Lenny Rodwell
- Mike Batty

Others

- Drew Wright
- Les Clark
- John Hampton
- Ray Clarke
- Mike McCoy
- Garry Preston
- Karl Staisch
- David Itano
- Sitiveni Halapua

Appendix 2: The Evolution of Development 2002 - 2008

	Active Locally Based Industrial Tuna Vessels (PS, LL, PL)			Tuna Canneries & Loining Facilities			Export Packing & Value Adding Facilities			Local Jobs on Vessels			Local Jobs in Shore Facilities		
	Gillett 2002	DEVFish 2006	Gillett 2008	Gillett 2002	DEVFish 2006	Gillett 2008	Gillett 2002	DEVFish 2006	Gillett 2008	Gillett 2002	DEVFish 2006	Gillett 2008	Gillett 2002	DEVFish 2006	Gillett 2008
Cook Is.	10 L/L	8 L/L	7 L/L	0	0	0	3	3	2	50	15	12	15	15	10
Fiji	96 L/L 1 P/L	60 L/L	29 LL	1	1	1	6	4	6	893	330	150	1496	2200	1250
FSM	34 L/L 8 P/S	3 P/S	31 LL 3 PS	0	0	0	4	0	1	89	36	25	131	24	140
Kiribati	2 L/L 1 P/S	1 P/S	1 P/S	0	0	0	2	1	1	39	15	15	47	80	70
Marshall	54 L/L 5 P/S	40 L/L 6 P/S	36 L/L 5 PS	1	0	1	2	1	1	5	0	25	457	100	116
Nauru	1 L/L	0	0	0	0	0	0	0	0	5	0	0	10	2	0
Niue	0	0	0	0	0	0	0	1	1	5	0	0	0	14	18
Palau	71 L/L 1 P/L	139 L/L 1 P/L	115 L/L 1 P/L	0	0	0	2	3	3	1	0	0	11	5	20
PNG	40 L/L 24 P/S	25 L/L 43 P/S	27 L/L 43 P/S	1	3	3	7	4	7	460	110	440	2707	4000	8550
Samoa	35 L/L	29 L/L	15 L/L	0	0	0	4	3	2	674	110	255	108	90	40
Solomon	8 L/L 2 P/S 12 P/L	2 P/S 11 P/L	4 P/S 1 P/L	1	1	1	1	0	0	464	66	107	422	330	827
Tokelau	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tonga	26 L/L	15 L/L	9 LL	0	0	0	4	3	3	161	75	45	85	35	35
Tuvalu	0	0	0	0	0	0	1	0	0	59	20	65	36	10	10
Vanuatu	0	0	0	0	0	0	0	0	0	54	20	30	30	30	30
TOTAL	377 L/L 40 P/S 14 P/L	316 L/L 55 P/S 12 P/L	269 L/L 56 P/S 2 P/L	4	5	6	36	23	27	2,959	797	1,169	5,555	6,935	11,116

Notes:

- As there may be some variation in definitions or how estimate was made between the studies, the totals given should be considered indicative, rather than precise
- Where data was unavailable in 2008, the 2006 data was used as a basis for an estimate
- For the cannery number, those canneries that only periodically process tuna distort the trenc, and have been eliminated
- For vessels and facilities, the 2008 number considers only those that were active at some point in the last quarter of 2007 or in the first quarter of 2008
- In order to enable totaling to determine trends, DevFish 2006 figures that are estimates (eg 100+) were adjusted to a specific figure (eg. 110)
- Cook Islands 2006 vessel numbers reduced by those based in Pago
- The new Majuro loining plant began operation after the period covered by the 2008 survey

Appendix 3: Stakeholder Consultations – National Summaries of Domestic Tuna Industry Development Aspirations

Cook Islands Aspirations

	Ian Bertram	Julian Dashwood	Bill Doherty
Fishing Aspirations	• Within 10 years, wish to raise the tuna catch from the present 2,000 to 3,000 mt to 6,000 mt • Fully domesticated ll fleet owned by Cook Islands nationals	• No great tuna fishing aspirations - because of the trends in tuna resources and fuel prices, only super-efficient vessels will able to operate in the future – and it is unlikely that the Cooks will be in a position to operate such vessels. • Only licensing of efficient overseas based vessels and small vessels fishing for domestic consumption.	• Believes the LL fishery in the south could grow gradually, as long as the Government keeps foreign operators out, and leaves the fishery for the local boats. If outsiders are allowed in local operators would back out, and the foreign boats would not survive. • The northern fishery could also grow slowly be believes, with local investment, but he knows less about this as he fishes the south
Processing Aspirations	• Onboard processing • High degree of offloading in Raro for subsequent overseas shipment	Realistically, only minmal processing will occur in the future - and only for domestic consumption	• There are 2 processors now on Raro which is enough, even for the future. • The northern boats unload direct to Pago. So in 10 years, much the same as now.
Other Tuna Aspirations	• Access to EU markets		
Effect of WCPFC Management Measures	• Feels that present quotas by flag are too high for resource protection • Concern that in future BE/YF measures may impact albacore LL fishery which important for the Cooks	WCPFC was a "feel good" initiative that will be ineffective in resource conservation due to the difficultiy of getting PICs/DWFNs to agree on action to be taken.	[not up on what the WCPFC is doing in regards to management measures]
Effects of Compliance and IUU	Probably has not impacted on development, but the country will maintain a visible surveillance presence to deter possible impacts		
Effects of Access Agreement			
Effects of Regionalism	Regionalism is helpful – and most important between adjacent countries. The PNA countries have very different resources and development aspirations		

Fiji Aspirations

	Fisheries Department	Fiji Fish Marketing Group	Gourmet Foods	Solander	Seafresh/CNFC	PAFCO
Fishing Aspirations	• Wish to have a fleet of 60 to 90 vessels in the local fleet (fishing in-zone), and a total of 140 vessels based in Fiji. • Gradual domestication of fleet over 5 to 10 years, with local flagging first and then Fiji citizen ownership	• Tuna catch to remain at the same level • New fishing operations predicated on swordfish, mahi, and bottomfish • Obtaining MSC certification for the albacore LL fishery	• All operators focused on short term survival • When the two largest operators depart (retirement or bankruptcy) it is likely the Chinese will take over	• Focused on short-term survival • Cannot see the company fleet expanding, but rather replacement with newer vessels • The existing cap on vessel numbers saturates the Fiji zone.	• In near future 6 new vessels arriving. • Survival will be main aspiration for next decade. • Can see Korean LL vessels dropping out fishing in the region followed by Taiwan • Will not base any more vessels in Suva, but will shift vessel to Vanuatu within a few years. • Vanuatu more favorable for regional centre – closer to fishing grounds	The company has no fishing aspirations but notes that recent attempt to reduce LL effort have resulted in less fish supply to cannery
Processing Aspirations	• Will maintain the total number of fresh fish export processing plants at 6 • Not aware of PAFCO's future plans.	Not catching more fish, but focusing on high value markets and value adding	The best that can be expected for the cannery is that status quo.	• In long term, all companies in the country need to get into value-adding as catches cannot be expanded.	• Will not build processing facility in Suva; If one needed, several presently for sale.	Hopes to expand operation (25,000 – 30,000 mt throughput/yr in recent years) so that loining takes place in Levuka and canning in Suva.
Other Tuna Aspirations	• The general theme for decades into the future is "doing what we are doing now, but doing it better" • Enthusiasm in government for the regional service center has dissipated	• Focusing on the opportunities produced by resource adjacency, including that afforded by offloadings by vessels fishing outside of zone. • Regional service centre to cater for tuna vessels in this part of the Pacific	Getting maximum advantage out of Fiji's only major comparative advantage – direct flights to major markets	• There is room for a regional service centre, but is will be very expensive to set up. • In the past Suva was such a centre, but skills have 'dissipated and infrastructure has been run down.	• In near future will build a processing facility in Vanuatu and will have 25 – 45 LL vessels based there. • Can expand rapidly in Vanuatu if conditions are favorable – can easily build 20 vessels per year	Main aspiration is assuring an adequate flow of fish to processing plant for loining and canning.
Effect of WCPFC Management Measures	Perception that Fiji is outside the zone where YF/BE measures are applicable	• Not focused on specific measures • Feels that Fiji is doing its part to reduce fishing effort • Favors economically efficient management measures: limit on numbers of vessels, rather than limiting the efficiency of the vessels that are fishing (such as VDS or seasonal closure for LL)	[not focused on this subject]	Not focused on this subject but intuitively a cap on vessel numbers seems best	• Not good to cap number of vessels as there is large range of fishing capacities. • Number of hooks set is better. For freezer LL, hold capacity would be good as it is a good determinant of fishing power – except for the Taiwanese LL boats that use motherships. • Exemptions for PICs will undermine effectiveness of management measures as it is easy for DWFNs to set up phony J/Vs	Not focused on this subject – only consideration is that whatever measures are used, they do not interfere with flow of fish to the cannery
Effects of Compliance and IUU	There is likely to be a low level of IUU fishing and this probably has only a small impact on development aspirations.	Substantial amount of fish transfers between vessels	Not a major issue – only the odd shark LL operation	• Has lots of eyes/ears on the fishing ground but because list of licensed vessels is confidential, cannot tell who is illegal. • It is likely that the amount of illegal fishing is so small as to be irrelevant to our operation. • Hysteria whipped up by Greenpeace creates perception that IUU is large.	• Not important – PICs have been misled by Aus/NZ to believing illegal fishing is important, when it is not significant. • Why risk illegal fishing when it is so cheap to get license in Solomons and Vanuatu	[not focused on this subject]

	Fisheries Department	Fiji Fish Marketing Group	Gourmet Foods	Solander	Seafresh/CNFC	PAFCO
Effects of Access Agreement		Little licensing				Reduction of licenses for Taiwanese vessels supplying cannery has resulted in less throughput
Effects of Regionalism	Regionalism is very important – it is a small regional and countries must cooperate in industry development	Not relevant	• It was good in the days of PL fishing – Solomons, Fiji, Tuvalu, and Kiribati vessels moved between those zones • Now the major relevancy is on the post-harvest side	• Wishy-washy – the problems are complex and many are not addressable through regional cooperation. • Is mostly implemented through fishery officers that have other agendas than domestic development • Did not support reciprocal licensing as the company fleet not mobile enough to take advantage	The only aspect familiar with is the reciprocal licensing. Can see great difficulties of administering a large scheme and, from a fishing perspective, the only zones of interest to the company are Fiji, Vanuatu, and Solomons.	Unaware of any regional cooperation or assistance.

FSM Aspirations

	NORMA E.Pangelinan	NORMA B.Thoulag	NFC	Dept. of R and D	Luen Thai	Peter Sitan	Clearwater	Loren Robert
Fishing Aspirations	• There will be no government commercial involvement • For LL: expansion of Pohnpei-type LL operations to the other three states – like at present but more/better • For PS: renewal/expansion of present fleet. Anticipates considerable investment in PS shore bases in exchange for access	• Expansion of existing company PS fleets: Yap and Pohnpei • LL fleets will have a harder time bouncing back from the fuel crunch	• Expansion of locally-based PS fleet (JV or pure foreign) with vessels of appropriate size (1000 to 1500 tons) • Expansion of Pohnpei-type LL operations to the other three states – like at present but more/better: up to 70 vessels	• Straight access agreements will cease and all fishing will require at least some shore activity • Airport expansion will allow companies besides Luen Thai to enter fresh LL fishery, and therefore an expansion of LL activity. • Increased airfreight capacity will create conditions more favourable for PS basing	• The company is flexible enough to be involved in most aspects of fishing and processing • With an adequate supply of fish and the company's diversified market, Luen Thai can develop many types of opportunities: "big enough to make it happen".	• Guam based LL (50 + vessels) are likely to transfer to Pohnpei on their own due to increases in fuel costs and enlargement of Pohnpei airport. • PS fleet and processing like in PNG	• There will be a much stronger focus on utilizing SJ resources in the future.	Fishing with a fleet of FSM or JV vessels
Processing Aspirations	Present foreign interest in loining/canning likely to intensify, possibly to fruition	• Interest by senior leaders in having a loining operation in Chuuk	• Establishing a Majuro-type loining plant	Loining plant a possibility after thorough due-diligence study		Possibility of cannery dictated by economics	Longliners will be both driven and attracted to have onshore activities	Processing in Pohnpei and Chuuk - like in the Marshalls
Other Tuna Aspirations	Requirement for FSM transshipment as condition of license		International trading of fish once critical volume of fleet catch is achieved	Pohnpei airport will be expanded to allow non-stop 767 flights to Japan	Aquaculture could be important, either for longline bait or for use of tuna waste material for feed	Government involvement in industry only if dictated by terms of grant from China	Fishing JV with partners that are vertically integrated so they have a real interest in processing	
Effect of WCPFC Management Measures	• Has not thoroughly thought this through • A freeze on catch by flag at some historical levels would be highly unfavorable for FSM	• For measures to be effective, must be applied throughout the stock range • Do not see incompatibility between FSM's aspirations and WCPFC management measures • Can increase domestic FSM fishing capacity by reducing foreign access	• Already efforts on part of local PS company to be exempted from controls on FAD fishing • Hope special consideration will be given to PIC-based companies wishing to expand. • In favor of VDS-type measures to prevent over-exploitation of resource		• Not conversant with WCPFC measures • Access to raw material is the most important consideration for the company	• Concerns is that the regulation and administration adds to fishing cost • If Commission measures detract from access fees, re-negotiation with Commission required • For BE conservation, favors FAD controls	• PICS are quite aware of bad experience of developing countries in other regions with RFMO measures • FAD limitations	Already having an effect

	NORMA E.Pangelinan	NORMA B.Thoulag	NFC	Dept. of R and D	Luen Thai	Peter Sitan	Clearwater	Loren Robert
Effects of Compliance and IUU	• Unlicensed fishing activity is probably not having a major effect on present domestic industry. • Sum total of all misreporting by legal vessels is probably greater than the catch of all illegal vessels	• Steps to prevent IUU fishing are vital to both government revenue and domestic tuna industry development • Little information on the extent of IUU fishing in the zone	Effect of illegal fishing now not very large but it could much more important in future when resource is more fully exploited	The impact depends on condition of the tuna resources; if they are over-exploited then IUU could be having significant impact.	No reports of illegal boats from Captains as they are unaware of which ones are licensed.	• Probably only a minimal amount occurring. • Because it has been noticed that fishing is better with fewer vessels, a significant amount of unlicensed vessels could have an effect		
Effects of Access Agreement	• Government is hesitant to interfere with revenue stream • In response to a recent proposal for major onshore investment, there was the expectation on the part of the government to be compensated for loss of access revenue	• The thinking of "thou shall not touch access fees" has given way to more development-oriented thinking by senior leaders. • The government can get political credit for job creation and development can produce government revenue	FSM's high dependence on access fees is having an inhibiting effect on development	There is less access fee payments than in the past – political will is increasing for sacrificing some cash in order to have domestic tuna industry development	Because of increased costs of local basing, some concessions in license fees would normally be expected.	Money from access fees is a "sacred cow" and leaders will not give up significant access fees to promote development	For two reasons access agreements have an inhibiting effect on development: (1) High % of govt revenue, and (2) domestic tuna industry development has had a poor track record in FSM	The leadership of FSM does not get excited about development when concession are required on access fees
Effects of Regionalism	• PNA activity is relevant to domestic development • VDS has potential to help domestic development	• There can be real benefits from regional cooperation, such as the countries cooperating to release the Taiwanese PS vessels • Some things countries must do on their own.	• Different effects for the various companies. CFC PS vessels do not go far, so not as important. The Yap seiner ranges further, so FSMA more relevant. • Most beneficial for MCS and development information	There is a degree of competition among the PICs so regionalism could either be irrelevant or helpful, depending on the specific subject	Regionalism could assist a locally based company in that free movement east/west would be a great asset to LL vessels	• The smaller the country, the more important regionalism is. In FSM the more development progresses, the less important regionalism is	• PNA could be a major force to promote development • VDS is most powerful form of regionalism to promote development • A LL version of the FSM arrangement has considerable potential.	Sub-regionalism, especially with PNG, is quite important

Kiribati Aspirations

	Director of Fisheries MFMRD	Iannang Teakoro CPP	Mike Savins CPP	Barerei Onorio	Tiaeki Kiaroro FTC	Komeri Onorio CPP	Tooti Tekinaiti	Raikaon Tumoa
Fishing Aspirations	• Phasing out DWFN fishing, and replacement with a regional fleet of PS, LL, and PL vessels. • The ownership of the vessels will be like in FSM, government owned but operated as private companies • Two vessels of each type for each of the 8 PNA countries	• Can see local ownership of LL and troll vessel and PS joint ventures • There is plenty of expertise but the trouble is finance • It is likely that CPP will remain owned by the government and will play the role of a local partner in the JVs	• As uneconomic DWFN fleets drop out (high costs of fuel/labour) local fleets become more viable. • Due to resource and logistic considerations, most fleet expansion will occur at Christmas Island, rather than Tarawa • Domestic industrial fishing will be limited to LL, at least in the medium-term future "learn to walking before running"	• Scope for expanding in LL (Line Is.) and PS (Gilberts) • Both the Kao and Tuvalu/RMI development models are possibilities		• The new CPP Board and manager are formulating development plans. They are likely to include JVs • Not certain at this point of the type of fishing operations. • CPP is likely to remain fully owned by the government	• A fleet of PS and LL vessels • Fleet to be developed thru a J/V arrangement • Because the private sector is small, the local partner would need loans from government	• A fleet of PS and LL vessels with JV ownership • Can be attracted to Kiribati by tax breaks • The local partner is likely to be a semi-private entity because of the government's privatization policies: stepping away from CPP
Processing Aspirations	• Cannery/loining difficulties in Kiribati, so all PS catch will be off-loaded in other PNA countries (PNG/Solomons) • Fresh tuna processing/export only in countries where logistics are more favourable	• Processing for fresh chilled export from Christmas Island. • Not too much thought has been give to the subject of disposal of the catch of the future PS vessels	• The economics of tuna jerky production are improving. • With its large labour pool, loining in Tarawa is a possibility	• A pre-feasibility study for a loining operation in Tarawa has just been carried out. • Likely to have a chilled tuna export processing plant in Christmas before too long.		• Not certain at this point of the type of processing operations	• Most processing of LL and PS catch to occur at Christmas Is. • Cooperation with RMI in air freighting is likely	Either a local cannery or the country should join the regional cannery
Other Tuna Aspirations	Employment of I-Kiribati fishers on regional and DWFN fleets			Providing crew for foreign fishing vessel is a major opportunity.	Supply of crew will be steady on Japanese vessels and will increase on other fleets			

	Director of Fisheries MFMRD	Iannang Teakoro CPP	Mike Savins CPP	Barerei Onorio	Tiaeki Kiaroro FTC	Komeri Onorio CPP	Tooti Tekinaiti	Raikaon Tumoa
Effect of WCPFC Management Measures	• These measures are only applicable on the high seas; PNA countries handle in-zone management • As PNA countries phase out DWFN fishing in zones, they will gain more control over fishing operations in the high seas by making the HS economics more difficult for non-PNA vessels.	• Has not given much thought to WCPFC issues, other than it is important that Kiribati has good representation at the meetings.		Could have an impact, but not familiar with the current status			Not given much thought to the subject, but WCPFC measures should have no impact in the Kiribati zone.	• Has not given much thought to WCPFC issues • Measures should not have an impact inside the country's zone
Effects of Compliance and IUU	IUU has negative effects on development efforts. Evidence that significant IUU occurs: unlicensed Latin PS detected by US Coast Guard and unlicensed Korean LL detected by Australia Orion flights	• Should there be lots of IUU, it could affect development aspirations – but no info on IUU level is available		Although the amount of IUU fishing is not known, reports from people on the outer islands indicate that it is significant.			It is well known that foreign fishing boats have been stealing fish for a long time, but the impact of this on aspirations is probably not great	
Effects of Access Agreement	• Sometimes helps development, sometimes hurts development • Access arrangements have been used to facilitate development: fisheries training school, fisheries infrastructure	Uncertain of effect	Government has told CPP that access fees will not be used for fisheries development purposes				Access arrangements should be used as a development tool, but government will insist that fee levels are maintained	This is a difficult issue, but the government's flexibility on this depends on over-all fee levels
Effects of Regionalism	Very important for domestic tuna industry development – only large countries can do it alone	Could be very effective in replacing DWFN fishing with PIC fishing	Kiribati will participate in regionalism, but for the purpose of sort-term term political expediency, the country will do it alone	• Mildly important for domestic tuna industry development • The FSM Arrangement is the most helpful			Not really sure, but cooperation between RMI and Kiribati in airfreight and loining could produce real benefits	

Marshall Islands Aspirations

	MIMRA Glen Joseph	MIMRA Sam Lanwi	Pan Pacific Foods	Marshall Is. Fishing Venture	Koo's Fishing Company	Economic Policy Planning and Stats Office	Danny Wase
Fishing Aspirations	More Koo and Luen Thai type operations	• Phasing out of distant water fishing, and replacing it by a functional domestic fleet • 10 to 15 RMI-flagged seiners within 10 years. • Continuation of successful fish-base longlining and airfreighting of fresh fish	• For loining plant to reach full-capacity, it needs some fishing capability. Parent company owns several PS vessels.	• Maximum expansion possible at present location is about 40 LL vessels and 400 mt of tuna per month • Could accommodate up to 50 vessels and 500 mt if the base could expand to adjacent land	Expansion of fleet to 10 PS vessels	Judging by past efforts/benefits, an expanded locally based fleet would not be very beneficial to the national economy	More Koo-type operations, with increasing Marshallese control
Processing Aspirations	Possibly a second loining plant	• Loining plant to re-commence in April 2008 • Within 5 years loining throughput to be 80 mt/day • Concept that all fish caught by locally-based vessels to be processed in RMI	• Loining operations to start in April 2008. a throughput of 10,000 mt for 2008 is planned and 20,000 mt for 2009. • Ultimate capacity will be 25,000 mt/yr or 100 mt/day – limited by tuna supplies	Will soon expand to value adding of bycatch for China and Taiwan market, including tuna belly, heads, and eyes	Soon will have 100 mt of cold storage for bycatch for subsequent processing	Low paying fish processing jobs are only slightly better than nothing.	
Other Tuna Aspirations	Making Majuro a hub for fishing operations in the sub-region	Drydocking, net repair, and enhanced docking facilities					
Effect of WCPFC Management Measures	• The measures of WCPFC will have no effect on the RMI domestic tuna industry development aspirations. • The DWFNs created the resource over-exploitation situation, so the burden of resolving it should not be on the RMI to resolve it.	• Worried about Commission dictates that affect present practices, such as transshipment. • WCPFC measures now is having a major impact on aspiration to develop PS fleet	• RMI is treated very unfavourably by WCPFC – the only resource of the country is tuna which does not require controls for sustainability • "Can save the country OR save the ocean" • Main objective of the company with respect to resource management is to assure an adequate supply of reasonably-priced fish to the loining plant.	• [not very conversant with this subject] • Would be in favour of overall all quota for WCPO	• A ban on FAD fishing would have a major impact on their fishing • Because effective in-zone management (VDS) this, or a similar measure, should be extended to the high seas.		

	MIMRA Glen Joseph	MIMRA Sam Lanwi	Pan Pacific Foods	Marshall Is. Fishing Venture	Koo's Fishing Company	Economic Policy Planning and Stats Office	Danny Wase
Effects of Compliance and IUU	• IUU is more rampant elsewhere • Economic interaction could be important in the future, but is irrelevant at this point.	Uncertain of the amount of IUU fishing, but any detracts from transparency.		• No effect: has never heard LL vessel captains talk of unlicensed fishing vessels.	No idea how much illegal fishing is occurring, and even less idea on how it would affect aspirations		
Effects of Access Agreement	Access fees are not that important for RMI, so the income stream from them is not as inhibiting for domestic development as in other countries	There is a balance between the government revenue stream and domestic development that may have a somewhat inhibiting effect on the enthusiasm for development.			Not relevant to domestic tuna industry development aspirations	The $1.5 million access fees is not highly significant to the government; cannot see relevance of this to domestic tuna industry development	It was always intended that access agreements would be a transition to domestic tuna industry development
Effects of Regionalism	Very important for domestic tuna industry development	Very important for domestic tuna industry development – small countries cannot do it alone.			• Accelerates domestic development • Regional collaboration helped obtained WCPFC approval for second RMI seiner and w/o FSM arrangement Kco's would not have vessels operating RMI.		

Nauru Aspirations

	Fisheries and Marine Resources Authority (consolidation of views)	Peter Jacob
Fishing Aspirations	With expanded harbour facilities, will pursue the establishment of a locally based LL fishery PS fishing will remain a possibility	Development of a tuna industry on Nauru will be limited to small scale artisanal and small scale longlining that we now have. Anything big will be plagued by restrictions associated with geography, infrastructure, skilled manpower, parts availability and most of all, limited capital.
Processing Aspirations	A fresh fish export packing facility will be established – assuming air freight situation can be resolved	Shipping fish to the major markets, providing that adequate transport exists
Other Tuna Aspirations	Enlarge habour facilities in order to catalyze tuna related development such as transshipment and provisioning. Taking advantage of large fuel storage facilities for bunkering fishing vessels	
Effect of WCPFC Management Measures	The measures could be cause for concern, especially for the LL aspirations Adopting a "wait and see" approach Support was given to the Marshalls and Tuvalu in their attempt to get around the restrictions on obtaining Taiwanese PS vessels	
Effects of Compliance and IUU	Not sure how much IUU is occurring, but indicators like VMS shows that a great amount of unlicensed fishing is not occurring	
Effects of Access Agreement	Access fees are important to the country but there is some flexibility to use the access agreements to encourage development	
Effects of Regionalism	This will help development PNG's marine park will be beneficial FSM Arrangement should be mildly important	• If Nauru wishes to develop its tuna at an industrial level, it needs to cooperate with its neighbours and perhaps even with DWFNs • Smaller members of PNA (Kiribati, Marshalls, Nauru and Tuvalu) could form a closer cooperation partnership by consolidating their resources such as merging the EEZs so that member vessels be given greater preferential access to these zones. • Another idea for these countries to jointly owner fishing vessels. • If you look at PNA, it is the bigger countries that are able to attract FDI and are benefiting greatly, leaving the smaller members with questions on why they should keep opening their zones to the FSM Arrangement vessels.

Niue Aspirations

	Brendon Pasisi - Department of Agriculture, Forestry and Fisheries
Fishing Aspirations	• There is the aspiration that in 10 years (assuming present developments stay on track) Niue will expand its tuna catch to 3,000 mt, which is currently thought to be the sustainable limit. • To take this catch a local fleet of 15 to 20 LL vessels will be required. • After the 3,000 mt limit is reached, monitor ng of the stock condition may show additional catch could be sustainable.
Processing Aspirations	The maximum capacity of the present processing plant is 6,000 mt per year
Other Tuna Aspirations	

Effect of WCPFC Management Measures	• Do not see much effect now.
	• As for the future, the effects of WCPFC measures may be limited. This is because:
	  o The main target species is albacore
	  o PICs have certain exemptions from Commission management measures
	  o The current nation BE quota of 2,000 mt is very large for the country

Effects of Compliance and IUU	• Probably only a limited amount of IUU fishing is currently occurring due the enhancement of MCS measures in recent years. • IUU fishing could interfere with ability to take corrective management action – and therefore indirectly negatively affect domestic tuna industry development
Effects of Access Agreement	• In the past a policy of requiring all DWFN vessels to offload in Niue was considered: "If you fish, you must offload in Niue" • The policy has been put on hold, but it is thought that the concept of using access to leverage domestic tuna industry development has some potential
Effects of Regionalism	• Regionalism has some degree of importance, especially for the countries in the south of the region • Regionalism could be relevant in the areas of fish transport, reciprocal licensing, and joint marketing efforts

Palau Aspirations

	Kathleen Sisior Bureau of Marine Resources	Vic Uherbelau	Marine Law Enforcement	Luen Thai
Fishing Aspirations	More of the fishing being carried out by locally-owned business	• There is at least some possibility that local aspirations will be affected by proposed legislation that would ban all foreign fishing activity in the Palau zone. The ban would take effect after existing fishing agreements with PITI, KFC and PMIC expire in 2012 • The $3 million that Palau would lose because of this would be mitigated by a $10 million trust fund set up by a conservation group. • An alternative aspiration is the big Palauan-owned business companies (i.e. Belau Transfer, Surangel & Sons, Tmetuchl Holding Companies; Rudimch Enterprises; Pierantozzi), be encouraged to buy out the foreign investors and take over the entire management and operations of KFC, PITI and PMIC.	• Expansion of LL fishing activities - using a similar model to the fishing companies that are presently operating, but with greater controls on environmental and health aspects – to prevent negative impacts on tourism	• The company is flexible enough to be involved in most aspects of fishing and processing • With an adequate supply of fish and the company's diversified market, Luen Thai can develop many types of opportunities: "big enough to make it happen".
Processing Aspirations	More of the processing/exporting being carried out by locally-owned business	• Assuming that local businesses buy the assets of the existing foreign tuna companies, continue the tuna processing/shipping as local companies.		
Other Tuna Aspirations		The legislature could enact a law formally designating Ngardmau as the second seaport of entry to Palau - not only as homeport for oceanic fishing vessels but as well as transshipment port where foreign fishing vessels licensed to fish in other countries' zones can transfer their catch to mother ships or reefers.		Aquaculture could be important, either for longline bait or for use of tuna waste material for feed
Effect of WCPFC Management Measures	[not focused on this issue]	Measures that may be enacted by Palau are much more restricting than those of WCPFC.		• Not conversant with WCPFC measures • Access to raw material is the most important consideration for the company
Effects of Compliance and IUU	• The country is struggling to monitor fishing activity in the zone • Not aware of a large amount of illegal fishing in zone	There is impact. Palau is closer to Asia than any other PIC and so is more frequently victimized by illegal fishing than other countries		No reports of illegal boats from company captains – but this could be because they are unaware of which ones are licensed.
Effects of Access Agreement				Because of increased costs of local basing, some concessions in license fees would normally be expected.
Effects of Regionalism		• Palau's representation at regional meeting has been weak in recent years, with little preparation and post-meeting info sharing. • Personal belief in the strength of regionalism especially the PNA.		Regionalism could assist a locally based company in that free movement east/west would be a great asset to LL vessels

PNG Aspirations

	NFA	Fair Well	RD	Frabelle	Sanko Bussan	Latitude 8	Devads	Tuna Industry Development Action Plan
Fishing Aspirations	• Fishing licenses will require all local processing in future • Most expansion in benefits in future will come not from fishing but from shore-side activity	• Will be soon purchasing another LL vessel	• Rather than catch more, the company will aim at processing more	• We have invested in PNG and like any investor we envision this investment to grow	• Small-scale fishing piggy-backed on to industrial scale facilities; Use of Maldives techniques • Re-introduction of PL fishing	• In ten years 50 to 60 fresh LL • Few frozen LL • For PS, continued fleet growth motivated by long-term tenure	• All PS fishing catch to go to local processors • Many more local working on vessels	• Fishing in archipelagic waters by the purse seine method will be restricted to fishing vessels that supply onshore processors. Cautious expansion of the tuna longline fishery, with a more open approach to foreign investment. • Development of the hand line fishery will be based on a ceiling of 100 vessels.
Processing Aspirations	• Most future aspirations are oriented to on-shore investment, especially in processing – and these are largely driven by EU access • Processing capacity is now 520 mt/day, soon 800 mt/day • 100 % local processing of in-zone tuna catches in future • Will can/loin greater than PNG TAC due to being able to source outside PNG waters, including the contribution from cooperating PNA members • Hope to have 3 or four more canning/loining plants in future	• An MOU for a JV at Madang Marine Park has been signed. That will involve constructing the largest cannery in PNG in 1.5 to 3 years. Would prefer that cannery to be in Manus (closer to fishing action), but there is little infrastructure in Manus. • Have not examined in detail what the other PNA countries can buy into at the marine park.	• Rather than catch more, the company will aim at processing more • Reconciling processing with the resource	• Company needed to secure access plus realized that investment in processing in PNG or the Pacific makes a lot of sense. • we are prepared to expand operations in the Pacific	• Processing is the future, especially medium size facilities (50 m kina investment)	• Loining becoming more important than canning • Number of plants to be determined by forces of competition	• A total of 6 canneries in country within a decade	• Companies which process their catches will receive guaranteed access to the resource, and purse seine vessels will receive an allocation of vessel days equivalent to their processing throughput free of charge.
Other Tuna Aspirations	• The vision for the industrial park is to provide all the necessary facilities deemed to be integral to the harvesting and processing of tuna. Madang Marine Park will "up to cruising speed" in 8 to 10 years, but the point of no return has already been reached and some processing will start in 2 to 3 years • With the size of PNG's TAC, there is room for another marine park • There are plans by two Philippine companies for a dockyard in Wewak to service WCPO PS vessels. • PS employment will increase to 2,000 people aboard and NFC capability will increase to cater for the skill demand. The observer program will be used to facilitate employment	•	• Fully committed to making the Madang Marine Pak a success • By May 2009 there should be 200 mt/day loining capacity • RD's 2,000 mt cold storage will be increased soon to 7,000 mt • Ice making capcity will expand to cater for pump boats	• Expect something big within 5 years	• Biodiesel production is key for getting around the fuel constraint to aspirations • Becoming innovative - adapting to the changing eating habits in Japan, US and EU	• For the Marine Park, Govt pushing for Madang but industry prefers Lae • Time to get up/running will be substantial	• Marine Parks at Madang and other locations; Substantial spin offs from marine parks	• "A billion kina tuna export industry by 2020."; "Building an industry – not just buying a fishing fleet" • Developing clusters of industry related to tuna fishing

	NFA	Fair Well	RD	Frabelle	Sanko Bussan	Latitude 8	Devads	Tuna Industry Development Action Plan
Effect of WCPFC Management Measures	• Because PNG has an effective management regime for tuna, the proposed WCPFC management measures for BE/YF are largely not applicable to PNG and therefore do not affect aspirations. • DWFNs have depleted BE/YF, so the onus is not on PNG to rectify the situation. • The WCPFC priority should be on placing controls on the high seas (where there is no management), rather than in-zones (where there is at least some management) Closing high seas would facilitate achieving aspirations • Some NFA staff feel that development aspirations are not well-aligned with management realities and that investors are not focused on future management controls, but rather predicated on the status quo • In near future there will be two area closures within the PNG zone	• We have FAD management in PNG so that insulates us from WCPFC FAD management controls	• Not focused on WCPFC measures, other than the concept and benefits of closing the high seas • Because (a) small fish are not purchased for canning but rather for fish meal and (b) the seiners operate close to cannery, no matter how low the price goes for tuna, there will have be an economic incentive for RD company boats to keep all tuna catch onboard.	• We are very flexible but we hope PNG protects the advantages their areas offer, because they are needed to offset the disadvantages of processing in the Pacific compared to other regions. • PNG for one has offered other measures that will still achieve the same outcome with least impact on SKJ fishing.		• More focused on what management should be done rather than on specific actual or proposed measures	Worried about resolutions focused on over-capacity, ban on export of new seiners PNG sovereign right to fish as long as demonstrating responsible management	
Effects of Compliance and IUU	• Do not know the level of IIU and therefore even less is known about its affects on PNG's aspirations – but not likely to affect the "tuna dream" • The high seas IUU (defined as most fishing there because catch reports are not available) probably has at least some effect on fishing within the PNG zone	•	•		Suspects much illegal activity but short on proof			
Effects of Access Agreement	• Future access will be tied to 100% offloading and later to onshore investment	•	• Becoming less relevant				Now no LL access, in future PS licenses to go increasingly to local based vessels	
Effects of Regionalism	• The participation of PNA countries could contribute to the success of the Madang Marine Park could, but their involvement is not necessary for feasibility. • Regional solidarity critical for achieving aspirations • Other countries look to PNG for inspiration	•	• Could be very useful in obtaining fish supplies and in leveraging domestic industry		Key to many development aspirations is regional solidarity; PNG's grudge for losing Commission HQ will not die soon; For EU EPA because of their size , PNG and FIJI have to do thing differently than other PICs			

Samoa Aspirations

	Fisheries Division	Pacific Corp. Services	Apia Export Fish Packers	Tradewinds	Tautai Samoa Association
Fishing Aspirations	• Number of vessels cannot be increased due to small size of zone. • Possibility of locally-based foreign fishing vessels licensed to fish only in high seas • Future of existing fleet closely tied to fate of Pago canneries • Ideally, size of future fleet based on a thorough understanding of such factors as catch rates, local stocks, oceanographic events, and the dynamics of fish moving through zone	• Fleet will expand until zone is fully utilized • No foreign vessels will be added to the entirely locally owned fleet	Not much possible – not room enough for additional vessels and (after installing fuel efficient engines) not much can be done on improving efficiency of fleet	• Possibilities will be determined by factors beyond the control of fishing companies or the country: the availability of fish and the status of the Pago canneries • Can see a Samoan fleet of the same size operated by the present actors but with more modern vessels.	All active members of the Association have the aspiration to move up to a 15 m vessel that could make week-long trips and be more fuel efficient than alia vessels
Processing Aspirations	• Tied to fate of Pago canneries • Some possibility of establishing a cannery in Samoa • Likely to have value adding to tuna catch for fresh/frozen markets in USA/NZ • Does not have the volume of catch to enter the EU market	• Can't sit still waiting for the canneries to close. • Moving into value adding, including loins and frozen packs.	• Must get into value adding • Loining plant of 6 to 7 mt/day	If the Pago canneries close, the company will move into value adding for the domestic hospitality industry	If Pago cannery coses, only option is to sell to the local market.
Other Tuna Aspirations	• Small-scale tuna fishing to be encouraged through Infrastructure including FADs			The company will continue in the fishing business for the benefit of the son of the owner	
Effect of WCPFC Management Measures	• [Not very focused on specific measures]	There are advantages of a quota system – vessels could shift into other fishing activities during the slack fishing which occurs during the first quarter of the year.	Not very focused on this topic but conceptually a limit on vessel numbers seem the best	[Not very focused on this topic]	[Not very focused on this subject]
Effects of Compliance and IUU	Not many cases of illegal fishing detected (2 or 3 in last three years) but considering small size of zone, could have substantial impact on resources	Not very relevant; If IUU occurs, mainly for physical interaction on fishing ground.	Occasional sightings of Fiji/Tonga vessels. Little impact on profitability, but during periods of poor fishing, can have a negative impact on crew morale/productivity	There could be some impact but not great	See foreign vessels but impact on development is unknown
Effects of Access Agreement	• Only US tuna treaty fishing at present. • Little chance of bilateral access in future given size of fleet and zone.				
Effects of Regionalism	Could build on the momentum of the Niue treaty to assist the fleet in having access to Tokelau and Cooks.	Reciprocal licensing would not be good for Samoa. Other aspects of regionalism (e.g. PITIA) are largely irrelevant	Can see advantages of working with Tokelau and Niue, but not very enthusiastic on a larger reciprocal licensing scheme. PITIA not very relevant.	Could be some advantages of cooperating with Am.Samoa or Tokelau. PITIA not very relevant	[Not very focused on this subject]

Solomon Islands Aspirations

	NFD	Fisheries Officials	Soltai	PM Policy Statement	NZ – Solomon Islands Fisheries Project
Fishing Aspirations	• Comfortable with present size of national PS fleet • Cannot keep packing more vessels into MGA; One or two more small seiners at most • Some thoughts to development of PS fleet that can fish outside of Solomons	• Small-scale fishing is to provide a substantial portion of fish to new processing plants • The processing plant investors are likely to bring their own PS vessels	• Growth of labour intensive fishing: PL, pump boat, Indonesian-style • Use of styles of PL fishing, other than the Japanese model.	• Introduction of pump boat fishing for rural fishers	• Foreign fishing vessels not excluded, but those that provide fish for onshore processing get priority for access.
Processing Aspirations	• EU rules of origin very important and could create substantial opportunities	• At least two new loining plants in the next few years	• All fish in the Solomons should be processed within the country • The Noro cannery could increase throughput to 25,000 mt in a few years	• Setting up two tuna loining factories • Strengthen Soltai for long-term survival	• Second loining plant for Honiara • Solomons is one of only two PICs that can expect substantial onshore development • A total employment of 3,000 within 2 years.
Other Tuna Aspirations		• The above plans have a two year time horizon	• Tuna fisheries and processing will replace logging as a mainstay of the economy in 4 to 5 years • The domestic nutrition aspect is important and growing	• Ensure access to tuna resource by community fishers	• Talks with PNG, Kiribati, and FSM over pooling of zones
Effect of WCPFC Management Measures	• Because the PS fishery is a FAD fishery, most important concern is over total FAD closure • Catch retention would not be effective as has no effect on Asian vessels • As there is very little BE in NFD PS catch, blanket BE measures could hurt NFD without helping BE. • Unlike NFD vessels, new seiners have deeper nets, so gear restrictions could be favorable to NFD	• Need to consider this issue more carefully	• Domestic management measures and their complications are much more important/serious • Support to catch retention measures but for company and national nutrition purposes, rather than for BE conservation • WCPFC measures mostly oriented to DWFN needs • Restrictions on FAD use would have large affect on small-scale tuna fishers		• Big picture issue is capacity controls; all else is tinkering at the edges • Restriction on entry is the highest priority for management • The recent trend to larger Asian PS vessels with deep nets that catch more BE) is a result of lower profitability
Effects of Compliance and IUU	• Illegal foreign fishing on NFD FADs is greatest source of concern • Illegal in-zone transshipment	• Little or no unlicensed fishing has been detected in recent years • Under-reporting more likely that fishing without license	• No direct impact on company, but could ultimately affect national benefits		• Unlicensed fishing not significant and what does occur has limited economic impact
Effects of Access Agreement	• Concept of preferential access for landing fish at processing facility could assist development. • Longliners physically interact with the PS FAD fishery	• As emphasis will be on domestic development, there will be less access • As domestic fishing goes up (with incentives), foreign fishing will go down	• All fishing in the Solomons should be reserved for vessels based in the Solomons.	• Access agreements to be reviewed for possibility or requiring local processing	• Foreign fishing important for supply of fish to new/planned processing facilities • Foreign fishing vessels not excluded, but those that provide fish for onshore processing get priority for access.

	NFD	Fisheries Officials	Soltai	PM Policy Statement	NZ – Solomon Islands Fisheries Project
Effects of Regionalism	• Regional solidarity critically important as it could create scarcity leading to more incentives for development • Government does not enforce 30 mile exclusion zone for FSM Agreement vessels • Attendance at regional meetings is testimony to belief in regionalism for development purposes.	• Feel that it is one of the few weapons PICs have against powerful interests of the DWFNs			• In many cases, a distraction from major issues • Needs to be done on an individual country basis, rather than on common issues for all countries. • FSM Agreement has too much "leakage".

Tokelau Aspirations

	Foua Toloa	Mose Pelasio
Fishing Aspirations	• Phasing out DWFN fishing activities and pursuing with vigor locally based LL fishing – but without using charter arrangements • Channel and wharf upgrading to enable local basing of longliners • Working with Apia or Pagopago companies to develop fishing and marketing	The Tokelau strategic and corporate plan indicates: • A Tokelau tuna vessel, probably a PS vessel • An ongoing FAD program
Processing Aspirations	• Using a mothership to transfer longline catch to Apia for sale on the Samoan market, and secondarily, the Pago market.	The Tokelau strategic and corporate plan indicates a fish processing plant on each island. These are likely to be involved in loining and producing tuna jerky.
Other Tuna Aspirations		
Effect of WCPFC Management Measures	• New Zealand did not adequately consult with Tokelau before committing Tokelau to the WCPFC obligations – and therefore Tokelau should not be bound by the convention. • If the *only* basis for Tokelau development is tuna, there is no logic whatsoever in limiting development option due to past DWFN over-exploitation	No serious thought has been given to this issue
Effects of Compliance and IUU	• Illegal fishing is having a major impact in domestic tuna industry development • Tokelau fishers have noticed a major change in the behavior of tuna and this has been attributed to illegal fishing in the zone.	Some reason to believe that there is at least some fishing occurring in the Tokelau zone (mainly from SPC from SPC logsheet data), but not sure that this is having an effect on Tokelau development.
Effects of Access Agreement	• Access agreements are hurting domestic tuna industry development • Large amounts of money are passed under the table to facilitate these deals and this has a corrupting influence on fisheries governance	Tokelau has just started bilateral licensing – have not considered its effect on domestic tuna industry development.
Effects of Regionalism	• Regionalism is very relevant to Tokelau attaining their tuna aspirations • The regional organizations need to do more to consider individual development needs – especially for the small island states	Not yet considered this.

Tonga Aspirations

	Fisheries Division	Pacific Resources Co.	TEFA Executive Officer	Former Secretary for Fisheries	Global Fishing Company	Palu Fisheries Ltd.	'Alatini Fisheries
Fishing Aspirations	50 longline vessel ten years from now years – which is the original cap under the tuna management plan Vessels will be both locally-owned and locally-based foreign	Can foresee the company having 25 vessels in 5 years if fleet can survive the present difficult period	Increase in fleet to the size during the good fishing of 2000/01: 29 vessels	• Expansion of fleet to about 30 smaller domestic vessels and about 10 larger in offshore fleet • More oriented to albacore and swordfish	• The opportunities in 10 years are determined entirely by favourable currents and upwelling and those cannot be predicted in advance. • Need larger vessels to take advantage of favorable conditions in north of zone when fishing in south is poor.	• Hard now but harder in future. • Few comparative advantages in Tonga and lots of Asian competition • Tonga needs to focus on strengths: crew availability & cost and proximity to high seas	• Use of JVs with large and appropriate partners • With the limited opportunities must constantly move from the comfort zone and try new things • Moving into alternative fisheries.
Processing Aspirations							• Tonga far too small to have ambitions like the larger PICs to the west • "Valued adding beyond CO_2", especially niche markets in NZ/Aus using the existing processing infrastructure of the company
Other Tuna Aspirations	• With 50 active vessels, enough fish for a dedicate air freighter	• Use of air cargo plane that brings mail to Pago for exporting Tonga tuna • Expansion into bottomfish and inshore species	• Use of air cargo plane that brings mail to Pago for exporting Tonga tuna	• Creating an incentive for large vessel to base in Tonga thru tax and wharf concessions			The cycles of fish prices and fuel costs are likely to be favourable at least a few times in the next decade, presenting opportunities.
Effect of WCPFC Management Measures	• Not focused on specific measures • Would like to see cap on all vessels fishing on the high seas that are not based in a PIC.	• Not focused on management measures that could be placed on Tonga LL fleet • Instead of controls on local LL fleet, controls should be placed on LL vessels that cause the resource depletion and on PS vessels. Should LL controls be applied, in favour of caps on vessel numbers		Would not like to see fishing effort reduced across the board		• Not focused on current or proposed measures • For swordfishing the concept of measures dealing with turtles and sharks are a worry	• The WCPFC is on the right track addressing BE/YF sustainability. • Conceptually, would favour "threshold quotas" that are set high enough so unlikely to affect Tonga which is located in a peripheral area with respect to tuna and therefore catches are never likely to be great
Effects of Compliance and IUU	Not enough information to determine if there is an effect on domestic tuna industry development	Negligible impact on development		• Some incursions by Fiji/Tonga vessels • Effects would be indirect through impact on resource levels, and this is hard to quantify	• IUU is totally irrelevant to LL company profitability in Tonga • Any illegal fishing that occurs is focused on sharks and this could conceivably make tuna LL vessels more profitable.		• Illegal fishing has no effect on company profitability nor development opportunities

	Fisheries Division	Pacific Resources Co.	TEFA Executive Officer	Former Secretary for Fisheries	Global Fishing Company	Palu Fisheries Ltd.	'Alatini Fisheries
Effects of Access Agreement	Not relevant	Not relevant					
Effects of Regionalism	Not focused on this issue, except for the opportunity to encourage local basing	Not focused on this issue	• Many benefits of cooperating with neighbors: training crew, air freight critical size, fleet insurance • Reciprocal licensing in does not address the present problems of the industry but has its costs	Cooperation among countries could be important in learning what not to co; avoid repetition of neighbour's mistakes in development	• Reciprocal licensing would be good if eligibility limited to vessels owned by PIC nationals • Regional cooperation could be useful for regional air freighter but nobody to organize it		• Quite necessary and relevant in many ways, especially for the industry drivers • Good for fish sanitary requirements, PITIA initiatives, and marketing • Gives the industry a greater sense of legitimacy • Reciprocal licensing would be very good.

Tuvalu Aspirations

	Master Plan for Fisheries Development	Fisheries Department	Min. of Natural Resources and Environment	Small-scale Troll Fishers	Elisala Pita	Satalaka Petaia
Fishing Aspirations	The main hope is that by offering access for tuna longliners on preferential terms (i.e. free licences for a number of years) a company will be willing to register a company in Tuvalu, and employ Tuvaluan crew and management trainees.	• By mid-2009 a Tuvalu – Taiwanese JV will have its first PS vessel, followed by 2 to 3 in future – to fish under FSM arrangement • Small LL vessels will be owned/operated by locals "like what is happening in Samoa" for sashimi market and nearby canneries	• The aspiration for 10 years from now is that Tuvalu will own/cperate a small fleet of PS vessels. Presently US$3.5 million has been committed for a 50% stake in a Taiwanese PS vessel that is yet to be built. • Medium and small-scale LL vessels	• Due to high cost of exporting and overseas competition, cannot see an export tuna fishery. • Due to inelastic demand for fish and over-exploitation of inshore fisheries, no matter how high fuel price goes, tuna trolling will remain viable	• Gradual movement into tuna boats larger than the present trolling skiffs • Cannot see PS JV producing any employment benefits or onshore investment	JV in longlining (fresh and frozen) - not only that it is economical but more environmentally friendly than PS – do not support the PS JV currently under way.
Processing Aspirations		Shore-based facilities to process for sashimi and canneries			• Using community fisheries centres in the outer islands for the production of salted tuna • Non-specified value adding in Funafuti	
Other Tuna Aspirations	Concept of "access for development": Fiji/Samoa companies providing employment and training in exchange for an agreed level of fishing opportunities in Tuvalu.	• A fishing school for training Tuvaluans for work on LL and PS vessels • Small-scale development is important and should be pursued	A fishing school within the Fisheries Department for LL and PURSE SEINE work			NAFICOT must be privatised thru JV or other partnership arrangement (local with foreign investors, or local communities with foreign investors
Effect of WCPFC Management Measures		Cognizant of need to address over-capacity but can do it within framework of Palau Arrangement – and still be able to have PS JV			Tuvalu did not contribute to overfishing so development aspirations should not be restrained by measures to control that over-fishing	
Effects of Compliance and IUU		• Big problem because Tuvalu cannot patrol its zone - there is no indication of the amount of illegal fishing. • Last case of illegal fishing was in 2005 with PS vessel from Marshalls			• No significant impact on aspirations • Some past cases of fishing inside 12 mile limit, but no evidence of large amounts of illegal fishing, and even less of its economic impact	
Effects of Access Agreement		No real relationship between licensing foreign vessels and domestic tuna industry development – except that the need for access by aspiring entrants could leverage onshore development through JVs			Access fees are critically important to the government. No past support to domestic tuna industry development because government is worried that this could interfere with an important revenue stream.	
Effects of Regionalism	The plan mentions the opportunity of the Tuvalu Government securing a number of longline licences to fish in Fiji	Regionalism is very important for domestic tuna industry development			• Regional organizations have failed fisheries development in region – look at the lack of progress in the region. PNA did not do much for development • There is considerable potential and some aspects have produced benefits in the past – for example the duty free entry into Fiji of Tuvalu fish	

Vanuatu Aspirations

	Department of Fisheries	China National Fisheries Corporation	Moses Amos
Fishing Aspirations	• The fish processing plant is intended to catalyse interest in LL fishing in the Vanuatu zone. • Most of the vessels will come from Fiji • The new fisheries law stipulates that no more than 100 LL vessels are to be licensed.	• Survival will be main aspiration for next decade. • Will increasingly shift vessels to Vanuatu from Fiji over next few years and will eventually have 25 -45 LL vessels based in Port Vila. • Can expand fishing operation rapidly in Vanuatu if conditions are favorable – can easily build 20 vessels per year • Vanuatu is more favorable than Fiji for regional centre – closer to fishing grounds	• In a few years substantial appropriate infrastructure will be in place, which will encourage fishing. • With the fuel price increases, fishing from Port Vila makes more sense – advantages of resource adjacency become more greater. • Within a few years, all vessels licensed to fish in Vanuatu that do not offload in Vanuatu will pay significantly higher fees.
Processing Aspirations	• The new tuna management plan will encourage the concept that LL vessels fishing in the Vanuatu zone will be required to offload fish at the new processing facility. • An additional processing/shipping facility is being planned by another company	• Construction has started on the processing plant. Hope to be operation in 2009	• Two new processing plants are presently under construction: one by a local businessman and one by CNFC • Bycatch will be processed and utilized for domestic as well as overseas markets
Other Tuna Aspirations			
Effect of WCPFC Management Measures	• The measures will probably have an effect, but has not considered the issue in detail.	• It is not good to cap number of vessels as there is large range of fishing capacities. • Number of hooks set is better. For freezer LL, hold capacity would be good as it is a good determinant of fishing power – except for the Taiwanese LL boats that use motherships. • Exemptions for PICs will undermine effectiveness of management measures as it is easy for DWFNs to set up phony J/Vs	• Because most of the catch is albacore, present measures and measures likely in the medium future will probably not affect Vanuatu. • Under the new tuna management plan (likely to be adopted soon), limits will be imposed and hopefully WCPFC quotas will be less strict than that adopted by Vanuatu for its fleet.
Effects of Compliance and IUU	Probably only small amount of illegal fishing, and the impact of this is unknown.	• Not important – PICs have been misled by Aus/NZ to believing illegal fishing is important, when it is not significant. • Why risk illegal fishing when it is so cheap to get license in Solomons and Vanuatu ?	Presently IIU (especially illegal fishing) is not very relevant to domestic tuna industry development, but it could become important in the future
Effects of Access Agreement	The future licensing agreements are likely to require offloading in Vanuatu, hence they could contribute to development.		Bilateral access fees are important (1.87 million vatu in 2007), but there is some flexibility in using access arrangements to promote onshore development – depending on the economics of the situation.
Effects of Regionalism	• Useful/important for domestic tuna industry development • For a small country a regional umbrella is important	The only aspect familiar with is the reciprocal licensing. Can see great difficulties of administering a large scheme and, from a fishing perspective, the only zones of interest to the company are Fiji, Vanuatu, and Solomons.	• Regionalism is important – and not just that mediated by FFA. • The MSG facilitates fish processing arrangements between countries and makes trade negotiations easier.