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## Capturing more wealth from tuna

Almost without exception, Pacific islanders interviewed and documents analysed for this project indicated a strong motivation towards capturing more of the wealth generated by regional tuna resources in the domestic economies of Pacific island countries. Interviews and documents used in this project assumed that the two main ways in which Pacific island countries could do this were: i) domestic industry development, and ii) maximising returns from distant water fleets.

### **Domestic industry development**

In this study, we use examples of domestic tuna industries in Pacific island countries to highlight strategies that are likely to lead to the kinds of domestic industry development that will capture more wealth within Pacific island countries' own economies. There are two important principles to bear in mind when considering these strategies.

One is that domestication should be economically sustainable and contribute to government revenue rather than detract from it, which means it should be wholly private-sector driven and independent of financial inputs from government. This means that tuna development is, in effect, the same as business development. For domestic tuna development to work, the economic and policy environment has to enable private-sector development.

In the early 2000s, Forum Fisheries Agency (FFA) member countries decided that reducing their reliance on distant water access fees and growing domestic tuna industries was the way to improve economic benefits from their tuna resources (Gillett 2003). Most Pacific islander interviewees and recent reports from Pacific island governments indicate that this view remains current. That is, the best way to capture more wealth from tuna resources is through 'domesticating' tuna industries. The region's prime ministers have said they see 'domestic [tuna] industry development...as an important means of increasing returns to Pacific Island Countries' (Pacific Islands Forum Secretariat 2004a). Domesticating

the benefits from tuna resources is most often understood as Pacific island nationals as resource owners displacing DWFNs, establishing locally based tuna fishing operations and doing the actual fishing. It is also, albeit less often, imagined as developing locally based tuna-processing industries.

In the past, many Pacific island country domestic tuna industries—vessels and processing plants—were wholly or partly government owned. These all failed within a few years or limped along with heavy government and aid donor subsidies, meaning their contribution to the host country’s economic development was questionable, although when they employed large numbers of people they at least spread income and human resource development opportunities among Pacific island populations. Due to the overwhelming evidence that government ownership of tuna industries is not the best strategy for domestic development, Pacific island countries tend now to seek more private-sector driven development. Because Pacific island countries have high-cost, difficult business environments, however, governments have had to induce shore-based investment through policies such as tying fishing access to onshore developments and offering generous taxation incentives. Furthermore, many of these companies rely on preferential trade access to the European Union under the Cotonou Agreement. The lack of independent private sector investment (all investment is induced, based on incentives and/or reliant on trade preferences) would seem to indicate that Pacific island countries do not have competitive advantage in tuna industries. Improving the business environment so that inducements and incentives are not necessary is crucial for domestic development.

The second principle for success is that national domestication plans must take account of geographic, economic and biological realities. For instance

- the geographic and economic environment for loining or canning tuna at a financially viable price
- the availability of suitable resources for particular fishing methods, for example, bait and schooling fish for pole-and-line fisheries
- an ability to adapt to/weather downturns due to variations in fish abundance driven by ENSO effects
- the ratio of albacore to sashimi-quality species to support an economically viable longline fishery
- the real cost of policies to ‘share’ domestic development opportunities between provinces/regions in a given country for political purposes rather than business logic
- economic circumstances: a lack of infrastructure, land, water, labour and other endowments mean that for some Pacific island countries, domestic tuna industries are unlikely to capture as much wealth as licensing DWFN vessels.<sup>1</sup>

### Maximising returns from distant water fishers

Based on interviews and government documents explored for this project, Pacific island countries’ strategies for maximising returns from DWFNs seem to revolve mostly around negotiating with DWFNs to pay as much as they can for access, and negotiating with

DWFN governments to top up industry payments with aid packages. Another strategy that has been employed in recent years is to attract DWFN vessels to trans-ship, take on supplies and undertake repairs in Pacific island ports. Some Pacific island countries have also gained value from DWFNs by having them employ nationals as crew.

Given the particular geographic and economic potential of some Pacific island countries, returns from DWFNs are, for the foreseeable future at least, likely to remain their most important source of wealth from regional tuna fisheries. Other Pacific island countries' tuna resources are not rich enough to attract large fleets of DWFNs so the returns to them will be small. Approaches to maximising returns from DWFNs thus cannot be uniform for all Pacific island countries. Two other important principles affecting how much wealth Pacific island countries can capture from DWFNs are: i) to populate the fishery with the most efficient vessels (and thus those with the potential to be most profitable), and ii) to maintain the value of catching opportunities.

Unless effective management measures (in biological and economic terms) are implemented, overfishing in the Western and Central Pacific Ocean will inevitably lead to falling CPUE and revenue streams, from domestic and DWFN vessels. Good fisheries management to optimise the economic and ecological sustainability of tuna fisheries is therefore an important determining factor. If effective fisheries management improves the profitability in tuna fisheries, it will in turn increase the capacity and willingness of DWFNs to pay more for fishing opportunities.

### **Pacific island country policies: the key to achieving Pacific island countries' aspirations**

A single principle underlies all strategies designed to capture more of the wealth from tuna resources: Pacific island governments are the main bodies capable of making the changes necessary to capture more wealth from tuna through domestication and returns from DWFNs.

Only Pacific island governments can make regional tuna fisheries economically and ecologically sustainable, by implementing sound fisheries policies in their own jurisdictions and strengthening these through regional cooperative initiatives. This is not to say that Pacific island countries are the only stakeholders or the most powerful ones in general terms, but that the political and economic nature of the situation means coastal states collectively (which for this fishery includes Indonesia and the Philippines as well as Pacific island countries) have the most crucial role to play in improving returns from tuna resources.

While domestic development must be driven by the private sector, the private sector cannot improve Pacific island countries' business environments; it can only be part of governance improvements implemented through Pacific island governments. For example, industry representatives have arguably been the prime movers behind improvements to the business environment in Papua New Guinea and Fiji, but it is the government itself that must implement those improvements. Likewise, aid donors cannot fix Pacific

Figure 2.1 Western and Central Pacific Ocean fisheries management

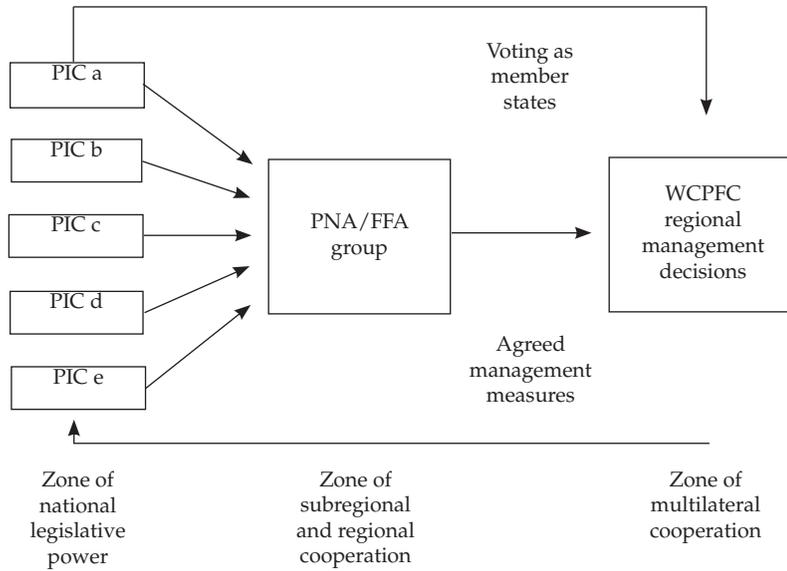
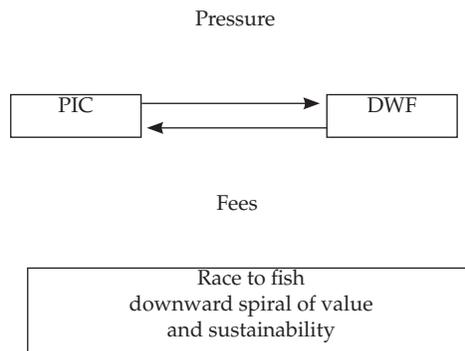


Figure 2.2 Two-way adversarial model of distant water access



Notes: PIC: Pacific island country; DWF: distant water fishing.

island economies or create an enabling environment for the private sector; Pacific island governments must do that, with or without donor assistance.

Regional bodies such as the FFA and the Secretariat of the Pacific Community (SPC) can provide advice but it is up to Pacific island countries whether they use the advice. The Western and Central Pacific Fisheries Commission (WCPFC) is the forum in which regional management initiatives will be decided, but Pacific island governments must drive this process. Regional bodies can exert influence on individual countries and, through cooperation, can initiate regional measures, but Pacific island governments are the only legislative and executive authorities within their own Exclusive Economic Zones (EEZs) (Figure 2.3).

There are externalities beyond the control of Pacific island countries that will affect management and development policies, such as international fuel prices, fisheries in Indonesian and Philippines EEZs, DWFN interests and binding decisions from the WCPFC. Nevertheless, Pacific island governments have more power than any other bodies over the factors that affect their countries' capacity to capture more wealth from regional tuna resources.

Bearing in mind the central importance of Pacific island governments in this process, there are many things that can be done to enable Pacific islanders to capture more of the wealth generated by the region's tuna fisheries. Going beyond the dichotomy of domestic industry versus maximising distant water access fees, the remainder of this section outlines 10 strategies for capturing more wealth from tuna.

## **Effective fisheries management**

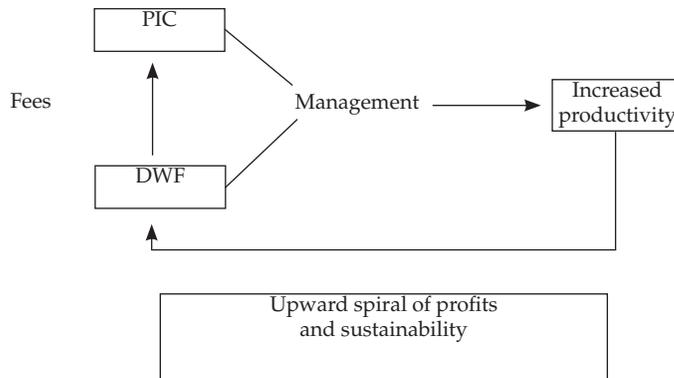
Sustainability is often included within the aspirations of Pacific island countries to capture more wealth from regional tuna resources, as exemplified in the FFA vision: 'We will enjoy the highest levels of social and economic benefits for our people through the sustainable development of our fisheries resources' (FFA 2005). The word 'sustainable' is also prominent in tuna management plans and other government statements regarding tuna industries. Despite frequent use of the word, however, Pacific island governments thus far seem to have displayed limited commitment to the ideal. Some have introduced exclusion zones to try to reduce the impact on coastal fisheries, but overall they have taken limited steps to protect the marine environment from the negative effects of tuna industries. Moves to protect the environment associated with shore-based facilities have often been driven by stakeholders other than governments, such as importing markets (Solomon Islands) and local chiefs (Fiji).

As with fisheries worldwide, Pacific island countries are faced with conflicts between a duty to protect stocks and the environment and their aspirations to capture more wealth from tuna; to gain access to, be allocated and use a fair share of the tuna resource. On the one hand, it is obvious that without enough fish to catch there can be no wealth generated from fisheries, but on the other hand individuals at the state and enterprise level naturally hope that any necessary cuts to catch or effort will fall on someone other than themselves.

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 Figure 2.3 **Mutual incentives model of distant water access**


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**Notes:** PIC: Pacific island country; DWF: distant water fishing.

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In such situations, governments feel political pressure to argue to this effect at regional forums and at the WCPFC, or to argue that the proposed cuts are not necessary at all.

### Managing for economic as well as biological sustainability

The need to manage for biological sustainability (maintaining stocks at levels capable of producing the maximum sustainable yield—'Bmsy' in the Western and Central Pacific Fisheries Convention) is well established. There is also a need to strive for optimal economic outcomes,<sup>2</sup> including for Pacific island countries, which is an area where individual states can play a significant role.

The rush to license vessels, as if the relationship between fishing effort and catch (revenue) was a straight line, and the resulting 'busts', was remarked on in a number of countries visited, particularly in reference to longline fisheries.<sup>3</sup> Some interviewees in PNA countries noted the need to ensure that management regimes involved economic as well as ecological considerations. One suggestion was that the PNA group members could gain substantial increases in access fees if they were to: i) extend the FSM Arrangement and fully pool their WCPFC allocation; ii) put in place credible measures to maintain CPUE; and iii) use rights-based management approaches to sell long-term rights (for example, 10 years) and give DWFNs maximum confidence in their investment. Certainty of the future economic viability of tuna stocks and access to them are also important for domestic investment in fisheries industries.

Early bioeconomic modelling work by the FFA and the SPC suggested that reductions in purse-seine effort could yield substantial overall increases in economic benefit, principally by reducing catches, increasing CPUE and price (by restricting supply) and reducing

the costs of fishing. Some of these findings led to assertions that the key to Pacific island countries increasing economic benefit from the purse-seine fishery was to restrict effort (see, for example, ADB 2003), and thereby increasing the prospects of raising access fees. More recent bioeconomic modelling work (Reid et al. 2006) has questioned this perspective, noting that as skipjack catches have increased, CPUE has been maintained, or in some cases increased. Revenue streams from access fees have increased, by 10 per cent between 1999 and 2003 (Lewis 2004a). Using an updated bioeconomic model, the economic benefits (rent) of reducing effort in the purse-seine fishery, while present, are forecast to be substantially less, although the effect on reduced supply in terms of increased prices could increase that benefit. In any event, the more recent work has thrown into doubt some of the original assertions about the value of the PNA group striving to reduce effort in the purse-seine fishery, and indeed, who would benefit from such constraint. It has also highlighted the need to continue to work on refining the bioeconomic model and, equally importantly, extending the results to Pacific island countries to support consideration of management options.

Notwithstanding this debate, the major constraint for the purse-seine and longline fisheries lies with yellowfin and bigeye. The challenge will be to balance the requirements of the Western and Central Pacific Fisheries Convention with respect to these species with the largely economic-driven aspirations of Pacific island countries.

### Recommendation 1

Place greater emphasis on predicting economic outcomes—particularly across fisheries, gear types and WCPFC members—when designing and determining management measures, including levels of fishing effort by domestic and foreign fleets.

### Fisheries management planning

It is important that Pacific island governments have a clear idea of where they wish to see their tuna fisheries heading in the future. All too often tuna fisheries management objectives are vague. Another common problem is a conflict between the objective to maximise economic returns and policies aimed at distributing benefits from tuna developments for social reasons.

In the late 1990s and early 2000s, the FFA and the SPC, with Canadian government funding through the Canada–South Pacific Ocean Development (CSPOD) Program II assisted Pacific island countries to develop management plans for their tuna industries. Most Pacific island countries now have tuna management plans, which provide at least some guidance, even if few have formal statutory status. The FFA 2005–07 *Business Plan* notes that the agency will assist with the review of existing plans and work towards ‘ecosystem based management’.<sup>4</sup> After spending a large amount of resources on this process, it might be timely to review what has been learned from management and tuna industry planning processes, and most importantly share the knowledge resulting from that review with Pacific island countries.

## Monitoring, control and surveillance (MCS)

Australia, which has a large budget to spend on monitoring its maritime borders, has in recent years been unable to prevent multiple incursions in a relatively small area of its northern EEZ by Indonesian fishers.<sup>5</sup> Compared with Australia, Pacific island countries' EEZs cover areas several orders of magnitude larger relative to the amount of government funds available for surveillance and enforcement, so they are unable to conduct MCS effectively on their own. Regional pooling of surveillance and enforcement is a necessary part of effective fisheries management for Pacific island countries.

Regionally, the FFA has been successful in generating regional MCS initiatives, but there is considerable scope to build on these efforts, including

- expanding the existing US Treaty regional observer program to allow observers on vessels as they transit different EEZs and, by negotiation at the WCPFC, on the high seas
- expanding activities under the Niue Treaty in respect of joint operations and shared facilities.

As the WCPFC builds its MCS framework, Pacific island countries should strive to gain the greatest level of adoption possible of current in-zone fisheries compliance measures. The aim should be to transfer (and strengthen) the existing in-zone compliance environment onto adjacent high seas, leading to more cost effective and efficient MCS outcomes.

## Rights-based management

The value of rights-based management in fisheries is well known as a means of addressing economic and biological sustainability (Cartwright and Willock 1999). The concept of rights-based fishing in a tuna fishery is not well developed, but was considered in some detail at a regional workshop in Nadi, Fiji (FFA 2002). This workshop noted that consideration should be given to strengthening property rights at three levels.

- National—using enhanced licensing conditions, for example, by extending terms to five years or more, making them transferable and using more flexible units of rights (such as hook numbers) for catch allocations; and by using the increasingly valuable rights to be allocated under the WCPFC to reduce DWFN effort and leverage domestic involvement/industry development.
- Regional—using the power of FFA members to determine total allowable catch or level of effort for areas under national jurisdiction, with allocations of high seas fishing opportunities among all participating countries, and FFA members cooperating for reciprocal access for longline vessels, mirroring the FSM Arrangement. The rights afforded under the Vessel Days Scheme (VDS) among the PNA group will be pivotal in at least two ways: i) to deal with ENSO-driven variations, and ii) through options to reduce days and make the right more valuable.
- Multilateral—using the power of the FFA group, and the PNA subgroup, to influence negotiations for participatory rights for allocation of catch/effort at the WCPFC.

Gillett (2003) sees that rights-based management could be useful for development but that two things are needed before aid donors can try to support it: i) a greater awareness among domestic fisheries managers of the benefits of rights-based regimes; and ii) improved infrastructure necessary for rights-based regimes, including policy stability and protection of use rights. Corruption is another issue that needs to be addressed by Pacific island countries before rights-based management could produce maximum benefits for national economies.

Another role for rights-based approaches is as a potential means for solving the gear interaction issue. As 'real' management measures (that is, those that effectively constrain) are introduced (or in the case of the VDS begin to take effect), there will be opportunities to introduce methods that enable trade-offs between gear types and target species. For instance, bigeye and yellowfin could be traded for skipjack in equatorial waters, and albacore in tropical and temperate waters.

### Recommendation 2

Follow up the 2002 FFA Rights-Based Workshop, possibly through a series of in-country seminars, to increase awareness among domestic policymakers and fisheries managers of such approaches.

## Managing social, political and environmental issues

Fisheries managers tend to see politics as something that ideally should be kept out of fisheries management. Some politically motivated fisheries management decisions have certainly been disastrous. On the other hand, decisions for ecologically sound fisheries management, and economically sound development strategies, are political decisions as much as anything else.

The Marshall Islands government's decision to go for service and supply industries rather than attempting to domesticate fisheries was a political decision, based on astute technical advice, which had good economic outcomes. Since fisheries management is more about managing people's impact on fish rather than about managing fish *per se*, fisheries management will always involve dealing with political issues.

Social issues are not usually given high priority, and are often listed simply as 'negative impacts' with the inference that they should be avoided if we could only work out how, and if the resources were available. Social issues are, however, not simply unintended by-products of fisheries development. Social and environmental problems arising from tuna developments must be addressed, not just for the general good of society, but because the ill will generated by socially divisive developments rebounds negatively on those developments. In other words, it is easier for a company to be successful if it has good public relations than if it has bad public relations. Public relations are a company responsibility, but the way fisheries developments fit with their social context is a matter of government policy.

As with the desire for sustainable tuna fisheries in the offshore area, the desire to minimise negative social and environmental impacts in coastal and port areas was one of the aspirations

mentioned by virtually all interviewees and documents studied for this project. Despite the widespread nature of this aspiration, however, very little has been done by governments to alleviate social and environmental problems associated with tuna industries. None have developed and implemented concrete strategies to minimise these impacts.

The impacts on coastal areas of commercial tuna developments generally fall into two categories: impacts on coastal fisheries and impacts on the surrounding environment as a result of pollution.

**Impacts on coastal fisheries.** One of the factors contributing to widespread social ill will against industrial tuna developments is the pervasive belief that commercial tuna industries are depleting the resources villagers catch for food and income. Near-shore fisheries are of paramount importance for the food security, health and income of coastal Pacific island populations.<sup>6</sup> Some studies suggest that the economic value of the informal catch in Pacific island countries would far exceed the value of the commercial catch if it were calculated systematically (King, pers. comm.) (although comparisons involving multiplier effects can be problematic).<sup>7</sup> Most coastal fisheries concentrate on reef fish, because it is easier to catch reef fish from small vessels than it is to venture out to the open sea to catch tuna. The available evidence, however, indicates that fishing pressure on reef fisheries should be alleviated in many Pacific island areas (Bell, pers. comm.; King, pers. comm.). In this case, refocusing near-shore fisheries on relatively healthy tuna stocks, facilitated by the use of near-shore fish aggregating devices (FADs), would seem a sound policy, although research indicates that FADs are not always used by villagers in ways that reduce pressure in other coastal fisheries (Gillett 1999). Several Pacific island countries, including Papua New Guinea, are following Samoa's lead and establishing community-based resource management regimes for coastal areas. Solomon Islands is doing this in conjunction with Marine Protected Areas under the sponsorship of several non-governmental organisations (NGOs).

Small-scale coastal fisheries targeting tuna based on the Samoan model were seen in the 1990s as a major opportunity for domestic fishers. The experience of Samoa, however, where hopelessly overcapitalised small-scale fisheries led to a collapse in near-shore tuna resources (Watt, pers. comm.), demonstrates the need for sound resource management. Furthermore, part of Samoa's success was based on a unique economic opportunity for trade with nearby American Samoa, a situation not replicable in other Pacific island countries. Examples where Pacific island governments have acted to manage fishing pressure on coastal resources include Morobe Province in Papua New Guinea, which has decided to limit the number of pump boats that may operate out of Lae and increase effort incrementally to avoid local depletions.

Since shark can be targeted by longline and handline gear that also target tuna, shark fisheries are connected to tuna fisheries. The escalating price of shark's fin presents a growing risk for shark populations. The reported export value of shark's fin from Milne Bay, in Papua New Guinea, rose to more than K1 million annually in the mid 2000s (the real value could be higher). As traditional stocks in Southeast Asia are depleted, buyers are likely to turn increasingly to Pacific island shark fisheries.

It is also important to know whether offshore commercial tuna fisheries have an impact on coastal tuna fisheries. It is common to hear from small-scale and recreational fishers in Pacific island countries that it is now much harder to catch tuna than it was 10 to 15 years ago, and commercial tuna fisheries are usually seen as the main cause of the apparent decline in resources (Bauro, pers. comm.; Dunn, pers. comm.; Kingston, pers. comm.; Ramohia, pers. comm.; Tamba, pers. comm.).<sup>8</sup> While increasing levels of exploitation can reduce CPUE, particularly if focused within a particular area, industrial fishing does not always equate with overfishing. Where scientific research into interactions between small-scale and industrial fisheries has been conducted, the connections between catch rates in the fisheries can be quite complex (Hampton et al. 1996). Despite the high mobility of tuna populations, and depending on the circumstances, it seems likely that the availability of particular tuna stocks to near-shore fisheries can be impacted significantly by large-scale industrial fishing activity.

**Impacts of pollution.** It is commonly believed that large-scale tuna-processing plants in Papua New Guinea and Solomon Islands pollute the surrounding environment, including damaging reef-fish stocks (Barclay 2001; Sullivan et al. 2003). Some research has been conducted into the pollution effects of the large-scale canneries Solomon Taiyo and RD (Benet Monico 2003; Mani 1994; Wallis 1999), but there have not yet been continuing environmental monitoring or enforcement schemes implemented by Pacific island governments to minimise negative environmental impacts.

The effect of commercial fisheries, including processing industries, on near-shore areas, however, is not only a resource management issue, it is about social and political management of fisheries. Scientific data about the effects of tuna industries and policies to mitigate any negative effects are only part of the solution. It is also necessary to effectively disseminate the results of such research to all stakeholders, including villagers, to enable better informed debate about the merits or otherwise of tuna industries. Village-level stakeholders should also be part of consultative advisory and decision-making committees to enable their input, and to act as a conduit for information between fisheries officials and villagers affected by tuna developments.

**Social policies.** The optimal public policy mix should manage the development of tuna industries such that it facilitates a widespread sense of social progress rather than social dislocation and polarisation of groups for and against the development. Furthermore, while it is extremely unlikely that a tuna-related coup will eventuate, the social ill will generated by many tuna developments in the region, which results in petty sabotage, adds to already difficult business environments, and, if not addressed, it could escalate. It is part of the social and political instability that discourages investment in several Pacific island countries.

One of the notable features of the tuna-processing factories in Fiji, Solomon Islands and Papua New Guinea is that while people appreciate the employment opportunities, the factories have had bad public reputations. They have been seen widely as offering unpleasant, unsafe work for substandard wages, as causing social breakdown and as polluting the surrounding environment (Emberson-Bain 1994; Hughes and Thaanum

1995; Sasabe 1993; Sullivan et al. 2003). Based on our research, these companies have been more responsible corporate citizens than their reputations suggest. It is worth bearing in mind, however, that although developing tuna processing is clearly a national government aspiration, there are large sectors of Pacific island populations who have different opinions about the desirability of such development. Failure to address the negative social reputations of tuna-processing companies has meant social groups continue to attack them. RD has been tied up in legal battles with landowner groups and an NGO that RD perceives as having slandered the company (Friends of Kananam c.2003), and RD has been the target of petty extortion rackets (*Post-Courier* 2005).

**Social issues around ports and factories.** Apart from Cook Islands, all of the Pacific island countries covered by this study have significant numbers of DWFN fleets visiting local ports and/or large-scale onshore processing factories. International ports and tuna factories are magnets for a range of social problems, including prostitution, substance abuse and violence. Some 35,000 men from the southern Philippines work overseas on fishing vessels and call into ports including those in Solomon Islands, Papua New Guinea, Indonesia, Malaysia and Taiwan. According to a health official from General Santos City in Mindanao, many of these fishermen engage in 'extremely risky behaviour' when they finish a trip, including sex with multiple partners (often involving binge drinking and sex workers), injection of recreational drugs and insertion of penile implants. Some people in this part of the Philippines have tested positive to HIV. While no cases of HIV / AIDS had been reported among the fishermen at the time the article was published, it noted that there appeared to be a high rate of tuberculosis among the fishermen, which is recognised as an indicator of AIDS (*Solomon Star* 2004). Papua New Guinea's rates of HIV / AIDS are now very high. Fishing crews visiting Papua New Guinea could contract the disease and spread it around the Pacific very quickly.

To ensure that development benefits from tuna industries are not cancelled out by social disruption, a range of social welfare and health services are needed around international ports and industrial processing centres. Local women and incoming men could benefit from advice about sexually transmitted infections (STIs). Women who are subject to violence related to substance abuse or the stress of fishing crew lifestyles need particular kinds of welfare services, as do those ostracised for being perceived as prostitutes. The lifestyles of fishing crews are very difficult, and many have mental health problems. The 2005 Forum Leaders' Communiqué pointed out the importance of regional strategies for dealing with HIV / AIDS, and the role of the Pacific Health Fund to help fund initiatives to combat health challenges (Pacific Islands Forum Secretariat 2005).

In addition to help when problems arise, a greater range of 'normal' activities (not involving sex or substance abuse) should be provided for visiting fishing crews. While vessels are in port, crews can have little to do, and crew who do not want to engage in sex or substance abuse have nowhere to escape these activities occurring onboard. The kinds of activities crews often appreciate include visiting restaurants, shopping and recreational fishing. Many simply miss social contact outside the crew, with whom they are incarcerated for the duration of the fishing trip. Houses for crew to stay at while

ashore, such as the 'Seafarer's Angel' houses around the world, would help normalise visiting crew behaviour.

**Gender issues.** Gender is a social issue for tuna industries, especially around relationships with fishing crews and disparities in pay and seniority in shore-based tuna businesses. Inequitable gender relations is one of the problems that foments social ill will against tuna developments, although previous research indicates that gender inequity is less likely to cause social disruption in the way that perceived ethnic tension has (Barclay 2004). One reason for this is that people do not consider inequity between men and women to be as serious an issue as inequity across ethnic groups. Nevertheless, addressing gender inequities was one of the aspirations for tuna development mentioned in government documents, so Pacific island countries clearly feel that gender inequities need to be addressed in best-practice fisheries management.<sup>9</sup> (Alternatively, Pacific island governments could simply be reproducing the mantras of gender analysis stipulated in most aid projects.)

**Distribution of benefits.** Almost all documents outlining strategies for tuna development listed equitable distribution of benefits among the citizenry as a key aspiration. Indeed, one of the main reasons domestication is so popular is because benefits from access fees have largely not been felt by Pacific island populations. With domestic developments, at least some of the wealth from tuna is distributed among the people via salaries and wages.

Pacific islander interviewees were particularly concerned that benefits from tuna developments should be felt in rural or outer-island areas. In strictly legal terms, villagers have no claim in customary tenure to offshore resources (Turaganivalu, pers. comm.). The social reality of customary marine tenure in Pacific island countries is, however, that villagers sometimes assert rights over resources they did not use in custom (Kinch et al. 2005). Furthermore, anecdotes suggest that industrial fishers often come much closer to shore than they should. The belief that commercial tuna fisheries are taking villagers' resources without giving any return to villagers is one of the factors contributing to social ill will towards commercial tuna industries in Pacific island countries.

Interviewees often hoped that rural fishers could somehow become involved in commercial tuna fisheries, but there were intractable problems with this, mostly because the perishable nature of the product made it difficult to transport to markets at a reasonable cost. Other ways for coastal villagers to benefit from commercial tuna industries include channelling proportions of commercial fisheries licence fees into trust funds for rural coastal development projects. Most of the tuna management and development plans in the region included such ideas, but Marshall Islands was the only one of the countries covered by this study that had instituted such a fund by 2005.

The most significant strategy employed to distribute benefits has been shifting industrial tuna developments away from established industrial or urban centres. In Papua New Guinea, this has led to large-scale processing ventures in Madang, Wewak and Lae, with longline developments spread even more widely. In Solomon Islands, there are fisheries bases at Tulagi and Noro, with many people hoping for an additional base in Malaita

(Bina Harbour). In Fiji, the Pafco cannery/loining plant is located at Levuka on Ovalau, rather than in Suva (substantially increasing operating costs).

The problem with spreading tuna developments geographically is that it exacerbates the diseconomies of scale that already damage the economic viability of Pacific island country developments. Having many locations for industrial development means each suffers from infrastructure and human resources deficiencies that make them uncompetitive internationally. RD has been trying to attract more businesses to Madang for some years but the Papua New Guinea government seems to want ‘a tuna factory in every port’, echoing the ‘meat cannery in every town’ scenario of the late 1980s that saw the establishment, and subsequent collapse, of several competitors to James Barnes Pty Ltd’s monopoly (Bowman 2005). Political and social aspirations to spread developments around the country thus constrain the economic viability of domestic industries, thereby confounding the overarching economic aspiration to capture more wealth from tuna resources via domestication. Policy decisions about the geographic locations of tuna developments are a juggling act between the economies of scale and synergies provided by consolidating industries, with social and political imperatives to bring developments to particular locations.

### Recommendation 3

Base tuna management and development on the principles of ecologically sustainable development, balancing economic, environmental and social goals and outcomes.

## Increased access fees

Access fees for DWFNs constitute an important source of revenue for four of the Pacific island countries covered by this study (Marshall Islands, Kiribati, Papua New Guinea and Solomon Islands), all of which are members of the PNA group. Revenue shortages mean many PNA countries are unable to provide adequate health and education services for their populations, and income from access fees provide vital discretionary budget support. Many commentators—for example, at the Pacific Islands Forum—have remarked on how little of the gross value of the tuna fishery (usually 5–6 per cent, with 7–8 per cent achieved in some years by some countries) is returned to states through access fees. This complaint is somewhat misleading, because access fees must be taken out of profits. It is arguable that with the current economic status of tuna fisheries, especially with fuel cost increases, 5–8 per cent of gross value is possibly as high as DWFNs can be expected to pay (Tumoa, pers. comm.; van Santen and Muller 2000). Nevertheless, there are three main ways in which Pacific island countries can increase the revenue raised through access licence fees (in addition to making the licence more valuable through improved management).<sup>10</sup>

## Reconsider the basis of access agreements

While it is assumed here that DFWN-driven fishing will be a continuing feature of tuna fisheries in many Pacific island countries, there should be careful consideration of alternative models. One is DFWN fishing that acts as a ‘kick start’ for appropriate domestic

industries. Clark (2002) considers a range of options for replacing access agreements, using approaches introduced successfully in Namibia, based on fishing rights. It is a basic economic principle that by restricting rights their value increases. To introduce rights-based management of fisheries means establishing rights and empowering the individuals and locally registered companies holding the rights, who are in turn obligated to pay fees and are expected to meet certain standards in terms of investment, job creation and so forth. Clark suggests that through this approach the role of distant water access agreements is reduced or eliminated because vessels from outside the region are allowed to operate only under charter to or in joint ventures with domestic rights holders.

Papua New Guinea has been successful in pursuing a strong domestication policy by providing preferential access to fishing opportunities to those companies prepared to make onshore investment, particularly in the area of processing. Having one of the most productive EEZs in the region has strengthened Papua New Guinea's capacity to implement these policies.

An approach similar to the one Clark recommends has been applied in longline fisheries in three of the countries studied (Papua New Guinea, Fiji and Cook Islands), with definite increases in domestic industry activity. Various factors, including ineffective fisheries management, governance problems and policy instability, have tended to erode some of the potential gains. Nevertheless, the results show the potential benefits arising from careful review of distant water access agreements and the pursuit of alternatives.

Other approaches include reconsidering the current form of bilateral access arrangements, many of which are based on agreements between distant water fisheries associations and Pacific island governments. Such agreements tend to result in a large number of vessels being licensed, some of which are relatively inefficient. It makes good economic sense to look for the most profitable vessels (and thus those most able to pay the maximum fees) through more direct licensing arrangements, possibly directly with individual companies. If current plans for the VDS are successful, these more efficient vessels will then take up the limited (and therefore more valuable) fishing opportunities (licences).

### Improved administration and governance

Pacific island countries' fisheries administrators prefer to keep information about the real price of licence fees secret, and regional bodies such as the FFA and consultants working in the region often support them. It has been argued that in order to be able to make a useful assessment of the economics of tuna fisheries in the region, economists must know how much the access fees are, as well as the level of tied aid and other features of the agreements, which many consider form part of the access equation (Gloerfelt-Tarp, pers. comm.).<sup>11</sup> Fishing operators also need clear information about fees to make long-term strategic decisions about their investments. In addition, a more transparent exchange of access agreement information, including fee levels, would help deal with the longstanding divide-and-conquer tactics employed by DWFNs, who thrive on intense bilateral negotiations.

Another improvement that could be made is to increase the level of expertise available to coastal-state negotiation teams. Usually DWFNs host negotiations and offer to pay only for a limited number of fisheries officials (often two) to come to negotiate. One interviewee suggested that FFA advisors should join coastal-state negotiation teams, as was the case in the early days of establishing fisheries agreements in the region. A number of interviewees also said that it would be of value to have negotiations conducted in the coastal state, so that experts from all relevant government departments could participate, strengthening negotiation teams.

Some form of 'gift' to coastal-state negotiators was widely assumed by interviewees to be part of distant water access negotiations with at least several of the DWFNs. It was felt that such gifts were probably a negative influence on the outcome for Pacific island countries, because they carried an expectation that the recipients would not push so hard for higher fees. An added advantage of having negotiations conducted in coastal states would be to diminish the opportunity for the passing of 'brown envelopes' to influence negotiations. Dealing with governance problems in access fee negotiations has an immediate positive effect on the amounts of revenue generated. Papua New Guinea's fisheries bureaucracy reforms led to revenue from access fees jumping from an estimated US\$5.8 million in 1999 (Gillett and Lightfoot 2002) to more than US\$9 million in 2002 (Lewis 2005), and US\$13.6 million in 2003 (Preston, pers. comm.).

Governance issues in access fees are not just about corruption and setting up systems that are transparent and accountable; they are about capacity. Small government departments without experts in fisheries finance find it difficult to know the best basis for calculating fees and how to independently check market figures to make sure DWFNs are paying the appropriate amounts (McCoy and Gillett 2005; van Santen and Muller 2000; FFA 2001). The FFA has provided assistance in the form of bilateral briefs to individual countries to inform bilateral negotiations, but could do considerably more if FFA personnel were included, at least on an occasional basis, as advisors on national delegations.

### Alternative negotiating models

Over the years there have been many studies of alternative access arrangements that could enable Pacific island countries to increase fees. The most obvious one is that countries should negotiate collectively with DWFNs rather than bilaterally. Lewis (2004a) suggests at the very least sharing information among neighbours or like-minded countries to enabling a semi-coordinated approach to access negotiations. He notes that coordinated or semi-coordinated approaches have not been tried in the atmosphere of secrecy and mistrust that pervades access negotiations in the region.

Pacific island countries have never tried most of the ideas raised in previous studies<sup>12</sup> on how access fees can be increased. Some of the reasons for this include

- most studies were done by consultants who submitted reports to the FFA Secretariat, who are already aware of the issues; they were not discussed in consultative forums/ workshops, at a national or regional level

- a perception that cooperation would mean surrendering sovereignty and decreasing the ability to negotiate 'tailor-made' agreements suited to each country
- unwillingness to redistribute benefits to recompense for cooperation from less endowed Pacific island countries in the FFA group
- a perception that Pacific island countries might lose out from bilateral aid deals if they join a multilateral push to negotiate fees (a threat Japan has made)
- unwillingness to forgo personal 'perks' of bilateral arrangements
- inertia of small government departments trying to get by on limited resources with limited capacity and simply being unable to try new things or to organise joint negotiations.

#### Recommendation 4

Hold an access fee summit (hosted by the FFA) including Pacific island country fisheries officials, other stakeholders and experts to discuss various ways of licensing DWFN vessels, including improving the existing access fee-based arrangements and alternatives, such as appropriate rights-based licensing/chartering arrangements. The summit should revisit the many reports on increasing access fees that have been produced over the years and consider seriously which ideas could work in practice.

### **Creating a business environment to capture wealth**

Probably the biggest impediment to domestic tuna industry development in Pacific island countries is that the business environment is largely not conducive. Production environments are high cost and macroeconomic policies encourage investor mentalities of short-term gain rather than long-term commitment. While the much maligned Ting Hong company was infamous for this kind of mentality in the 1990s, it should be noted that Pacific island governments have attracted this style of operation by making it difficult for foreign and even locally based companies with long-term visions to be successful. Improving macroeconomic policies and fixing some of the policies obstructing business development will improve levels of foreign and local investment in business in general, including in tuna industries. Following is a list of areas in which Pacific island governments can facilitate investment, including for tuna industries, drawn from ideas put forward by interviewees and the literature (especially Gillett 2003).

#### **The role of government**

Our research found that few fisheries officials believed state ownership of enterprise was a good idea. State ownership has continued in places such as Kiribati, where it is not clear how the government might best withdraw from commercial operations it set up years ago, and how public-sector involvement can be avoided when there is a negligible private sector (Onorio, pers. comm.). Most fisheries officials interviewed felt that the private sector was the appropriate engine of development, so the government's role was to set up a policy environment that would encourage private-sector investment. Translating this aim into reality has some way to go in most Pacific island countries and should be a key objective for those states wishing to attract and hold appropriate investment in tuna fisheries.

## Coordinated approach

With tuna being one of the major economic resources for many Pacific island countries, it is important that the whole of government has a working knowledge of tuna fisheries development policies, not just fisheries departments. Sometimes senior government officials in other parts of government, who are not aware of the history of failure of virtually all government-owned fisheries enterprises in the Pacific, keep the call for state ownership alive. If such calls become influential in policymaking, vast amounts of revenue could again be wasted.

Another reason why it is important for other government departments to be aware of developments in fisheries is that they can unintentionally obstruct tuna industries. For example, Papua New Guinea's national carrier, Air Niugini, did not effectively have the capacity, competitive prices or the route connections to be suitable for chilled fresh tuna exports, so PNG longline fishing companies tried to organise charter flights from an airfreight company. Air Niugini, however, wanted to retain its monopoly status, so it lobbied effectively to prevent departmental approvals for regular use of the airfreight company and prevented any tuna shipments from using the cold-store facilities at Port Moresby airport (*The National* 2005b). After several years, the company Heavylift secured permission to run regular tuna freight flights from Port Moresby, without access to the cold store, but by that time all of the longline fisheries outside Port Moresby had closed down, largely due to the high price and logistical difficulties of Air Niugini's services (Tai 2004). Everything from taxation on inputs and immigration rules for staff to port infrastructure and roads affects tuna businesses, so interdepartmental coordination is vital.

## Policy stability

Policy uncertainty is a major constraint to industry development in Pacific island countries (Bowman 2005). Without certainty, businesses cannot estimate their future costs and options. The nature of politics in many Pacific island countries is not conducive to policy stability. Frequent changes of ministers and government means the policies of the previous government are discarded. Our research uncovered many instances of policy instability, and industry interviewees cited it as a problem.

## Taxation and other government fees

Fisheries managers understand that excessive taxes can threaten development, but taxation officials might see tuna developments as a source of revenue to be 'milked' (Gillett 2003). Locally based foreign fleets left Papua New Guinea in the 1980s because of increasing duties on fish exports. Economists recommend a stable, fair, effective tax regime as beneficial, while 'rubbery' tax regimes in which companies feel they can pressure government to avoid certain taxes as an incentive to invest are not helpful to business development (Hand 1999). Previous reports have found that investors in general tend to prefer stable, reliable policies and trading environments over financial concessions (Gillett 2003; ADB 1997).

Our research found that Pacific island countries still tend towards punitive taxation regimes with *ad hoc* tax relief offered to some investors. In Papua New Guinea, one report estimates that the level of incentive given to RD in its first five years of operation means lost revenue cancelled out the development gains in those years when the large processing factory employed 3,000 people in Madang (Gillett, Preston and Associates 2000). Kiribati has had charges of up to 60 per cent on some tuna industry inputs. The Solomon Islands government contributed to NFD leaving the pole-and-line fishery by charging 35 per cent duties on a new vessel. On the other hand, the Marshall Islands government's decision to cut taxes on fuel for tuna vessels was one of the factors that enabled its service and supply industry to take off, in line with Gillett's (2003) finding that low fuel taxes were directly related to domestic industry development.

### Effective, efficient government services

One of the main ways governments can create an enabling environment for business is through providing timely, accessible, effective, consistent and reasonably priced services. The World Bank's Foreign Investment Advisory Service (FIAS) Sydney office could assist with implementing such changes in Pacific island countries. Some of the main government services raised by interviewees as important for tuna industries include

- fisheries licensing
  - In Papua New Guinea, lengthy delays in fishing licences for domestic operators add to investor uncertainty.
- foreign investment and working visa approvals
  - In Cook Islands, the Development Investment Board facilitates investment applications through other government departments. The board can facilitate three-year working visas in a two-week turnaround.
  - 'Silo' departmental approaches in Solomon Islands, Papua New Guinea and Kiribati mean investment authorities can do little to facilitate applications; business and work visa application processes are said by investors to be cumbersome and add considerably to costs.
- meeting food safety requirements for export destinations
  - Meeting the requirements for the US Food and Drug Administration and the European Union's 'list-one' status on monitoring and regulating food safety standards to enable fishery producers to export easily to these lucrative markets. Currently only Papua New Guinea has EU list-one status.
  - Marshall Islands has used FAO assistance with hazard analysis critical control point (HACCP) systems to improve market access for its fresh-tuna exports.
- administration of land tenure
  - Access to land for business development was a constraint in all of the Pacific island countries covered in this study—for reasons of limited space in Kiribati, Marshall Islands and Cook Islands, but also because customary land tenure systems make it difficult to acquire secure, reasonably priced access to land in many countries.

## Recommendation 5

Pacific island government officials, with industry representatives, review the delivery of government services, to highlight bottlenecks and ways of streamlining bureaucratic processes to increase industry efficiency and thus profitability.

## Infrastructure

Domestic and service and supply industries for DWFNs have been constrained in many Pacific island countries by a lack of infrastructure, and by inadequate maintenance and management of infrastructure (Gillett 2003). To some extent, the private sector will provide its own infrastructure where necessary. On the other hand, the RD and Soltai<sup>13</sup> processing companies have had to install infrastructure (such as a fresh water supply) that in competitor countries would be provided for them, which has added to already high production costs, detracting from their economic viability and therefore their capacity to generate wealth for Pacific island countries. Seaport and airport infrastructure were most commonly cited as being in need of improvement.

## Freight

An FFA study into airfreight from 2002 identified regional domestic longline industries as being at risk because of their reliance on passenger routes for provision of low-capacity, high-cost airfreight (Tamate 2002). Conditions have deteriorated since then, with fuel price increases and new passenger planes having lower freight capacities. Of the countries covered by this study, only Cook Islands and Fiji had large enough tourist industries to have the connections for reasonably priced airfreight on passenger planes to the appropriate destinations (Japan, Europe and the United States). The remaining countries used a combination of dedicated freight and passenger flights. Among many other recommendations, the FFA report recommended regional coordination of airfreight to address these problems. This report was one of those that failed to be disseminated to people who might be able to use it: apparently only one industry person saw the report during the period when it was 'fresh' and its recommendations might have been useful (Gillett, pers. comm.). It seems likely, however, that if regionally organised commercial freight routes for tuna industries were commercially viable the private sector would already have moved into this area.

High-cost infrequent sea freight was also cited as a major impediment by industry interviewees. Sea freight added greatly to canning/loining production costs in Papua New Guinea, Solomon Islands and Fiji. Marshall Islands' loining plant had a sea freight advantage, with a high volume of vessels bringing fresh food and drink for US military personnel based there.

There is a limited amount Pacific island governments can do to effectively facilitate freight, especially if they have small populations and are geographically remote from major trade routes. Getting goods in and out at competitive prices effectively limits domestic tuna development in many Pacific island countries. The only way freight costs can become economical in these circumstances is if freight is consolidated and its volume increases, for example, through large-scale domestically based production.

The private sector can work out for itself whether a particular location has adequate transport links, and whether air and seaport infrastructure is adequate and efficiently run. There is a great deal of scope for government improvement of infrastructure facilities and management, but investments in expensive infrastructure should be made only after extensive industry consultation.

## Finance

Interviewees for Gillett's 2003 study raised government facilitation of credit for fisheries as a necessary intervention for development of tuna fisheries. In our study, credit seemed to be a constraint only when a commercial track record was lacking. Interviewees from profitable companies, such as Land Holdings in Cook Islands and NFD in Solomon Islands, said they had no problem with access to commercial finance. Companies such as Soltai, with a poor profitability record, did have problems accessing finance. Access to finance is thus directly related to profitability.

Gillett (2003) pointed out that failed domestic development attempts in the past have had negative effects on the availability of credit for fisheries industries. Most Pacific island countries have made finance available for domestic fisheries development via development banks or aid projects to businesses that would not be financed under commercial lending criteria. Most of these have failed, with negative financial consequences for the borrowers. Giving Pacific island fishers access to credit when they are not credit worthy and are unlikely to make a commercial success is generally worse than not helping them. The resulting financial ruin and damage to their confidence as well as that of the lending institutions impacts severely on future development.

Fisheries entrepreneur Robert Stone's experiences in Fiji illustrate how credit for commercial fisheries development can work successfully. After managing the Fiji government-owned fishing venture Ika Corp for some years in the 1970s, Robert Stone wanted to enter the industry himself. He approached the banks for a loan to buy a tuna pole-and-line vessel, but was refused on the basis that he had no track record as a commercial fisherman. He then bought a small boat with his own money and fished commercially for snapper for three years. He returned to the Development Bank with the records from his snapper-fishing venture and was given 100 per cent credit for his first pole-and-line boat. He successfully operated this vessel, and others he bought, for more than a decade before declining skipjack prices encouraged him to leave the fishery.

## Investment hubs

Fisheries, fishery service and supply industries and fish-processing industries can all enjoy economies of scale and synergies from consolidating in industrial investment 'hubs'. China's 'export processing zones' have become the centre of the economic boom on the east coast. Other countries have also successfully generated business development through clusters of firms with operational synergies, which share a pool of infrastructure and resources (including human) that improve as more companies join the hub. Business studies have long recognised clusters as drivers of innovation, facilitating business

development by increasing the productivity of the companies in the cluster, and by stimulating new businesses (Bowman 2005).

Economic viability has been a major constraint on Pacific island countries generating more wealth from their tuna resources, especially because of high-cost business environments. Policies encouraging the development of hubs with core competencies and supporting infrastructure can assist with tuna industry development. RD in Papua New Guinea has attempted to attract other investors to a marine industrial park north of Madang, but Pacific island governments have not employed the idea of hubs in development policy. Indeed, for social and political reasons outlined earlier, Pacific island governments have done the opposite and damaged the economic viability of domestic industries in order to spread the benefits of development, often for political reasons.

A hub approach to development policy would help alleviate diseconomies of scale for freight and make it more likely that governments could afford to provide and maintain adequate infrastructure.

### **Creating public policy systems to capture wealth**

Fisheries policy reform and departmental restructuring in some Pacific island countries has led to improved business environments and therefore greater private sector development. On the whole, however, fisheries departments have not tried most of the ideas suggested in the many reports on fisheries development produced by the FFA, SPC and ADB. Pacific island countries unable or unwilling to adopt governance reforms in recent years have had stagnant private sector development. Some of the key changes that can enable Pacific island countries to capture more wealth from tuna are

- reorienting public policy towards enabling private sector development
- greater openness with useful information about tuna
- improving governance.

Below are some suggested improvements to fisheries governance systems and related processes that could improve returns to Pacific island countries.

#### **Fisheries authorities**

The experiences of Papua New Guinea in restructuring from a government department oriented to fisheries extension services to a relatively independent statutory authority oriented to provision of services to industry and collecting fees on behalf of government (ADB 1998) offer many lessons for the region. Most Pacific island fisheries bureaucrats are paid extremely low salaries, which is not a good incentive. Under the National Fisheries Authority (NFA) reform, staff were paid more and were expected to work at a higher level than they had in the old department. The NFA was well funded and equipped to do its work, which had a positive influence on outcomes, such as greatly increased revenues gained through access fees. Improved policies and administration also contributed to a boom in domestic development. The value of Papua New Guinea's tuna exports went from about K3.5 million in 1996 to more than K220 million in 2002 (Gomez 2005). The

NFA's main problem proved to be that which devils statutory authorities the world over: it was difficult to ensure good financial governance. A number of Pacific island countries in this study were considering a move to the fisheries authority model because it had much to offer—in terms of staff incentives to excel, arms-length operation from the minister, the ability to make decisions and accountability—but these countries hesitated because the authority model requires a high level of governance and trust. A powerful but dysfunctional board structure open to bias and corruption presiding over many millions of dollars of public funds could be worse than existing bureaucratic structures.

### Tuna management and development plans

Gillett (2003) found that countries that adopted tuna management plans had positive outcomes in policymaking for and administration of tuna industries in terms of transparency, stability of policies affecting the sector and government–industry consultation. Based on our observations, it would appear that the tuna management plans were not the causal factor behind improved policies and administration; rather, the improvements came from the will and capacity to improve governance, and the plans were a valuable guide. For example, Fiji and Papua New Guinea made extensive reforms to their governance of tuna industries in the past decade, and actively used their tuna management plans as part of that. Marshall Islands and Cook Islands did not have such plans, but they also made governance improvements, some of which were along the lines suggested in reports commissioned as preparation for tuna management plans, such as Chapman (2001, 2004b), and Aldous (2005). Solomon Islands and Kiribati had comprehensive tuna management plans, but did not follow them.

Some form of publicly available plan or charter of fisheries policy is important for transparency and for the private sector to be able to rely on policy directions. For the plans to be reliable, however, they should have legislative force. One of the problems with the plans drafted in the past five to seven years is that they were not well 'owned' by Pacific islanders, being drafted by short-term consultants. In addition, there has been limited follow-up in terms of evaluating progress with the plans and regularly revising them to take account of the highly dynamic nature of the tuna fishery.

A great deal of effort and resources have been put into tuna management plans regionally in the past decade. It could be a good time to review this process.

#### Recommendation 6

Review successes and failures in tuna management and development planning processes to date and base future efforts on lessons learned. Develop tuna management plans such that they are 'owned' by nationals and have agreed, achievable goals and timelines. Plans should have legislative force. Progress needs to be assessed on a regular basis, and goals and strategies revised to ensure alignment with national and regional policies, as well as tuna fisheries and market dynamics.

## Consultative and transparent decision making

Consultative decision making can lead to more effective policies in various ways.

- Industry can help make better-informed management and development policies and administration.
- Environmental NGOs can help with resource management and public relations.
- Social and political stakeholders can help make more socially and politically apt policies and administration, and help with public relations.
- Other government departments can promote consistent policies and help address relevant issues outside fisheries' jurisdiction (such as taxation).
- Other Pacific island countries can improve and harmonise management and development initiatives.

Pacific island governments, however, tend not to see the potential value of external input to decision-making processes. Tuna management and development plans included institutionalising and regularising intergovernment departmental and other stakeholder input into decision making through consultative committees, but none of these ideas have been implemented in a significant way, although some governments among those covered by this study have *ad hoc* cross-sectoral consultation. On the whole, Pacific island countries have been 'slow to embrace the concepts of transparency and consultative processes' (Cartwright 2004).

**Non-governmental organisations (NGOs).** NGOs can act as a conscience to help moderate government policies and keep governments in contact with their constituents, but NGOs have not thus far played much of a role regarding tuna management or development in the region. Pacific island governments are not used to including NGOs and do not really see them as being legitimate voices in decision-making processes. Pacific island governments fear that a range of problems will arise if NGOs are allowed into government processes (Cartwright 2004). Some Pacific island countries take an adversarial approach to industry NGOs (INGOs) (Gillett 2003), and many are suspicious that environmental NGOs (ENGOs) are anti-government and/or anti-development. One of the problems with accepting NGOs into decision-making processes seems to be the perception that NGOs are 'Western', so developing a 'Pacific Way' for NGOs could help them to be seen as legitimate stakeholders by Pacific island governments.

**Fishing associations.** Strong fishing associations seem to be correlated positively with industry development, while poor industry–government dialogue correlates with difficult business environments (Gillett 2003). The relationship between industry and government should ideally be one in which industry can freely provide constructive criticism without fear of reprisal, and governments are able to respond constructively and make changes where appropriate. Pacific island countries' presentations of issues in the Multilateral High Level Conference and PrepCon processes leading up to the WCPFC showed the lack of INGO input, being government focused rather than tailored to meet the needs of domestic industry development (Cartwright 2004). INGOs are important because they are at the 'coal

face' of fisheries management, so understanding of their situation is crucial for effective management, especially in terms of setting fees and compliance (Cartwright 2004).

Notwithstanding a general reluctance to include other stakeholders in decision-making processes, Gillett (2003) found that INGOs were seen by Pacific island governments as a positive thing. And Pacific island countries have included INGOs in some decision-making and negotiating processes, certainly more often than ENGOs (Cartwright 2004).

Interviewees noted that the regional fishing industry association (Pacific Islands Fisheries Industry Association [PIFIA]) established in September 2004 had, despite a promising start, not worked as planned because company owners were mostly too busy to participate effectively. This reflects findings from another study that found industry representatives did not have the time to attend lengthy regional fisheries management meetings (Cartwright 2004). The Tuna Boat Owners Association of Australia worked around this problem by employing a professional representative familiar with government processes and able to effectively disseminate information and lobby government on behalf of the industry. This could be a useful model for PIFIA to consider.

### Recommendation 7

Appoint a professional regional representative (possibly part-time) to represent the interests of Pacific island country tuna industries, working closely with the FFA. The representative should be adequately funded to travel and liaise to improve consultation and inclusion. In particular, the representative should attend regional meetings and set up information networks with industry players.

Constraints relating to environmental issues are becoming increasingly important for tuna industries. These issues might be relatively minor compared with tuna stocks and by-catch management, but they impact on Pacific island countries' ability to sell their products in the sensitive markets of the United States and Europe. A recent study found that 79 per cent of European consumers, supermarket buyers, chefs and restaurateurs said that the environmental impact of seafood was an important factor in their purchasing decisions (WWF 2005). International campaigns to ban longlining because of stock depletion in some tuna species and incidental deaths of birds, turtles and sharks damage the public image of tuna as a product, as does damage caused by pollution from vessels and ship groundings. If brought into the decision-making process, some ENGOs can work with governments and industry to make improvements in these areas.

### Recommendation 8

Bring industry, environmental and social/community NGOs into consultative decision-making processes as envisaged in tuna management plans.

## Availability of information

One of the contributing reasons for the lack of action by Pacific island governments in exploring the feasibility of more of the ideas in reports already commissioned on developing tuna is that they are often not easily available. The SPC and ADB have made many of their

reports available on their web sites, although the SPC web site is not very easy to use. The FFA, however, keeps country-specific reports confidential, leaving it up to Pacific island governments to disseminate them as they see fit. The SPC treats its very useful national tuna status reports the same way. Pacific island governments rarely make reports freely available within relevant departments, let alone to industry or other stakeholders. As a result, the usefulness of the many expensive reports produced is curtailed, the main beneficiaries being researchers and consultants such as ourselves, who have the contacts to be able to access them. The second step therefore is to make the reports more widely (in most cases publicly) available so that other stakeholders, especially industry, can make use of the ideas in them.

### Recommendation 9

Sponsor agencies to make consultants' reports publicly available as a general rule. The FFA or the SPC to develop and manage a publicly accessible bibliographic database of publications with relevance to tuna in the region.

## Accountability in tuna governance

Papua New Guinea's reforms in fisheries governance since the late 1990s demonstrate useful lessons for other Pacific island countries. On the one hand, the improvements to government capacity and policy were reflected in booming domestic industries and increased revenue from licence fees. On the other hand, improvements in the fisheries sector could not be quarantined from the governance problems remaining in the PNG government system as a whole (Pitts 2002; Lewis 2005). Current thinking on corruption prevention indicates that it is best approached as a whole of government (or even whole of society) issue (Larmour and Wolanin 2001). In this sense, fisheries policymakers can improve transparency and accountability within fisheries, while collaborating in wider efforts to improve these factors in government as a whole.

In recent years, the Fijian and Solomon Islands governments have taken steps to make fisheries officials accountable for apparent corruption with licence fees. In addition, the Solomon Islands Fisheries Department, as part of a government-wide initiative, has started improving its administrative systems to be more accountable, through tying the budget to documented planning, budget estimates and annual reporting of achievements and expenditure.

While high levels of corruption have not necessarily impeded economic growth in countries around the world (China is one example), industry interviewees for this study were unanimous in describing corruption as a constraint on their business.

## Industrial development policies

It is a widely held belief that because most Pacific island countries have a high-cost production environment, and they do not have a competitive advantage for developing domestic tuna fishing or processing industries. Some economists therefore advocate that Pacific island countries would gain more wealth from maximising access fees

from fleets from countries that do have competitive advantage in tuna fisheries, while concentrating on improving economic institutions and business conditions so that private sector development can occur independently (Petersen 2002a, 2002b). On the other hand, many of the fisheries development projects of the past were government owned, and were very inefficient. And, as we have discussed in a previous section, individual Pacific island countries have very different potentials for achieving domestic tuna industry development.

Nevertheless, domestic tuna industry development, even if somewhat economically skewed, at least brings some benefits in terms of employment and human resources development (Rodwell, pers. comm.; Barclay 2000, 2005). In any case, most Pacific island countries strongly desire to develop domestic tuna industries and use taxation incentives and tied fishing licences to encourage such development.

The many failed domestic development attempts from the past contain lessons about what does not work. These have damaged Pacific islanders' faith in business as a way to achieve development and negatively influenced the confidence of banks and other lending institutions in fisheries, as well as wasted a lot of government revenue. One of the important recommendations from Gillett's (2003) report was that any new developments should be technically and economically evaluated before any investment was made. The following sections detail strategies for industry development based on what has worked in the six Pacific island countries covered by this study.

### Developing domestic fishing industries

Natural resources specialist with the ADB Thomas Gloerfelt-Tarp is puzzled by Pacific island countries' determination to domesticate industrial tuna fishing as a way to bring more of the profits in-country, considering that tuna fishing has not been very profitable for more than a decade (Gloerfelt-Tarp, pers. comm.). Many of the Pacific islander fisheries officials interviewed for this project were aware that it was difficult to make a profit in tuna fisheries, but they still aspired to have locally owned and managed tuna-fishing companies. Kiribati's Permanent Secretary for Fisheries, David Yeeting, explained that this aspiration was 'an emotional thing'. The sea and fish are so important in Kiribati culture, I-Kiribati want to be involved in tuna fishing despite the difficulties (Yeeting, pers. comm.). This being the case, it is vital that Pacific island countries learn from previous fisheries development successes and failures to help identify those projects that are most likely to cover their costs and least likely to cost Pacific island governments scarce revenue.

Many reports have outlined potential fisheries development policies for purse-seine, longline and pole-and-line fisheries (ADB 1997; Chapman 2004b; Gillett 2003).<sup>14</sup> We do not therefore present an exhaustive list of all possibilities for domestic fisheries development; rather, we present a list of principles underpinning successful domestic fishing companies in the countries under study. Most of these relate to longlining, as this is the option pursued most commonly for domestic development.

### Decreasing the fuel bill helps viability

Rising fuel prices are part of the reason why fishing is less profitable these days. Governments can provide some relief by making sure their taxation regimes and infrastructure for fuel delivery do not unnecessarily add to prices. Some companies with fleets of 10 or more vessels have been working out ways to reduce their fuel consumption by using carrier vessels to take fuel to their fishing fleets in the fishing grounds, and bring back the catch, rather than having each fishing vessel steam to and from port to offload catch and fill up with fuel.

### Fisheries should be targeted precisely to local resource endowments

The case of Cook Islands' southern longline fishery demonstrates clearly the importance of matching fishing style to local resource endowments. Taiwanese company Gilontas used vessels and crews accustomed to fishing for albacore for the cannery market, but Cook Islands albacore stocks were not productive enough for this kind of relatively high-volume, low-value per unit style of longline fishing. Gilontas withdrew from Cook Islands within a couple of years of entering the fishery. Land Holdings Limited focused on maximising the quality and therefore the value of each fish through careful handling on board and getting the fish to market quickly. Cook Islands' southern waters contain fish that can fetch high prices on the sashimi market, including bluefin. This approach to fishing has built the reputation of Cook Islands' tuna in the Japanese chilled-sashimi market. Land Holdings Limited has achieved prices of up to NZ\$60,000 per fish and is financially successful, despite the seasonal nature and relatively low productivity of the southern Cook Islands fishery.

### Chilled fish export businesses need suitable airfreight arrangements

No matter how good catches are, if the fish cannot be brought to market in good condition for an economical cost, they cannot form the basis of a successful business. Logistically suitable, viably priced airfreight continues to be one of the major problems faced by the longline business managers interviewed for this project. Successful companies used one of two kinds of airfreight arrangements.

1. The first kind is where large international tourist industries mean there are frequent passenger flights on planes with suitable freight capacity (and there are local markets in the hospitality industry for B and C-grade tunas). In this study, that was Fiji and Cook Islands; however, even in countries with large tourist industries, businesses focused on exports of chilled tuna were facing difficulties. With recent CPUE declines in Fiji's fishery, the business has been marginal. One of the major carriers in Cook Islands recently changed to using the new generation of passenger jets that maximise passenger space at the cost of freight space, meaning Cook Islands logistics are less favourable than they were.

2. In countries without large international tourist industries, a few companies arranged workable airfreight by using dedicated freight planes to get fish to a hub, where it was transferred to large passenger jets going to chilled-fish market destinations.

### Ultra-low temperature frozen tuna can be sea-freighted to lucrative markets

The difficulties and expense involved with airfreight means it is good if fishing companies can use sea freight. Because tuna oxidises when frozen under normal conditions, frozen tuna cannot be sold in the most lucrative fresh-fish markets, which is why most Pacific island countries have relied on airfreight to export chilled tuna. Tuna frozen to ultra-low temperatures (ULT, -60° Celsius), however, does not oxidise, but maintains its red hue, so it can still be sold as sashimi and tuna steaks. ULT is usually considered too high-technology to be done as part of a domestic industry, but a small second hand ULT machine was being used by one company in Suva, demonstrating that ULT technology may feasibly be part of domestic operations.

### Suitable markets for B and C-grade tuna strongly influences longline fisheries' viability

The highest price can be achieved on the sashimi market, but only a small proportion of each catch is A-grade bigeye or yellowfin. The rest of the catch must also be sold at reasonable prices, for which there are a range of markets. Expanding sashimi markets outside Japan and tuna steak/fillet markets accept fish of lower grades and smaller sizes than the Japanese sashimi market. In Fiji and Cook Islands, the tourist industry provides a relatively high-priced domestic market. PNG operators also sell a small amount of fresh tuna locally, or to Australia. Southern fisheries that include a high proportion of albacore in the longline catch can sell that to canneries, although the price is low.

### Tuna-fishing businesses need large cash reserves

Fluctuations in the availability of the resource due to oceanographic effects and the volatility of tuna markets mean that inevitably tuna companies have bad years when they make losses. Some fisheries, such as Cook Islands' longline fisheries and Fiji's skipjack fishery, are highly seasonal. Companies need to be sufficiently profitable and/or diversified to generate cash reserves or loan equity to survive the bad years/off seasons. The revenues from fishing or, in the short-term, from other sources, need to be adequate and sufficiently well managed to allow for the maintenance and replacement of fleet and equipment.

## Can pole-and-line fisheries be revived through premium markets?

The pole-and-line method is higher cost than the purse-seine method, so for it to be viable pole-and-line-caught skipjack need to be sold at a higher price than purse-seine-caught fish. It seems possible that with some (private sector) effort in marketing and trade connections for the wealthy markets of Japan, Europe and the United States, premium markets for pole-and-line products might support a revival in Pacific island country-based pole-and-line fishing (Rodwell, pers. comm.). A marketing campaign could differentiate pole-and-line product in the minds of quality and ecology-conscious consumers, particularly if purse-seine fisheries are adequately controlled. Marine Stewardship Council (MSC) accreditation could be sought as part of marketing the pole-and-line method as environmentally friendly. The Japanese distant water pole-and-line fleet survives, albeit in a highly subsidised form, so it seems worth investigating opportunities in the Japanese market for pole-and-line-caught skipjack. The *tataki* market could be explored further, as could fresh (ULT frozen) skipjack markets in Japan.<sup>15</sup> Pole-and-line product from the Pacific has never been differentiated from purse-seine product in the Japanese *katsuobushi*<sup>16</sup> market (Nakamura, pers. comm.), but it may be possible to do so and improve prices. There could also be the potential for premium prices for pole-and-line-caught skipjack in the gourmet smoked smallgoods being made in Fiji, Cook Islands and Kiribati (Rodwell, pers. comm.; Stone, pers. comm.). Lower-quality fish could also be smoked for local markets. In many Pacific island countries, fresh skipjack is not a preferred eating fish but smoked and/or dried it could be more popular. A study of these possibilities could be provided by regional and/or donor organisations and supported by governments, but decisions to explore the possibilities should be made by the private sector on commercial considerations.

## Supply side measures to increase profitability of fisheries

Pacific island countries have considered the idea that falling prices could be due to an oversupply of fish, and that if the FFA group of countries could restrict catches in their area it could push the prices for fish up. An economic study of this option found that the necessary conditions—such as total demand for tuna being insensitive to price changes, and the support of all member governments to impose catch restrictions—were met only partially in the case of the FFA fishery, but that small price increases in the short term should be possible (Owen 2001). The World Tuna Purse-seine Organisation (WTPO) has had some success pushing prices up by restricting the fishing activities of its members, and therefore supply. Models that consider economic as well as ecological sustainability could inform supply side measures, however, the difficulties of developing such measures in a global, highly competitive market should not be underestimated.

## Developing domestic processing industries

All of the Pacific island countries covered here had aspirations to develop domestic processing industries, because ‘value-adding’ processing was seen as a good way to capture more of the wealth from international tuna industries, and also for spreading the

wealth among the population through employment, procurement and spin-off businesses. Papua New Guinea's aspirations in this regard are the most ambitious: it hopes to replace Thailand as the world centre for tuna processing.

Chilled and frozen fresh tuna can be processed to a certain extent before export, but the most labour-intensive tuna processing is associated with canning, in particular the loining process. Because of the high-cost production environment in Pacific island countries compared with competitor countries in Southeast Asia, canneries/loining plants in Solomon Islands, Papua New Guinea and Fiji have all relied on preferential trade access to European markets and hefty tax remissions or other kinds of subsidies to be economically viable. Marshall Islands had a loining plant connected to the Starkist cannery in Pago Pago for a few years, but it eventually failed for lack of appropriate management. Kiribati is interested in establishing a loining plant but is likely to face substantial challenges, including those associated with fresh water supply and diseconomies of scale with freight.

Another kind of processing that has potential for domestic development is small-scale gourmet plants. Because small-scale processing plants are cheaper and easier to build and operate than large-scale canneries, they constitute a form of development that could feasibly be owned and run by Pacific islanders. This kind of processing proportionately adds a great deal of value. In the words of one interviewee, 'You can take a fish worth \$2 a kilo and turn it into a fish worth \$15 a kilo.' Stonefish in Fiji established a small plant with HACCP systems and sold smoked fish, tuna bacon and tuna jerky, mostly as exports to the United States. Based on that, a similar plant was built in Cook Islands, with its produce sold domestically. A small plant focusing on tuna jerky for export to Asia via Fiji was built in Kiribati. A plant that could be used for smoking and related kinds of processing was built under an aid project in Kavieng, Papua New Guinea, but so far has been used only for fresh-fish filleting and packing.

### **Tying distant water fisheries access to domestic industry development**

In recent years, Papua New Guinea has been the main proponent of tying fisheries access to investment in shore-based developments, and has had some success. Where access is preferential, however, or fees are waived, there is not always an adequate assessment of whether the value of the investment to the Pacific island country is greater than the fees forgone. Allowing exclusive access to particular waters for domestic fleets is another strategy employed with some success.

The 2002 FFA Workshop on Property Rights in Nadi, Fiji, discussed an alternative approach to access fees. Broadly speaking, this was based on taking strong national participatory rights to access, as strengthened by the WCPFC allocation process, and allocating them to domestic companies as a means of increasing indigenous involvement and domestic industry development. Under such an approach, DWFNs could still fish in Pacific island EEZs, but only under charter or through joint ventures with a domestic participatory right-holder. The right-holders are then required to make investments and create jobs rather than simply pocket the earnings from the sale or lease of the licence (Clark 2002).<sup>17</sup> The country profiles in this study note that this strategy has not domesticated

benefits from fisheries as much as hoped, and one regional commentator saw benefits from these arrangements going to more individuals than governments or national economies (Gillett, pers. comm.).

### Domesticating trading and marketing

Almost no interviewees cited trading and marketing as their aspirations for capturing more wealth from tuna; they talked primarily about fishing and processing. Since the 1980s, however, there has been much more money in tuna trading than in fishing (Reid 2005; Schurman 1998). 'Foreign investment in the tuna fishing sector of new and upcoming fishing nations has in the past been mainly from trading houses that stand to benefit from marketing and not necessarily from fishing operations' (McCoy and Gillett 2005). Luen Thai Fishing Venture, which operates in Micronesia, is not primarily a fishing company. It contracts a fleet to which it sells supplies and from which it markets the catch. It is believed Ting Hong operated this way too (McCoy and Gillett 2005). Taiyo Gyogyo, the Japanese partner in Solomon Taiyo, was also motivated by a trading aim: it wanted a high-quality reliable supply of canned fish for its UK buyers (Hughes and Thaanum 1995). Lack of international trading networks seems to have been an important factor in Soltai's financial downturn since 2003 (Barclay 2005). The sophisticated accounting systems and active international trade networks used by veteran Fijian longline companies Solander and Fiji Fish have undoubtedly played a role in their success.

Fisheries managers used to believe that as markets matured, fishers would start to take over the role of middlemen, marketing their products more directly (Dunn, pers. comm.), but this has not happened and the middlemen have taken profit away from the fishing end of the business (McCoy and Gillett 2005). Increasing competition in the fishery seems to have resulted in a large enough supply that in times of high landings, traders have been able to push the prices down (ADB 2003).

Some kinds of fish marketing and trading do not require much capital outlay—an office with reliable telecommunications is enough—but this business does require contacts, business acumen and knowledge of markets. The difficulty for Pacific island countries lies in acquiring the skills and experience needed for marketing and trading. A first step might be supplying gear and food for vessels. At the other end of the spectrum is marketing high-price seafood products in the wealthy markets of Europe, Japan and the United States, and supplying in sufficient bulk with sufficient quality and reliability. Nothing in most Pacific islanders' background prepares them for a career in international trading and marketing. On the other hand, Pacific island economies are no more suited to industrial fishing or processing than they are to international trading, and Pacific islanders see it as reasonable to become involved in those sectors. It will be a challenge to successfully facilitate the development of seafood trading and marketing businesses, but it should be possible, especially with plenty of consultation with industry and other relevant stakeholders, and some capacity building. Governments can assist by coordinating marketing and trading initiatives through agencies such as the Pacific Islands Trade and Investment Commission (PITIC 2002), which Cook Islands has used

to establish markets for its marine resource exports, and the World Bank's Foreign Investment Advisory Service (FIAS 2005).

If Pacific island countries can develop seafood marketing and trading expertise, this could revolutionise the ways in which countries with substantial tuna resources, but with a geographic environment not conducive to domestic industrial development, think about generating wealth from tuna. For example, instead of selling the rights to fish to DWFNs, they (through the domestic private sector) could organise lucrative markets for their fish and then contract DWFNs to catch the fish for them at an agreed price, and make profits on selling the fish to the buyers.

### Service and supply industries for DWFNs

Of the countries covered in this study, only Cook Islands did not have some kind of service and supply industry for trans-shipping DWFNs. Governments in Solomon Islands, Kiribati, Fiji and Marshall Islands have actively encouraged the development of such industries. Marshall Islands in particular chose this option over domestic fishing as the way to generate local business development with a great deal of success, generating revenue in trans-shipping fees and spin-off businesses in minor repairs and procurement.

Constraints on domestic service and supply industry development are similar to those for business as a whole in Pacific island countries. Fiji's longline trans-shipping businesses are constrained by a lack of wharf infrastructure, and somewhat by the range of skilled tradespeople. Kiribati cannot attract longliners because of a lack of air connections to export sashimi-grade fish. Kiribati does attract purse-seiners, but has limited and expensive supplies of fresh food and water for them.

The most intractable problem for service and supply industries is fluctuations in the availability of the resource. The numbers of purse-seine and pole-and-line vessels operating in Marshall Islands' EEZ dropped dramatically in 2002–03 when oceanographic effects moved the fish further west. Solomon Islands' purse-seine fishery declined just as Marshall Islands improved, in mid 2003, and stayed bad until mid 2005. Kiribati suffered a downturn in 2003 and 2004, with almost no vessels trans-shipping in Tarawa, then picked up again in 2005. Like fishing companies, service industries have to be able either to follow the fish or to earn enough in the good years to see them through the bad years.

Another point to note about service and supply industries is that while they bring economic activity within the domestic economy of Pacific island countries, a large proportion of this activity is simply funnelling imports and so is not of much developmental value. McCoy and Gillett (2005) found that more than half of the total expenditure of Chinese longliners operating in the Pacific was spent on fuel, and about 30 per cent on bait. None of the countries covered here had a fuel refinery or commercial bait fishery so this expenditure did not add value domestically. The negative impacts of prostitution and substance abuse around busy international ports where there are insufficient health and welfare services to mitigate these impacts should also be considered.

## Developing human capital

Human capital is often considered an industrial policy issue for encouraging development in particular sectors. We have drawn it out as a strategy for capturing wealth for tuna on its own because we believe it is vital for Pacific island countries, and because we are envisaging the development of human capital not only in terms of producing employees for the private sector, but in terms of building public-sector capacity.

### Public-sector capacity

Fisheries revenue has not historically been reinvested in fisheries governance, but has been directed to central government revenue, although this is changing in some countries with moves towards self-funding statutory authorities. Governments have not prioritised training or education in areas relating to fisheries management by specific allocation of scholarships (Tarte 2004). Fisheries management and development are hampered by government departments with insufficient numbers of staff and without the appropriate levels of education. One of the reasons why Pacific island governments have not taken on ideas for improvements for fisheries development and management from the many reports on the topic is that they have not had the time or the background to be able to make the recommended changes. Areas where Pacific islander interviewees said public-sector capacity needed improvement included fisheries science, fisheries management, economics and fisheries law.

The PNG examples mentioned earlier have shown how improved fisheries bureaucracy capacity improved the amount of revenue generated by access fees, and improved policies contributed to the generation of a great deal of domestic industry development. On the other hand, there are many examples where lack of capacity means losses for Pacific island countries in terms of fisheries management and development. Pacific islander interviewees noted that some Pacific island delegates to international meetings showed through their questions that they had not grasped the information in the briefs for the meetings. Delegates who do not understand the issues or the discussion properly are unable to contribute, and they are also unable to act as effective conduits for their governments. Pacific island politicians are sometimes not briefed sufficiently about regional and domestic fisheries issues to be able to make consistent workable policies.

One of the other ways in which government capacity has a direct influence on the ability of Pacific island countries to capture wealth from tuna is the capacity of their distant water access negotiation teams. Many of the strategies identified by interviewees and in reports for ways to secure greater revenues from DWFNs require building the capacity of Pacific island government negotiators. Instituting systems whereby negotiators have an incentive to perform well in these negotiations would also help (Gillett, pers. comm.).

In addition to skill and experience levels, there is the issue of adequate resourcing of fisheries departments. For some states, such as Kiribati, the need for adequate numbers of qualified fisheries staff cannot be overemphasised. Sound advice from fisheries

departments is essential to making the right decisions and creating the right policies to guide sustainable fisheries management and development. Poor governance is driven by under-resourced and pressured government officials, a lack of direction and planning, low accountability and low productivity.

### Fisheries managers' understanding of tuna industries

Interviewees for this project and reports on similar topics raised a range of areas where Pacific island countries' ability to capture wealth from tuna was being constrained by a lack of understanding of tuna businesses. Several interviewees noted a naivety on the part of Pacific island officials who felt they were capable of making advantageous deals with the representatives of large international fishing companies. The same circumstances apply to fisheries access negotiators, who need a great deal of understanding about the economics of tuna industries, which few Pacific island government staff currently have. McCoy and Gillett (2005) interviewed Chinese longline business managers who found local officials they dealt with 'very inexperienced' and sometimes lacking competence; this was then seen as a business opportunity.

One NGO worker from Solomon Islands felt that this naivety was due partly to the dual economy existing in most Pacific island countries, meaning many Pacific islanders lack experience in capitalism, and he also thought it was due to the prevalence of cargo cult-style beliefs that there was a simple road to wealth somewhere out there.

While financial and economic literacy are important skills for fisheries managers, it is probably unrealistic to expect that each Pacific island country will develop the expertise necessary for all leadership and decision making. As well as institutional strengthening, including further education in these areas for fisheries managers, utilising skills from other government departments and from organisations such as the FFA can add to Pacific island countries' capacities in economics and business management. It is essential that the skills and experience shortage within the public sector with respect to human capacity is addressed.

Much of the technical assistance provided to fisheries departments in the region is of a 'fly-in, fly-out' nature—from consultants and staff of regional fisheries organisations. While regional fisheries agency staff are able to make multiple visits and thereby build corporate history, there is a lack of systematic mentoring and leadership capacity building in fisheries. Such mentoring could be provided by well-qualified technical advisers (especially fisheries economists and managers) appointed for two to three-year posts with fisheries departments.<sup>19</sup> These should not be line positions because of the risk that the mentor instead of the local official ends up 'owning' institutional development; the mentor's role should be to facilitate improvements by local officials, not make improvements themselves.

## Recommendation 10

Build capacity in Pacific island fisheries departments in the following fields: fisheries management (including working knowledge of stock assessments); economics; business management; and public policy. Where capacity gaps exist, consider recruiting suitably qualified and motivated staff from other government departments and externally.

### Private-sector capacity

A great deal has already been written on strategies to improve Pacific island countries' pool of qualified and experienced fishing crews, technical managers for processing facilities and tradespeople for service industries,<sup>20</sup> so such strategies are not canvassed here.

One point worth noting here, however, is the synergies and cost savings that can result from greater regional coordination of training. The 2005 Forum Leaders' Communiqué noted the importance of expanding regional technical and vocational education training and having technical qualifications 'portable' (Pacific Islands Forum Secretariat 2005). Papua New Guinea's National Fisheries College has successfully run some short courses on fisheries small business development in other Pacific island countries. Kiribati's Fisheries Training Centre has a long record of training crew and placing them in work on DWFN vessels, and looks soon to expand into officer training. Some other Pacific island countries might want to extend this opportunity for their citizens through cooperation with Kiribati.

### Business skills and experience

The main issue in private sector human resources addressed here relates to one of the principles raised at the outset of this discussion on capturing more wealth from tuna: tuna development equals business development. One of the greatest constraints on greater Pacific islander involvement in management and ownership of tuna businesses is a lack of skills and experience in business. One of the tendencies in Pacific island country strategies for tuna business development noted in this study, as well as Gillett's 2003 study on domestic industry development, is the expectation that small-scale fishers can upscale to medium and larger scale fishing enterprises, because they are skilled at fishing. Gillett noted that there have been 'very few cases' of small-scale operators successfully upgrading to become medium or large-scale operators. He explained this by pointing out that fishing was different to managing fishing and medium and larger-scale fisheries businesses, and small-scale fishers were unlikely to have management skills.

Many Pacific island small-scale fishers live in a social context in which they have had little or no exposure to business principles, where business as an economic activity might not be highly valued, and where other social obligations might be prioritised more highly than the covering of one's operating costs and generating a profit—meaning, for example, strong pressures to 'dip into the till' to pay for family obligations. Business failure rates are still high in cultures where people are exposed to business principles

from childhood, and where business is highly valued as a social and economic activity, so it is understandable that there is limited business acumen to support commercial tuna development projects in Pacific island countries.

We therefore agree with Gillett's (2003) suggestion that businesspeople who have had success in other sectors are more appropriate targets for commercial tuna development than small-scale fishers. There are two problems, however, with attracting lateral movement of established businesspeople as a strategy for achieving Pacific island countries' aspirations regarding domestication. One is the small pool of Pacific islanders with any business skills and experience, since in most Pacific island countries other ethnic groups have tended to dominate the business world. The other problem is the lack of profitability in tuna fisheries, which means they are unattractive as businesses, especially for businesspeople with no technical expertise in fishing. The many fishery development failures in the past contribute to wariness about investment in fishing. Processing or trading projects could have greater success in attracting lateral movements of established businesspeople.

All recent projects for tuna development covered by this study included feasible-looking business plans as a criterion for participation, and all of the tuna management plans included business training as a strategy to improve success rates, especially for small-scale tuna businesses. In light of the assertions above, however, business plans and short training courses could only be a first step in inculcating the major cultural shift that could be necessary for large numbers of Pacific islanders to become successful businesspeople. The important lesson from Robert Stone's experience, cited earlier, seems to be that he started off his fisheries business independently at a financially manageable level (one small boat fishing for snapper), and gained experience operating as a commercial fisherman for some years before taking out a large loan. Perhaps tuna business development strategies should be aimed at encouraging Pacific islanders to gain training and experience in managing low-risk businesses for some years before facilitating their access to large loans in the high-risk tuna-fishing sector.

One strategy for achieving this could be to design projects for Pacific islanders to gain extended exposure to the management of tuna businesses—through internships, for example—and encourage Pacific islanders to undertake tertiary studies in business and enterprise to lay the groundwork for management and ownership of tuna businesses. Rights-based management could also be a strategy for encouraging Pacific islander fisheries entrepreneurship. Finally, projects that facilitate business learning rather than distribute largesse are more likely to be successful in achieving indigenous participation in tuna businesses. The entry requirements for tuna business projects should be left to normal business processes.

### **Who is best for the job?**

The desire for domestication of tuna industries could be seen as part of a broad historical process emerging from decolonisation, whereby Pacific islanders were to take over from expatriates in all areas of government and business. It is related to the term 'localisation', which has usually referred to the replacement of expatriate employees with locals, and which has also been a long-term concern for Pacific islanders in regional tuna industries.

The small populations and economies of Pacific island countries, however, have meant that there has been a limited pool of trained and experienced managers, for the public and private sectors. For this reason, the most senior positions in tuna businesses have been held mostly by people who are not ethnic Pacific islanders. This is a fact of life even for much larger, wealthier countries—sometimes the best people for particular jobs, particularly very specialised jobs, come from overseas. Some public-sector reforms have also involved expatriate consultants. As agents of change, non-national consultants can be very effective in the short term, not least because they have no vested interests in the status quo compared with permanent employees. Non-nationals are not as susceptible to pressure from relatives, or other political/cultural issues that can negatively affect governance. But there are often problems with maintaining changes engendered by non-national contractors because nationals do not gain a sense of ‘ownership’ over the reforms. Furthermore, the great pay disparities between non-national consultants and their national colleagues can generate resentment against the reforms.

This situation is a conundrum, whereby non-national input at senior levels is sometimes the most pragmatic option, but it is politically unacceptable, especially if non-nationals are seen to dominate senior positions and localisation does not appear to increase over time. It would be best to achieve some kind of middle ground between the problem of expert expatriates sidelining their local colleagues and therefore failing to engender long-term skills improvement, and the problem of completely local but insufficiently experienced management. There is no easy solution to this dilemma in the Pacific, where there is a chronic shortage of qualified and trained local managers, and where prevailing levels of remuneration do not offer a good incentive for training and retaining high-calibre local staff. Some contributions towards addressing the issue are suggested below.

- Non-national leadership input in fisheries management and businesses could be more developmental and less detrimental by assessing the success and achievement of their national colleagues, not how much the non-national achieves.
- For the medium to long-term, Pacific island countries and aid donors can continue to build the pool of trained and experienced private and public sector managers through human capital development.
- Encourage suitably skilled and motivated Pacific island nationals from public and private sectors to enter the fishing industry to inject new blood, rather than retraining existing staff or starting from scratch.

### **Cooperating regionally to capture wealth**

The cyclical migratory nature of tuna resources means that businesses frequently need to have the flexibility to follow the fish. DWFNs have long had vessels capable of achieving this, shifting between oceans to seek profitable catch rates and species. Businesses that operate in only one Pacific island country have to suffer inevitable bad years, and since economic pressures on domestic operators have increased in recent years, businesses can rapidly become unviable. Organising locally based industries into national units also has

impacts on domestic industry development. For example, employment opportunities are disrupted if locally based companies have to scale back in years of heavy losses due to poor catches and/or economic circumstances. For Pacific island governments, access fees plummet in the years that DWFNs do not fish in particular EEZs, but if fisheries access were pooled across a suitable group of EEZs (such as the PNA group), access fees to individual countries could be more even across the years. The existing FSM Arrangement, the new PNA Vessel Days Scheme (VDS) and arrangements to 'trade' fishing entitlements between members will go a considerable way in this regard, through developing fishing rights that are not tied to a geographic area but can be used throughout the region. This means for years when the fishing is not good in one country's EEZ, they can still raise revenue through selling rights to fish elsewhere in the region, thus smoothing out revenue fluctuations.

Even with these mechanisms in place, national borders make it difficult for businesses to operate regionally. For example, Fiji Fish has vessels that operate in Solomon Islands and Vanuatu as well as Fiji. Licensing the fishing vessels to operate in more than one EEZ was quite easy, but Fiji Fish found it extremely difficult to gain the necessary permissions from the Solomon Islands and PNG governments to use carrier vessels to take fuel out to its fleet and bring the catch back to Suva. It is apparent that there would be considerable benefit from developing arrangements for reciprocal access between Pacific island countries.

Increased labour mobility within the region, including fishing crews and skilled tradespeople, could also be beneficial for capturing more wealth from tuna. Lack of labour mobility is one of the factors inhibiting general regional economic development (Pacific Islands Forum Secretariat 2005; Chand 2005b; Peebles 2005). Labour mobility could also alleviate some of the human capital constraints mentioned earlier. Easier flows of labour and conceiving of the resource regionally or subregionally could enable Pacific island countries to gain benefits from the industrial hub principle mentioned earlier. For instance, Pacific island countries could conceive of a tuna-processing hub in Madang as something they could participate in and benefit from. If Papua New Guinea were to make it possible for other Pacific island countries to gain employment and investment benefits from a hub in Madang, this could improve the economic viability of processing in the region, and therefore make capturing wealth from tuna more possible.

National borders build in economic constraints for businesses exploiting this migratory resource. Attempts to protect perceived national interests by throwing up barriers to regional operation through difficult immigration procedures, difficult business-licensing procedures and protection of domestic businesses are preventing Pacific islanders from capturing more wealth from tuna. The current conventional view in which each country wants its own processing plant in its national economy and sees developments in other Pacific island countries as competition perpetuates the diseconomies of scale that make Pacific island countries' production environments high cost in comparison with Asian countries. Below are some ideas for potential regional economic opportunities.

## Regional approaches to marketing and trading

Europe would be an excellent market for fresh (chilled and frozen) tuna from the Pacific because it is large, consumers pay high prices for fish and there is great demand because Europe has severely restricted supplies of fish. EU buyers, however, require large, regular supplies. Pacific island country fishing companies as they currently exist, fragmented across national borders, cannot achieve the scale and reliability of supply needed for the EU market. Any one EEZ might not be able to produce the same amount all the time because of seasonal and yearly fluctuations, but a marketing business sourcing fish from fishing companies across the region could guarantee large reliable supplies (Gloerfelt-Tarp, pers. comm.). Such an initiative should be private-sector driven, but to be attractive and feasible Pacific island governments would need to assure potential investors that they would facilitate the necessary approvals and licences to enable it to happen.

## Mobile processing, service industries and crews

Although floating factories are used in other parts of the world, in the Pacific they tend to be imagined as representing the worst kind of foreign investment that makes no commitment to local development. Floating fish-processing factories could, however, be managed such that they benefit Pacific island economies. Such a factory could employ Pacific islanders.

Small ultra-low temperature freezing machines fit in shipping containers, so small mobile plants for processing fresh chilled and frozen tuna could work the waters with longline fisheries in Cook Islands, the Line Islands in Kiribati and Fiji. Floating factories could also help with the uncertainty involved in large capital infrastructure in places such as Kiribati and Marshall Islands, where fixed land-based infrastructure may be rendered inoperable by rising sea levels in the future.

## The roles of the FFA and the SPC in facilitating development

The SPC has long offered technical developmental advice for small-scale and near-shore fisheries in the region. Until recently, the FFA has concentrated mostly on providing fisheries management advice, with minimal development advice. From now on, however, the FFA's activities will include far more industrial developmental advice (FFA 2005). The agency is to provide better information on the economic benefits to Pacific island countries from tuna fisheries, especially DWFNs, including access fees and how many people are employed by tuna businesses (van Santen 2005). Part of the FFA's increased role in development will occur under the European Union-funded EDF9 project, 'Development of Tuna Fisheries in Pacific ACP Countries' (DevFish). The DevFish project is designed to work through stakeholder consultation in each country, and aid donors, to dovetail with non-fisheries areas such as general governance, investment and environmental issues. It is to be hoped that this will facilitate an integrated process of developmental change, which should be more effective than previous 'one-point interventions' have been.

To be able to facilitate industry effectively, the FFA will need to adapt the services it offers, to include constructive criticism of Pacific island country policies and direct contact with the private sector and to improve its ability to disseminate information. For example,

the agency's studies on airfreight would have been useful for industry, but industry did not have easy access to them. Another example is that the agency's *Tuna Products Catalogue* has not been widely available for investors interested in processing. There is little value in donors funding reports that gather dust on fisheries departments' shelves, when the agreed agent of development, the private sector, is asking for more information on which to base investment decisions. The FFA and the SPC will need to be more honest than they have been in the past about the economic potential of development options. This is a difficult ask when political and other interests are clearly wedded to a particular development option, however, it is essential that regional organisations 'tell it as it is', even when that is 'bad news'.

Based on the analysis and comments from interviewees, we suggest the following ideas for action, a number of which form part of the FFA's operational plan

- more effectively utilise the Overseas Fisheries Cooperation Foundation expert on Japanese markets hosted by the FFA
- coordinate commercial consultation about freight availability and costs
- coordinate studies to explore market possibilities for Pacific island country tuna products, especially value-added products
- assist Pacific island countries to develop capacity in seafood marketing and trading
- coordinate activities between businesses in the region
- coordinate and assist with regional economic initiatives, including trading, mobile industries and regional training and recruitment
- host industry liaison officers (perhaps one each for purse-seine, longlining and processing)
- expand and update the economic database on key longline and purse-seine fleets (DWFN and domestic) so as to build a time series of prices and operational costs
- continue with bioeconomic modelling to underpin the successful development and adoption of management measures at the WCPFC
- coordinate with FIAS to improve Pacific island countries' foreign investment environments.

### **Small-scale and indigenous fisheries development policies**

Our research indicates that Pacific island governments are keen to see that benefits from tuna industries are felt at the village level. Most rural fisheries development projects based on reef fish have failed to be economically self-sustaining and Pacific island governments have not had the resources to sustain them. Recent versions of small-scale fisheries development projects based on the assumption that economic viability is important, such as the EU Rural Coastal Fisheries Development Program in Papua New Guinea and the Outer Islands Fisheries Project under Central Pacific Producers in Kiribati, have had greater success thus far in facilitating coastal fishers to supply domestic urban markets. Tuna makes up only a small part of these catches, as they are often difficult to catch from small vessels close to shore, and sometimes are not the preferred species for domestic consumption.

## Models of small-scale, indigenously owned tuna fisheries

The Samoan *alia* longline fishery has been hailed as a successful model of an indigenously owned small-scale tuna-fishery development. Many Pacific island governments sent teams to Samoa to investigate, although none then established an *alia* fishery at home (Gillett 2003). As Samoa was not included in this study, a detailed evaluation of the model is not presented here, but it is worth noting that despite some successes, the *alia* model also had many problems. Dozens of fishers were lost at sea in the small vessels in the first couple of years, the fishery did not have HACCP systems in place so there was a danger of a health scare in export markets, and effort exceeded the maximum economic sustainable yield of the fishery, leading to a CPUE collapse (Watt, pers. comm.; Chapman 2004b). The *alias* then mostly left the fishery, leaving it dominated by larger-scale longliners that could more easily fish offshore and which were mostly owned and managed by non-nationals. This is considered to be one of the first material demonstrations showing that while a regional stock (albacore) is in good condition, it is possible for ill-conceived domestic approaches to have a severe localised impact arising from over-expanding the locally based fleets. Cook Islands and Fiji have experienced similar results, albeit from the impact of larger, locally based longline vessels, as well as from stock damage being done further north in the equatorial zone.

In some parts of the Philippines, small-scale, locally owned and built wooden vessels called 'pump boats' using handlines have had success in commercial tuna fisheries. Filipino resident expatriates in Papua New Guinea have been involved in a move to have this model adopted in Papua New Guinea, as a way for indigenous small-scale fishers to enter commercial tuna fisheries. Pump-boat trials were conducted in the late 1990s and early 2000s, without much success, although in 2005 some government and industry interviewees still had hope for this model. The pump-boat/handline model is being included in the next revision of the PNG National Tuna Management Plan (Government of Papua New Guinea 2004).

## Recreational fishing

Recreational fishing based on international tourism is often raised as a development option, since there is a huge economic return per fish caught by recreational fishers, if international tourists utilise locally owned and run businesses. Recreational fishing can be suitable for village-level ecotourism. Since this development option relies on international tourism, however, it is constrained by the same factors that limit tourism potential in Papua New Guinea, Solomon Islands, Kiribati and Marshall Islands. Even in Fiji and Cook Islands, which have large tourism industries, recreational fishing has not been a significant business. None of the six countries covered in this study had a recreational fishery attracting international tourists fishing for pelagic species such as tuna. Marshall Islands and most of the other countries covered have active local recreational fisheries targeting tuna and like species, but these have no significant economic development effects.<sup>21</sup>

## Notes

- <sup>1</sup> Where large-scale domestic development (loining or canning plants, major port/infrastructure facilities, etc.) is not feasible, there are other domestic development options that should be pursued. For some Pacific island countries, however, these options are unlikely to generate greater benefits to the economy than revenues from various forms of licensing DWFN operations.
- <sup>2</sup> According to Article 5(b) of the Western and Central Pacific Fisheries Convention, Bmsy as a target can be modified 'by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global'.
- <sup>3</sup> The degree to which these busts are a result of localised depletions depressing CPUE, or of environment-driven changes (oceanographic factors, for instance) is a matter of some conjecture.
- <sup>4</sup> See also the section 'Tuna management and development plans'.
- <sup>5</sup> Some of these fishers come from the island of Roti in Indonesia, whose people have for centuries been fishing in areas now considered to be part of Australia's EEZ. Since the 1970s the Australian government has tried to prevent them entering their customary fishing grounds (Balint 2005).
- <sup>6</sup> For an overview of near-shore fisheries development in Pacific island countries, see Chapman 2004b.
- <sup>7</sup> Thus far little work has been done on the economics of small-scale fisheries, although the Asian Development Bank-supported Coastal Fisheries Management and Development Project and the EU Rural Coastal Fisheries Development Program in Papua New Guinea collected socioeconomic data in 2004 and 2005.
- <sup>8</sup> Provincial fisheries officers in Solomon Islands, however, feel that increased populations in coastal areas, pollution, overfishing and unsustainable fishing practices (such as dynamite fishing) are also having a negative impact on the health of coastal fisheries resources (Government of Solomon Islands 2005c).
- <sup>9</sup> For details of gender issues in tuna industries in Solomon Islands, Fiji, Kiribati and Marshall Islands, see Pacific Islands Forum Secretariat 2004b.
- <sup>10</sup> Using fisheries access as an inducement for onshore development can also be seen as a way of generating benefits from DWFNs. See section 'Tying distant water fisheries access to domestic industry development'.
- <sup>11</sup> Although Pacific island countries have kept information about the precise amounts of aid connected to fisheries access secret, the extent to which aid from sources such as Japan and the European Union is tied directly to fisheries access might not be as great as is often assumed. For example, Japan and the European Union have large aid programs in Tonga, which gives them no particular fisheries advantage.
- <sup>12</sup> Lewis (2004a) provides an excellent summary of the current status of access agreements, including possible strategies for improving the outcomes of access fee negotiations.
- <sup>13</sup> While the Japanese partner company was involved, this company was called Solomon Taiyo Ltd. When the company was reconstituted after the withdrawal of the Japanese partner in 2000, it was called Soltai Fishing and Processing Ltd.
- <sup>14</sup> See also the many reports available on the SPC and FFA web sites.
- <sup>15</sup> *Tataki* is a skipjack loin that has been seared on the outside but is still raw in the middle. It is served in a similar way to sashimi.
- <sup>16</sup> *Katsuobushi* is a popular stock flavouring in Japan, and is also used as a condiment. Cooked skipjack loins are smoke dried at a high temperature for several days then treated with a special mould. This is then crushed to a powder or shaved finely. Solomon Islands' Soltai has the largest skipjack-smoking factory outside Japan.
- <sup>17</sup> See also the discussion and recommendation under 'Rights-based management'.
- <sup>18</sup> The idea of commodity chains in relation to tuna is discussed by Schurman 1998.
- <sup>19</sup> This suggestion is not advocating a return to colonial fisheries officers. These days, many regional fisheries technical advisers are Pacific islanders.
- <sup>20</sup> Chapman 2002, 2003, 2004a; Gillett 2003; McCoy and Gillett 2005.
- <sup>21</sup> Lindsay Chapman covered recreational fisheries in his extensive regional study of near-shore fisheries (Chapman 2004b).