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Cook Islands

Population: 14,000
Land area: 237 km²
Sea area: 1,830,000 km²

After frequent contact by Spanish, British and French explorers from 1595, Cook Islands was named by Russian cartographers in the early 1800s in honour of the British Captain James Cook. Cook Islands was formally annexed by New Zealand in 1900 and gained independence in 1965. The country is self-governing in association with New Zealand and Cook Islanders have rights to New Zealand citizenship. About 50–70,000 Cook Islanders live in New Zealand and about 10,000 in Australia.

Potential of Cook Islands tuna fisheries

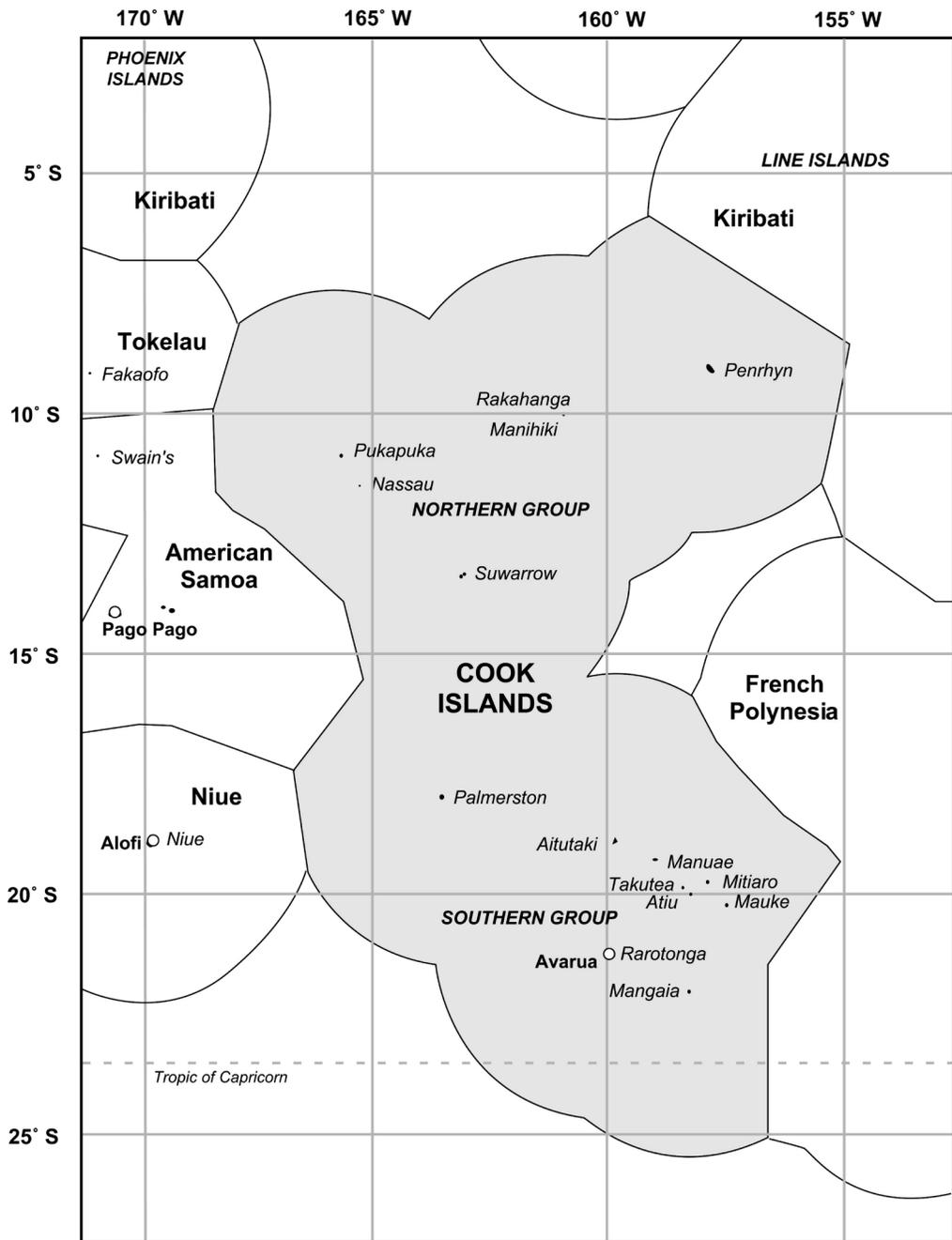
The Secretariat of the Pacific Community (SPC) estimated a total allowable catch (TAC) for the Cook Islands Exclusive Economic Zone (EEZ) of 44,000mt for the surface fishery (purse-seine and pole-and-line) and 6,000mt for the longline fishery (Chapman 2001). A surface fishery has not been developed¹ but there is a small longline fishery; the maximum annual catch (3,004mt in 2004) has remained below the TAC. This started out mostly as a distant water access fishery, but since 2000 distant water access has been banned as part of a domestic tuna industry development policy.

The southern fishery is seasonal (particularly yellowfin), apparently affected by water currents, sea surface temperatures and algal levels in the waters (Mitchell 2001). In the southern fishery, the best months are August and November, with low catch months from January to March (MMR 2004). It is commercially viable to fish only from May to November (York, pers. comm.). The northern fishery runs from March or April to November, with peak months in July, August and November (Garnier, pers. comm.).

History of development

Cook Islands' commercial tuna fisheries started in the 1990s as two distinct longline fisheries. A small fishery of two to three vessels started in 1994 in the southern group of islands based at Rarotonga, targeting chilled sashimi-grade fish airfreighted to Japanese

Map 3.1 Cook Islands



Source: Youngmi Choi, Secretariat of the Pacific Community, Noumea, New Caledonia.

and US markets (via Auckland). Some was also sold to New Zealand and to local restaurants and hotels. These companies targeted bigeye and yellowfin, but also caught albacore, swordfish, marlin, mahi mahi, wahoo and similar species. These companies were joint ventures with foreign-owned vessels based locally. The vessels ranged from 16 to 32m in length, 30–180 gross registered tonnage (GRT). In 1996, the first fully locally owned and operated longline vessel was registered.

Another longline fishery started in Cook Islands in 1998 in the northern part of the EEZ, targeting albacore to be frozen on the fishing vessels, which then took the fish back to base in Pago Pago, American Samoa. This fleet was made up of three to four vessels with large enough frozen storage capacity to stay out fishing for two to three months at a time. These companies were entirely foreign owned and operated. The northern albacore is less seasonal than the southern fishery targeting yellowfin and bigeye (Mitchell 2001). In the north, the best fishing months are May and September–October, with low months in March and July–August (MMR 2004).

The catch per unit of effort (CPUE) has been greater in the northern fishery than in the south. The average CPUE in 1998 for the northern albacore fishery was 55kg per 100 hooks, which was favourable compared with the regional average, but this dropped to less than 30kg per 100 hooks in 1999, possibly due to a La Niña event (Mitchell 2001). From 1995 to 2000, 1,230mt of fish (mostly albacore) from the Cook Islands EEZ was landed at Pago Pago (MMR c.2003). The northern fishery has always been larger than the southern fishery by volume, in 2004 accounting for 77.1 per cent of the catch (MMR 2004).

Albacore has always made up the largest part of the total catch. Even in the southern fishery, which does not target it, albacore made up the largest single species in the catch (Mitchell 2001; MMR c.2003, 2004). For the three years from 2002 to 2004, albacore made up 43 per cent of the southern catch (Bertram, pers. comm.). Other species in the southern catch composition for 2003 included bigeye (11 per cent), yellowfin (8 per cent), swordfish (25 per cent),² blue marlin (13 per cent), mahi mahi (4 per cent), striped marlin (3 per cent) and others (8 per cent) (MMR 2005a).

The largest market destination for Cook Islands tuna in the 1990s was the United States, which bought albacore for canning, some sashimi tuna and swordfish for the fresh-fish market (Table 3.1). The next largest market was the local one, which absorbed 15 per cent of the catch, comprised mostly of lower grade tunas and other species that were not worth exporting (Mitchell 2001).

By 2000, it became clear that the Western and Central Pacific Fisheries Commission (WCPFC) would probably involve some form of allocation of fishing rights to member countries. It was considered to be in Cook Islands' interests to develop an active tuna fishery and to be recording the fish caught in its waters and under its flag to strengthen its case to receive a reasonable portion of the regional allocation (Mitchell 2001). In addition, the Cook Islands government wanted to foster the growth of the local commercial fishing sector (Epati, pers. comm.). So in 2001, a technical advisor from the SPC came to Cook Islands to write a strategy for developing tuna fisheries (Chapman 2001).

Table 3.1 Cook Islands: market destinations by percentage and product, 2005^a

Destination	Frozen	Chilled
United States (California, Hawai'i)	0	75 (for sashimi and tuna steaks)
United States (Pago Pago)	90 (for canning)	0
Japan	0	24 (for sashimi)
Taiwan	10 (for processing)	0
New Zealand	0	1
Domestic market	0	15 (for direct retail, for fish shops, hotels and restaurants, for processing at Blue Pacific)

^a January–June, 2005

Source: Ministry of Marine Resources (MMR), 2005b. *The commercial tuna longline industry*, Information Paper for Cabinet, Cook Islands Ministry of Marine Resources, Avarua, Cook Islands.

The strategy identified several key areas that needed work to enable Cook Islands to make more from its tuna resources. These included (Chapman 2001)

- infrastructure, especially harbour and port developments
- options for post-harvest activities to increase the proportion of domestic value-added tuna products
- continuing fish aggregating device (FAD) program for small-scale fisheries
- long-term data collection system with regular analysis and distribution of reports for the benefit of the industry
- review of government taxes and duties to encourage domestic development, including looking at the possibility of tax holidays
- information dissemination and liaison to help encourage investment
- training for small-scale operators in fishing techniques and business management
- exploration of options for various boat designs and various modes of ownership (such as cooperatives) to develop the most viable domestic small and medium-scale fisheries
- institutional strengthening for the Ministry of Marine Resources
- work with lending institutions to ensure that adequate capital is available under viable terms and conditions for local ownership of businesses.

According to the Secretary for the Ministry of Marine Resources at the time, Navy Epati, the government preferred to foster a local industry rather than have distant water access fleets take the fish, so foreign licences were effectively banned. Foreign-owned vessels could be used in Cook Islands only if they were chartered as a 'demise' or 'bare boat'³ charter to a locally based company at least partly owned by a Cook islander, and registered in Cook Islands. The local company was legally liable for obligations regarding catch reporting and so on. There was initially an effort to tie licences to employment of local crew, but since there is a labour shortage in Cook Islands and Cook Islanders, as New Zealand citizens, may go to work in New Zealand for better wages if they want to do manual work, crew had to be sourced overseas, especially for the boats that worked

out of port for more than a day at a time. Koreans, Taiwanese, Tongans, Indonesians, Filipinos, Samoans and Fijians have all worked in the Cook Islands fleet (Bertram, pers. comm.; Graham, pers. comm.).

The northern fishery has not yet substantially changed through this domestication policy. Local people are agents for the foreign-owned vessels, do some administrative work for their companies in Rarotonga and receive a portion of the profits, but the vessels continue to come and go from their preferred port of Pago Pago in American Samoa, source all their supplies there and are operated and crewed exclusively by foreigners. The government considered making the northern fishery vessels land their catch in Rarotonga, but they ultimately decided that adding the extra length to the vessels' steaming time (3.5 days) would be an unnecessary setback to profitability (Epati, pers. comm.). In addition, Pago Pago is a fully established port with all the necessary goods and services available, much cheaper than in Rarotonga (Garnier, pers. comm.).

The southern fishery based on Rarotonga, however, underwent significant changes as a result of the domestication policy. It took about a year to get the basic policies and procedures in place. The old legislation covered access for distant water vessels, not the establishment of a domestic industry, so had to be revised in 2001 (Epati, pers. comm.). Before 2001, there had never been any more than two locally owned vessels working from Cook Islands ports. In late 2001 and early 2002, some of the new locally based companies began operations. In 2002, catches from the southern fishery were worth NZ\$2.6 million, and the northern fishery was worth NZ\$3.1 million (MMR c.2003). Tuna topped the export sector, surpassing pearls, and there were considerable expectations for the fishery. Investors rushed to enter the tuna fishery and, by 2003, fish made up 56.6 per cent of exports (pearls made up 19.5 per cent), and the fishing industry was cited as one of the four sectors contributing to real GDP growth from 2002 to 2003 (Tables 3.2, 3.3 and 3.4). This signalled substantial diversification in the economy since 2002, when pearls were the only significant export and tourism was the main income earner (Government of Cook Islands 2005). Because the policies and procedures were not thoroughly established, things were somewhat chaotic. Boats were lined up in the harbour and foreign fishing companies flocked to Avarua to find local business partners. The Department of Immigration was not ready to process all the working visa applications, and other government agencies such as health and the police were overwhelmed by the sudden social changes that took place around the harbour. In 2002, a vessel was caught fishing illegally for the first time, so procedures for prosecuting illegal fishers had to be worked out. The pace of the growth in the domestic industry 'took everyone by surprise' (Epati, pers. comm.).

The domestic industry went from three vessels in 2001 to 19 in 2002 (catch: 1,143mt) and 44 in 2003 (catch: 2,335mt) (MMR 2004). It had been believed widely that there were not enough fish in Cook Islands' EEZ for a viable tuna fishery, but now it looked like it did have sufficiently valuable tuna resources on which to build an industry (Epati, pers. comm.).

CPUE, however, started to drop off. The Ministry of Marine Resources asked the minister to cap the licences in 2003 because there were too many boats. Companies

Table 3.2 Cook Islands: indicators of domestic development, 2001

Locally based vessels active	Cannery/loining facilities	Sashimi packing facilities	Cook Islands nationals jobs on vessels	Cook Islands nationals jobs on shore	Frozen tuna exports (metric tonnes)	Fresh tuna exports (metric tonnes)	Cooked loin exports (metric tonnes)
10 longline	0	3	50	15	0	5	0

Source: Gillett, R., 2003. *Domestic tuna industry development in the Pacific islands. The current situation and considerations for future development assistance*, FFA Report 03/01, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Table 3.3 Cook Islands: value of fresh chilled tuna exports, 1994–2004

Year	Value (NZ\$)	Year	Value (NZ\$)
1994	382,000	2000	-
1995	1,067,000	2001	-
1996	250,000	2002	2,334,000
1997	-	2003	8,258,000
1998	-	2004	135,000
1999	2,000		

Source: Government of Cook Islands, 2005. *Cook Islands Annual Statistical Bulletin 2004*, Avarua, Cook Islands.

started collapsing. Foreign companies could see that the returns were low and pulled out, especially in the southern sashimi and fresh-tuna oriented fishery (Bertram, pers. comm.). While licence numbers dropped to 38 in 2004 and catch increased to a record 3,000mt (a 30 per cent increase on 2003), CPUE was lower (MMR 2004). By 2005, the CPUE was still declining, while at the same time fuel prices had escalated significantly, causing economic difficulties (Bertram, pers. comm.). Thirty-two vessels were licensed to fish in the Cook Islands EEZ in 2005, but in September only about seven of these were active in the southern fishery, and 11 in the north. Some of the foreign-operated vessels licensed for the northern albacore fishery were fishing elsewhere or were offloading in Pago Pago. Some vessels from the southern sashimi-oriented fishery were awaiting repair, or were tied up for economic reasons (Maru, pers. comm.).

The optimism that blossomed in 2002 had subsided by 2005. The 25 vessels from New Zealand that came in 2003 had all left. Five vessels owned by the Taiwanese company Gilontas that came from Panama in 2004 left in August 2005. One of the three processing facilities that had been operating in 2003 was shut down, and another was scaling back due to insufficient turnover. Morale in the sector was low (Epati, pers. comm.). Marine ministry officials became increasingly pessimistic about prospects for further development in the southern fishery, citing the inability of companies to catch sufficient quantities of fish relative to the operating costs from Cook Islands—particularly fuel and freight prices (MMR 2005a).

With the first burst of activity in the fishery, Cook Islanders rushed to invest with no long-term strategy and lost money. By the mid 2000s, the Cook Islands tuna industry was still in the testing phase so failures were to be expected (Short, pers. comm.). Despite the

Table 3.4 Cook Islands: indicators of domestic development, 2004

	Locally based vessels facilities	Sashimi packing/ fresh-tuna loining	CI: non-CI jobs on vessels	CI: non-CI jobs on shore	Whole frozen tuna exports (for canneries)	Whole chilled tuna exports (sashimi)	Deli-style processed tuna products
Land Holdings Ltd	2 LL south	-	1:8	1:1	-	-	-
Blue Pacific	-	1	-	8-12:1	-	-	240kg per week
Cook Islands Fish Exporters	-	1	-	20-40:5	-	500mt	-
FBI and Te Maroro	2 LL south	1 (fish shop)	1:5 (southern)	5:0	-	-	-
Pamatatau	4 LL north	-	-	-	-	-	-
Cook Islands Marine Export	1 LL south	-	-	-	-	-	-
Fish CI Ltd	2 LL north	-	-	-	-	-	-
Aitutaki Fishing	4 LL north	-	-	-	-	-	-
Matira South	3 LL north	-	0:30	-	-	-	-
CI Tuna Fisheries Ltd	3 LL south	-	-	-	-	-	-
Taio Shipping Services	1 LL south	1 (container)	-	-	-	-	-
Cook Islands Fish Ltd	1 LL south	-	-	-	-	-	-
Cook Islands Seafood	1 LL north	-	-	-	-	-	-
Cook Islands Fishing	1 LL north	-	-	-	-	-	-
Total	30	4	CI: >2 CI: up to 58	non-CI:>35 non-CI: 7	2,500mt	12mt per year	12mt per year

Notes: LL: longline. CI: Cook islander. NCI: non-Cook islander. The Ministry of Marine Resources was not collecting a breakdown of the types of exports, just the total catch, which was about 3,000mt. Approximately 85 per cent of this was exported, with the remaining 15 per cent consumed locally.

Sources: Interviews with: Epati, Navy, 2005. Co-owner Fish Bites Incorporated fishing company. Former Secretary, Ministry of Marine Resources. Interview, 20 September. Avarua, Cook Islands. Maru, Pam, 2005. Ministry of Marine Resources employee working in the areas of monitoring, control, surveillance and licensing. Interview, 19-23 September. Avarua, Cook Islands. York, Trevor, 2005. Master Fisherman and co-owner Land Holdings Ltd tuna-fishing business. Interview, 20 September. Avarua, Cook Islands. Garnier, pers. comm.

somewhat 'boom–bust' nature of the early southern Cook Islands tuna fishery, however, some industry interviewees still had faith in its potential. Navy Epati, former fisheries bureaucrat turned owner of fishing company Fish Bites Incorporated, characterised the events of the past four years as a learning phase. People invested in the fishery because of early successes without knowing anything about fishing, and as a result they lost money. But they also gained considerable knowledge, and Epati believed that by building on their experiences the fishery should be able to grow again with a more stable trajectory. 'We learned more about fishing in the last four years than we did in the previous 40 years' (Epati, pers. comm.). Trevor York from Land Holdings, a company that continues to do well and is looking to expand, also feels that the Cook Islands tuna fishery is potentially profitable for operators who 'know what they are doing'.

Longline fishery

One of the more successful of the local companies in the southern fishery was Land Holdings Limited. The company was 70 per cent owned by Cook Island resident Bill Dougherty, an established local businessman in the construction industry. The remaining 30 per cent was owned by a New Zealand citizen with a working visa, skipper Trevor York. York had been fishing most of his career around New Zealand before coming to the Cook Islands to work for another company in 1998. He had been in charge of a vessel before, so had some idea of how to balance the costs of running a vessel and make it profitable. The company started fishing in 2001 with one vessel. As of September 2005, Land Holdings operated two longline vessels.

One of the problems for local fishers is that replacement parts for vessels can take weeks to arrive. Land Holdings imports also had sufficient cash reserves to import its own bait in bulk, and keeps a stock of spare parts on hand so it does not have to wait (York, pers. comm.). It thus avoided the problem facing many of the other operators in September 2005 when the company that had been supplying bait ceased importing it.

As of September 2005, Land Holdings employed seven deckhands, two skippers and an office administrator. The company had two vessels but was in the process of buying a third, for which it would need a third skipper, and was considering expanding the fleet even further (York, pers. comm.). When the company began, it tried to recruit Cook Islands deckhands, but few local people were interested in the work. When Land Holdings bought its second boat it went to Fiji to find crew. As of September 2005, it employed six Fijians and one Samoan as deckhands, one Cook islander and one New Zealander as captains, with one Cook islander working in the office (York, pers. comm.). Land Holdings keeps its vessels out as much as it can during the season, bringing them in only to offload for at most one day before going back out to fish again.

According to Trevor York, it is possible to be successful in the Cook Islands fishery as long as operators are willing to work hard and focus on quality product. Land Holdings' vessels gut and ice up the catch on board then bring it back to the factory, where it is wrapped, boxed and airfreighted out (York, pers. comm.). Land Holdings does well in its markets because its quality is good. It receives maximum value for each fish.

One of the more difficult parts of the business is working out the balance between costs and prices to see if it is worthwhile exporting, which involves fairly complicated financial calculations. Land Holdings' agents in the United States and Japan can give ballpark figures on what the prices are like, but since the fish is sold at auction there is no guaranteeing the exact price. Then there is the cost of freight to consider. Also, for local sales the price includes the head, whereas for exports to the US the head is taken off first, meaning the price per fish may end up being lower in the USA even if the price offered per kilogram is actually higher in the USA.

Fish Bites Incorporated was formed in March 2005 from two other fishing companies: Te Maroro (established in 2003) and Fresh off the Boat (established in 2004). Fish Bites operated two vessels in the southern fishery, with two Fijians, three Samoans and one Cook islander working on the vessels, and five Cook Islanders working on shore. Its vessels could catch 800kg a day (they do not stay out overnight). Its southern fishery was in a difficult financial situation at the time of interview.

Fish Bites was also the local partner for three longliners operating in the northern albacore fishery out of Pago Pago. It received a percentage of the value of the catch and was the legal owner of the company with all the attendant responsibilities, but in practice did not operate the vessels. The vessels were Korean owned, with Tongan crews.

The cost of fuel and freight and the supply of bait fish were all causing problems for Fish Bite's southern fishery at the time of interview in September 2005. Airfreight to Japan cost NZ\$4.50 per kilogram. Fish Bites was effectively selling fish for export at \$4/kg, which left no margin, so it started selling locally direct to the public for \$16/kg (Epati, pers. comm.). Locals and tourists bought from Fish Bites because the fish was well presented and slightly cheaper than at other fish retail outlets in town (Graham, pers. comm.). Fish Bites was selling as much as it could catch through the shop as well as to eight local restaurants. The company also had plans for expansion into reef fin-fish aquaculture in partnership with the Australian company McRoberts (Epati, pers. comm.).

Fish Bites was one of the small operators that did not have the capital to import its own bait (one container load cost NZ\$40–50,000) (Epati, pers. comm.). Epati was hoping that if an industry association could be established it could administer a plan put forward to the marine ministry for funds to buy the first container load of bait as a 'revolving fund'. The association would then administer bait sales to the smaller operators to cover the costs of buying future loads. The ministry approved this plan in principle and was thinking of contributing to the revolving fund if a viable industry association could be established (Bertram, pers. comm.).

The large New Zealand company Sealord came to the Cooks in 2003. It was in partnership with Cook Islands Fishery Exporters, which was going to do the packing and freighting. Sealord is one of the biggest fishing companies in Australia and New Zealand, involved mostly in trawling. It also has international marketing connections and produces processed seafood, such as fish fingers. After just one year (the worst year in the southern fishery to date), Sealord decided that fishing in Cook Islands would not give a good return on its investment and it withdrew.

During 2004, five vessels owned by Taiwanese company Gilontas came to work in the southern fishery. These vessels were unable to make a profit and left in August 2005. The vessels and the crews proved to be unsuitable for the southern fishery (Armstrong, pers. comm.). The vessels were too large and had brine freezers, which meant they used too much fuel. The crews, mostly ethnic Chinese, with some Indonesians and Filipinos, were unwilling or unable to change their fishing practices from a style focusing on volume suited to cannery product, to a style that would maximise the quality and value of each fish. For example, apparently they treated bluefin tuna, which exported fresh can fetch tens of thousand dollars per fish, the same as cannery albacore, freezing it and taking it back to port days after it had been caught. This meant the company missed out on potential profits.

Matira South Fishing Limited started in early 2004 with four vessels, two owned outright by the company and two chartered Tahitian vessels. The aim was to fish in the south, but because the low season dragged on two months longer than usual in 2005 due to high water temperatures, the company needed to make some money fast, so it sent the vessels to the north to earn some cash in the albacore fishery. These vessels are larger than the size that seems to be suitable for the fishery targeting the sashimi market in the south. One of the vessels was equipped for fishing for the sashimi market with ice, so the company tried that for a while, but because of the size of the vessel this was not cost effective.

Matira South felt it would be possible to improve profits in the northern fishery by reorienting from the low-value cannery market for albacore by loining and freezing fish on board for fresh-fish markets. In the high season, the catch in the west of the fishing grounds can be up to 60–70 per cent albacore, but further east the catch composition is more mixed. Because albacore gets the best price from the canneries (US\$2,300 per short tonne for albacore, compared with \$1,100 for yellowfin, and down to \$600 for skipjack and wahoo), the vessels try to bring back mostly albacore, which means discarding some of the other species. This in turn means vessels have to stay out longer before filling the hold. By loining and freezing all species on board, Matira South hoped to get more value for the catch, to utilise all species and thus to improve productivity. Another measure necessary to improve productivity is to ensure the vessels can fish year round, which means fishing the high seas during the off season in Cook Islands.

The prices for frozen loins offered by an agent in Tahiti were US\$3.80–4.50/kg (depending on the species), and a buyer in Australia had offered A\$10/kg. So the prices for frozen loins are much better than cannery prices, and because frozen loins can be transported by sea the freight prices are much cheaper than for sashimi exports by air. Freight prices in reefer containers for the loins were quoted at NZ\$0.20/kg.

The two vessels from Tahiti freeze the loins to -25°C , which means the fish remains at the same quality for 18 months. In order to be able to sell to the lucrative EU market, it will be necessary to establish Hazard Analysis Critical Control Point (HACCP) systems on board the vessels and establish a Competent Authority in Cook Islands. Matira South established market connections for loins in Australia in 2005. Some samples were sent to buyers there and the necessary preparations made with Australia's Quarantine Investigation Service. The company could have been selling loins to Australia already except that all four vessels were, at the time of interview, unseaworthy with mechanical problems.

Distant water access fleet

In the early years of the Cook Islands tuna fishery, most of the vessels in the southern fishery and all of those in the northern fishery were foreign, paying access fees. In 2000, when the government decided to develop the domestic fishery, it banned foreign vessels.

Bait fishery

There has never been a local bait fishery supplying tuna fisheries in Cook Islands. There is a possibility for milkfish aquaculture for bait fish in the northern group, where there are some ponds made by US forces during World War II, when they built airstrips (Bertram, pers. comm.). Navy Epati's partnership for aquaculture in the outer islands is considering farming milkfish in ponds to cut this cost for its longline ventures. Apparently milkfish aquaculture was tried in Cook Islands in the past but the breeder fish were too attractive as a food fish for locals so it did not last long (Epati, pers. comm.).

Fish aggregating devices (FADs)

In the 1990s, the Ministry of Marine Resources deployed several FADs (using the recurrent budget, US multilateral treaty Project Development Fund [PDF], United Nations Food and Agriculture Organisation [FAO] and NZAid money) for local small-scale fishers, who had learned to use them and become reliant on them (Chapman 2001). Fishers contributed a NZ\$50 annual fee to the FAD program. Chapman recommended long-term funding be made available, especially for maintenance, in the ministry's recurrent budget or fees from the US multilateral treaty (Chapman 2001:10). In 2005, FADs continued to be important for small-scale fishers using handline, trolling and harpoon methods, and the ministry had instituted a program to maintain the FADs (Bertram, pers. comm.).

Small-scale coastal

Artisanal and small-scale commercial fisheries including trolling and midwater fishing techniques around FADs were targeted by a development strategy in 2001 (Chapman 2001). Small-scale coastal fishers around Rarotonga were able to sell tuna in local markets, although some of them withdrew from the fishery during the boom period when larger-scale operators were offloading non-export fish in the local market for NZ\$5 a kilogram, and the small-scale fishers had to charge \$10/kg to be viable (Hunter, pers. comm.). By 2005, however, the price of local tuna had gone up to \$15–20 a kilogram, so it was possible that small-scale coastal fishers would re-enter the market.

In 2001, there was talk of the government developing jetty facilities and freezing and ice-making facilities for the outer islands (Chapman 2001); however, the viability record of such government-sponsored rural developments in the Pacific is not good. By 2005, the Ministry of Marine Resources had not established a program for tuna fisheries development in the outer islands because of the same kinds of problems that inhibit rural commercial tuna fisheries around the region, including difficulties and expenses for transporting the fish by sea or air, difficulties in maintaining fish quality and difficulties in establishing and maintaining ice supplies (Bertram, pers. comm.; Chapman 2004b).

Game fishing

Cook Islands has had some sports and game fishing associated with the tourism industry. As of September 2005, there were eight sports-fishing vessels in Rarotonga and four in Aitutaki (Bertram, pers. comm.).

Port and trans-shipment base

Cook Islands has not offered trans-shipment or port services to foreign fishing vessels and is not planning to do so in the foreseeable future.

Onshore processing

Cook Islands has never had a cannery or cooked-loin processing facility and it seems unlikely one will be developed. There was, however, a small local sashimi-processing industry. Chapman's tuna industry development strategy cited expensive electricity as a possible inhibiting factor for onshore sashimi-processing factories and businesses such as ice supply. He also cited shortage of land as a possible deterrent, since one fishing company was trying to build a plant at the time but was unable to access suitable land (Chapman 2001). As soon as the fishery took off in 2002, however, investors rushed to establish plants. With hindsight, investors were too optimistic about the volume that would require processing so there were more plants in Rarotonga than were viable at current fishing levels.

In 2001, Chapman identified one small fish-processing facility that supplied small amounts of ice and bait and purchased small amounts of fish. That operator was interested in expanding but given the fish shortage fishers were paid more to sell direct to hotels and restaurants than to him as a middleman, so he could not access a larger supply (Chapman 2001).

In 2003, there were three industrial-scale fish-processing plants operating in Rarotonga, but by the end of the year one (Matia) had closed (Bertram, pers. comm.; Garnier, pers. comm.; Graham, pers. comm.). Two remained operating in 2005 but there was not really enough fish coming through to keep both of them in business. In addition to the industrial-scale plants, there were a couple of fish shops operating locally, buying local catch and filleting it ready for retail, or packing high quality fish for air freight export (Bertram, pers. comm.; Graham, pers. comm.).

Cook Islands Fish Exporters was formed in 2002 by Cook Islands businessman Brett Porter as a joint venture between his Avarua-based company, Meat Co., and a New Zealand-based fishing company Hawkes Bay Seafoods, in partnership with Sealord. Cook Islands Fish Exports built a high-quality plant and exported chilled yellowfin and bigeye by airfreight via Auckland as sashimi to Japan, with B-grade and other species such as broadbill and mahi mahi to the United States, depending on relative prices in each market. Frozen albacore was sent via sea freight to Pago Pago (Bertram, pers. comm.; Graham, pers. comm.; Armstrong, pers. comm.). The Cook Islands Fish Exports plant packed the export product for Land Holdings, and was also supplied by the five Gilontas vessels during 2004–05.

The Porter Group had recruited 25 longline vessels from New Zealand to come to fish in the southern fishery in 2003 to supply Cook Islands Fish Exports' plant. By November 2003, the first of these went broke and returned to New Zealand. By September 2005, only

two vessels owned by a consortium of Cook Islands businesspeople were still active in the Cook Islands (Garnier, pers. comm.), and one of those vessels was offered for sale in September 2005 (Bertram, pers. comm.).

At the peak of production, the Cook Islands Fish Exports plant employed about 40 people, mostly locals, with five non-nationals. As of September 2005, the plant had scaled down activities due to a lack of fish and was employing about 20–25 people. At the end of the season, the plant was going to close entirely until the fishing season started again (Armstrong, pers. comm.).

Blue Pacific Foods was a company that processed a small amount of chilled fish for airfreight export and also sold chilled and frozen fish retail for local customers, but its main business was a small facility value adding by making smallgoods from tuna and other species caught by the longliners. Its products were vacuum packed in clear plastic and included cold and hot smoked fish, tuna ham, frozen packages of fish soup and tuna sausages. Blue Pacific was also considering niche-market, high-value canned tuna and tuna sold in olive oil in glass jars (Blue Pacific Operations Manager, pers. comm.).

Blue Pacific utilised the species and grades of fish that could not be exported as sashimi. ‘Smoking turns fish that can be bought at NZ\$2 a kilo into fish that can sell for \$15 a kilo. All it takes is a bit of wood, salt and time’ (Blue Pacific Operations Manager, pers. comm.). The highest value product, cold-smoked marlin, retailed at NZ\$5 per 150g (\$333 a kilogram). Hot-smoked marlin and tuna ham were cheaper at less than \$20 a kilogram. The local market buys everything Blue Pacific can produce—240kg a week—so it has none left over to export.

One of the features of this venture which enabled it to survive was that one of the investors was the owner of a well known local bar and restaurant (Trader Jacks). The plant facilities were used to prepare food for the restaurant, so it was not reliant only on fish for its business (Bertram, pers. comm.; Graham, pers. comm.).

Determinants of success

Some of the main lessons that seem to have been learned about Cook Islands’ southern fishery in recent years are that it is not a high-volume fishery, fish that are taken are high quality and require good handling practices and the fishery is seasonal (Armstrong, pers. comm.; Broadhead, pers. comm.; Short, pers. comm.; York, pers. comm.).

Food quality and safety

Successful companies focused on maintaining quality through fish-handling practices from the moment the fish was caught, thus maximising the value of each fish. For example, when they caught large bluefin, they send them to market as soon as possible (back to the packing plant within 24 hours of being caught, and onto the auction floor in Japan within 60 hours) to maximise the value of the fish, achieving up to NZ\$60,000 for a single fish (Armstrong, pers. comm.).

Failures occurred with companies that went for volume without paying enough attention to maintaining the quality of the fish—the style of fishing used when targeting albacore for the cannery market.

Addressing food-quality issues in the domestic market was also a factor in the success of the southern fishery. Quality has improved in the local market a great deal since 2000. In 2001, Chapman identified that few operators of small vessels were using ice to preserve fish at sea (Chapman 2004b). There was lack of market awareness of quality and food-safety issues, so the Ministry of Marine Resources engaged SPC technical advisor Michael Blanc to do some training on fish handling. Fishers as well as some local buyers did the course, and soon most were using ice and cool boxes to store their fish promptly after being caught.

Until 2005, Cook Islands had no laws about food safety, so market pressures were the only thing making local producers careful about quality and hygiene. As of September 2005, however, a new food act was before Parliament, requiring seafood exporters (not producers for the local market) to comply with EU regulations on food safety and hygiene, using HACCP methods on fishing vessels and in processing facilities. Fishing vessels interested in exporting to the European Union under the Cotonou Agreement were working with the government to establish these systems (Broadhead, pers. comm.; Garnier, pers. comm.; Short, pers. comm.). In addition, the government was considering incorporating *Codex Alimentarius* standards for fish and fishery products into the legislation (Graham, pers. comm.). Achieving European Union-approved status was a long-term plan, since it required the development of testing facilities as well as institutional arrangements and scientific expertise (Broadhead, pers. comm.).

Local market

Partly as a result of quality improvements, a domestic market emerged that paid good prices for fish of high quality that could be used to feed international tourists. This high-end domestic market helps make the southern tuna fishery viable by providing good prices for fish that is non-export grade, or when freight and price conditions make it unviable to export fish. Smaller indigenously owned and run operations relied exclusively on the local market. Local people looked out for the small vessels coming back to harbour and rushed to buy straight from the boat (Bertram, pers. comm.). Rarotonga can consume more than 5mt of fish a week and most weeks only half of that is supplied (York, pers. comm.).

Tourism contributed to the health of Rarotonga's local fish market. In a country with a population of 14,000, 78,328 tourists visited in 2003, and this number has risen slightly each year (Government of Cook Islands 2005). Restaurants and hotels catering to tourists made up about half of the local market for fish (Armstrong, pers. comm.). In addition, the boost tourism has given to the local economy in the past 15 years has increased Cook Islanders' incomes such that local people also pay good prices for fish.

Synergies with tourism

The Cook Islands shows that tuna fishing can have important synergies with the tourism sector in the areas of the local market and airfreight. Air New Zealand's decision to use planes with more space for passengers and less for freight, however, has not been beneficial for the tuna industry, so it is not ideal to rely on tourism for freight. And some tourism operators apparently feel that tuna fisheries detract from tourism. Sport-fishing charter operators have

complained that commercial fisheries deplete the resource so that tourists can't catch any fish, despite the fact that longliners are prohibited from letting their lines drift within 12 nautical miles of the coast (6nm for vessels less than 14m in length), and the Ministry of Marine Resources enforces this rule (Bertram, pers. comm.; Graham, pers. comm.). Resort owners have been also known to complain that the fishing industry detracts from the image of a 'pristine' island environment, which attracts tourists (Armstrong, pers. comm.).

Costs of operation

Having small fuel-efficient vessels of 12–14 metres in length was one of the features of successful companies in the southern fishery (Armstrong, pers. comm.). The major cost components (as a proportion of total costs) for vessels operating in the southern fishery in 2002 were: airfreight (25–40 per cent); fuel and oil (10 per cent); and bait (8 per cent). Fishing companies paid wholesale bulk rates for fuel of about NZ\$1.25 per litre and fuel costs were considered to be a problem for the fishery (MMR c.2003). In 2003, the government responded to claims that the high cost of fuel was damaging the industry and removed the tax on fuel for fisheries. This dropped the cost to \$0.87 per litre. International fuel cost rises then brought the price back up to \$1.20 in 2005 (Bertram, pers. comm.). In contrast, the 2004 price for fuel in Pago Pago was just NZ\$0.50 per litre (US\$1.34 per gallon) (Garnier, pers. comm.). Other costs included wages, ice, food, replacing gear, marketing, loan repayments and insurance (MMR c.2003). Overall operating costs from Rarotonga were estimated to be twice as expensive as from Pago Pago.

Managing costs to accommodate the seasonality of the fishery was another determinant for success. Successful companies worked crews and vessels extremely hard during the fishing season and were structured such that they could afford to close operations during the off-season (Armstrong, pers. comm.). Companies that needed to operate year round to cover their costs pulled out.

Harbour and insurance concerns

Insurance was considered to be a problem by fishers. Only the hull of a boat was covered, not the expensive engine parts, and vessels could not be insured against risks such as cyclones (Epati, pers. comm.). The harbour was not a safe anchorage in all weather. After a damaging cyclone in 1987, insurers refused to cover waterfront investments against sea-surge damage during cyclones. Fishing vessel owners told Chapman they were reluctant to invest in larger vessels until they had safer anchorage (Chapman 2001). In 2005, the lack of protection offered by the harbour against cyclones was still a problem. During the five cyclones that hit Rarotonga in January 2005, some vessel owners took their vessels out to deeper water and rode out the storms (clearly a dangerous strategy) because their vessels would have been destroyed in the harbour (Bertram, pers. comm.). Other vessel owners hauled their vessels out of the water and took them to high ground, which apparently voided their insurance (Epati, pers. comm.).

Cook Islanders have been discussing building a stronger sea wall against cyclone damage for many years. Protection using COPED or Tetrapod technologies would cost

millions of dollars, however, and spoil the aesthetics of the coastline, which draws tourists (Bertram, pers. comm.). There is protection in the area around the airport, however, and since the harbour area is also away from the major tourist resorts, similar protection for the harbour might not significantly damage tourists' enjoyment of Rarotonga's lagoon scenery. Chapman also recommended a range of other improvements to the harbour, including dredging it to a minimum depth of 3m at low tide, building a good launching ramp for trailer vessels, and using dredged material to reclaim some land to use for services such as slipways, engineering and supplies (Chapman 2001). In 2003, when the numbers of fishing vessels increased greatly, and when international port security measures meant the container section had to be separated from the rest of the port, a new section of the wharf was built for small fishing vessels and yachts. In 2005, further extensions and improvements to this area were planned (Graham, pers. comm.).

Availability of credit

Interviewees mentioned credit as a problem for the fisheries sector in general. When the domestic industry first started, the commercial banks in Cook Islands were not interested in extending loans to fishing companies; they felt fishing was a less safe investment than tourism. After some pressure from politicians, the Development Bank finally agreed to start lending to fishing companies. The first Development Bank loan went bad within months and a second vessel considered too big for the southern fishery was bought by inexperienced operators and sat virtually unused at the wharf for a couple of years (Epati, pers. comm.). However, the financial sector gradually worked out how to service the new industry. Land Holdings, a local construction company with a thriving longline business, said it had no problem with credit from the commercial banks because it was financially healthy (York, pers. comm.).

Freight

For the northern fishery, freight was not an issue, since the vessels stored their own catch onboard frozen, delivering it to the cannery in Pago Pago when returning to base for supplies. Albacore and other frozen fish exported by sea from the southern fishery were stored in freezers in Rarotonga until there was enough to fill a container. Large container vessels could not fit in the Rarotonga harbour, but small container vessels visited every 7–10 days (Bertram, pers. comm.; Graham, pers. comm.).

Chilled fish for the sashimi market was airfreighted out of Rarotonga via Auckland. Industry people cited airfreight issues as a 'real headache'. Air New Zealand had increased its freight prices in line with recent fuel price increases. It also changed scheduling and plane types in 2005. Previously, there had been 10 or more outbound flights a week in Boeing 767s, which have plenty of freight capacity. There was a quick turnaround in Auckland to markets in the United States and Japan. In 2005, the airline started using Airbus A320s on many of the runs to Cook Islands, an aircraft that displaces freight in favour of increased passenger space. In addition, schedule changes meant a 16–18 hour wait in Auckland before the fish could get onto planes to market (Armstrong, pers. comm.).

Because chilled sashimi tuna depreciates about 10 per cent per day once it is taken from the boat, airfreight schedules as well as prices were thus two of the many factors to consider in the decision to export or not.

Value adding

One of the interesting things about the Cook Islands tuna industry is that there is a small-scale value-adding processing facility producing gourmet smallgoods from tuna. This model seems to be well suited to the Pacific islands, especially where there is a hospitality market to hand, being small-scale and involving much less capital investment than a cannery. According to the managers, the facility was not difficult to set up or run.

Another direction in value adding being explored in 2005 was longliners with onboard loining and freezing capacity. The whole of the catch can then be utilised, rather than what currently occurs, where the northern fishery wants only albacore of a certain size and discards most other fish, and the southern fishery targets sashimi fish but also catches a lot of albacore. High-quality albacore frozen quickly to a very cold temperature can be sold for good prices as tuna steaks in the United States and the European Union. The EU supermarket trade could be opened to Cook Islands exporters as a result of bilateral negotiations continuing in 2005 under the Cotonou Agreement (Broadhead, pers. comm.). Even with much higher freight costs, this would be more profitable than selling to canneries. Utilising the whole catch means ships can be more productive.

Miscellaneous

Finding crews was cited as a problem. Cook Islanders were willing to work only on the small vessels that did day trips, not on the slightly larger vessels that stayed out for several days at a time. Crews were thus sourced from Fiji, the Philippines or China. Managers and owners interviewed said that among local and foreign crew there were few with either the potential or the incentive to work their way up to become first mates, skippers and eventually boat-owners. Many vessels operated irregularly due to mechanical problems and difficulties in accessing spare parts (MMR 2004; Bertram, pers. comm.; Graham, pers. comm.). In September 2005, vessels were also slowed by a bait shortage in Rarotonga.

Governing tuna industries

The Ministry of Marine Resources is the government department responsible for most aspects of fisheries management. Its duties include: data collection; monitoring, control and surveillance; observer programs; infrastructure development; extension services and training programs; disseminating information; and liaising with industry and other stakeholders, including investment agencies and government departments (Chapman 2001).

Until September 2005, the ministry's main focus in tuna-fishery management was establishing new legislation. The *Marine Resources Act* went through Parliament in July 2005 and in September was ready to be gazetted pending a review of the licensing regulations. The ministry's next priority was to finish its tuna management plan. Work had started on the management plan with Forum Fisheries Agency (FFA) consultant Les Clark. The

ministry had not yet set a total allowable catch (TAC) for Cook Islands' tuna fisheries, but the Minister for Fisheries capped the number of licences for longline vessels at 60. As part of Cook Islands' commitment to the WCPFC, the ministry planned to have the tuna management plan finished and vested with regulatory powers by Cabinet by the end of 2006 (Graham, pers. comm.).

Governance problems, specifically corruption and other mismanagement by government officials, have been less of a problem in the Cook Islands than other Pacific island countries (Hunter, pers. comm.; Moeka'a, pers. comm.; Short, pers. comm.).⁴ Possibly, the greater incomes of Cook Islanders relative to incomes for other Pacific islanders, as well as the lower ratio of dependents to wage earners, means there is less of an incentive to succumb to bribery or corruption (Short, pers. comm.). The Ministry of Marine Resources produces annual reports to acquit its budget (Graham, pers. comm.), and was being audited as part of normal governance processes during the period of fieldwork in September 2005. There were no significant abnormalities discovered.

Improvements to tuna-fishery management suggested by the Chapman report included: improving surveillance and enforcement; moving access boundaries for larger longline vessels further away from shore; having reliable data provided to the ministry; the ministry keeping the disaggregated data confidential to protect the commercial interests of fishers; developing an observer program and an automatic location communicator system; and undertaking port sampling (Chapman 2001).

To address some of these issues, funding was requested from the New Zealand government for an institutional strengthening project. As of September 2005, that project was almost ready to recruit technical assistance, and the ministry had worked on these issues in the meantime by setting and enforcing rules regarding longline boundaries.

Marine ministry staff felt that fishing companies were at first reluctant to give them information about the location of their fishing, but came to trust the agency over time. The ministry is confident of the quality of information on the logsheets presented by boats in the southern fishery but less sure of the accuracy of northern fishery vessels, and the statistics from the small-scale (non-longline) FAD fishery were described as poor (Bertram, pers. comm.). The ministry developed an observer program but hit a problem with a labour shortage: no one wanted to take the job and go to sea. It was thinking of trying to source observers from Fiji or another country in the region.

By 2005, there were two automatic vessel locator systems in place, the FFA VMS and a national system. A port sampling service was introduced to the fishery based around Rarotonga, with the following coverage rates: 2002, 60 per cent; 2003, 70 per cent; 2004, 30 per cent (when there was a huge jump in the number of vessels in the fishery); 2005, 50 per cent. In 2003, ministry staff trained to teach longline fishing techniques and also undertook studies in international fisheries law and general management.

Biological data about the fishery are important for obvious reasons, but for industry development and socioeconomic management of the industry more economic data would be useful. For example, in 2005 there were no comprehensive data available on amounts or values of tuna exported and sold locally. The government statistician published the

value of chilled tuna exports, but frozen albacore exports (which make up the bulk of the fishery) were included in 'other' exports rather than being separated as an individual item, and there were no figures for local fish sales.

As part of its flag-state responsibilities, the Cook Islands government enforces minimum requirements regarding safety and equipment, policies regarding waste disposal, public liability insurance and insurance for medical treatment and repatriation of crews (Broadhead, pers. comm.).

Chapman recommended the establishment of a Cook Islands Tuna Fishery Development Committee, with representatives from all relevant sectors including the financial sector (2001). As of 2005, no such committee had been established. An industry association would also help in this regard.

Government consultation across agencies seems to work better in Cook Islands than in some other Pacific island countries. The marine ministry works with the National Environment Services Department and other related departments on plans to minimise the damage caused by pollution from vessels. The marine ministry and Environment Services also collaborated with their media and education programs aimed at schools, communities and the private sector.

The government saw its role as providing an 'enabling environment' for private-sector activity, rather than in owning or managing fisheries businesses (Chapman 2001), and the general impression of government philosophy from interviews in 2005 was that companies should succeed or fail according to their commercial viability, and not be bailed out by government.

During the boom phase, the government was firmly behind tuna fisheries as a major development opportunity, as evidenced by their willingness to forgo the revenue of foreign access fees to encourage the development of a locally based industry. With widespread disappointment in the industry in 2005, some felt there was a risk that government interest might wane (Epati, pers. comm.).

The Development Investment Board aims to provide a transparent system for business development applications based on the core criteria of benefits for the Cook Islands economy. In order to facilitate business applications, it works with other ministries. For example, it consults with the Ministry of Marine Resources about marine-related applications; immigration procedures for employees are facilitated by the Development Investment Board. If the board recommends a three-year working visa, the turnaround on the visa application can be as short as two weeks (Short, pers. comm.).

The Cook Islands government supported industries by facilitating marketing relations internationally. For the tuna industry, the Development Investment Board has utilised networks available through the Pacific Islands Forum Secretariat's Pacific Islands Trade and Information Commission offices (PITIC 2002). The board used these offices to set up trade shows and introductions to potential importers in Japan and China for Cook Islands tuna-industry representatives.

From the short study conducted in September 2005, it appears that the Cook Islands government has provided an enabling environment for private-sector development,

especially the domestic private sector. The Foreign Investment Board and other departments facilitate investment for a reasonable cost and application procedure with a reasonable turnaround period. The general state of the economy and economic policies do not seem to be impeding development from tuna resources, as they have in other Pacific island countries. Credit is available for investors with the commercial record and assets necessary to give banks confidence in lending. The main impediment to tuna industry development thus far has simply been the commercial viability of the fishery, which is something the private sector needs to work through itself.

Conclusion

Cook Islands has learnt much from its brief foray into tuna fisheries development, going through a boom–bust cycle in about 10 years. If the Cook Islands tuna industry recovers from the slump in 2005 and, through effective management and sound business decisions, develops into an economically sustainable industry, it could be a valuable part of Cook Islands' overall economy, relieving some of the heavy dependence on tourism. At the same time, if social and ecological issues attached to tuna fisheries are managed well, the tuna industry shares important synergies with tourism. Tuna fisheries provide high-quality fresh product, which is increasingly important in international gastro-tourism, while tourists' passenger flights (subject to aircraft type) provide freight routes to sustain the portion of the fishery aimed at chilled sashimi exports. Fishing and processing companies provide human resources development potential for Cook Islanders in technical and management roles, as well as in international trading and marketing.

Development aspirations and tuna

One of the early expressions of the Cook Islands government's aspirations for the tuna industry was quoted by Lindsay Chapman in his strategy for tuna fisheries development: 'To have a sustainable and profitable industry harvesting at or near the total allowable catch fully owned by Cook Islanders, employing the maximum number of Cook Islanders, with maximum retained value in the country' (Chapman 2001). The tuna development strategy itself included a set of aspirations for 2001

- create an enabling environment to encourage private-sector development in fishing, processing and support sectors
- establish sustainable, environmentally friendly and responsible domestic development and harvesting for local consumption and export-oriented income
- maximise benefits and economic returns to Cook Islanders as a whole as well as local communities
- create employment opportunities for Cook Islanders, especially in the outer islands
- institute accurate data collection, including by-catch and interactions with protected species
- have domestic tuna management and development consistent with international and regional obligations.

After the boom-and-bust phase between 2002 and 2004, however, aspirations changed somewhat. As far as economic development goes, tourism is still much more prominent than tuna in the national psyche (Broadhead, pers. comm.). Aspirations for development from tuna resources expressed by interviewees in 2005 ranged from seeing tuna as having very little or no role in the wider economic development of Cook Islands, to seeing it having an important role as one part of a diversified economy, but with a more limited vision about what type of industry was possible than was envisaged at the outset of the domestic industry in the early 2000s.

Domestic development

In 2005, retaining maximum value in the country for Cook Islanders remained an aspiration in Cook Islands, as elsewhere in the Pacific. The domestication policy and development of the southern fishery went some way to achieving this aspiration, as did the value-adding processing conducted on shore. It is hard to see how to capture more of the value from the northern fishery while it remains tied to the cheaper operating costs and the cannery market in Pago Pago without damaging the commercial viability of that fishery. The large and fairly high-value local market meant that virtually the whole value of the 15 per cent of the catch that was sold locally was retained in the country. Further work on retaining more of the value of the catch in Cook Islands should probably be deferred until the industry stabilises and it becomes clear what kinds of tuna industries can be sustained.

Full ownership of fishing ventures by Cook Islanders remains an important aspiration, but the losses suffered by those who invested in tuna fishing in the early 2000s means there is greater wariness about committing to investment in tuna-fishing companies. The policy of forcing local ownership through tying it to fishing licences had gone only so far in generating meaningful local ownership of fishing ventures. For some of the northern fishery vessels, local ownership was little more than a 'rubber stamp', the only domestic benefits being a stream of income for the local vessel owners and some limited catch history linked to the Cook Islands flag. Some local owners are active participants in the running of their fishing companies, but because the northern fishery is conducted a long distance from Rarotonga it is easy to remain inactive as a vessel owner. It is possible that through the domestication policy, over time the level of meaningful local ownership of fishing companies might grow.

Full investment through equity by Cook Islanders is in any case difficult because of the large capital reserves necessary for even a small vessel. To run a fleet of six 10–12m vessels requires an outlay of NZ\$2.5 million for the first year and few Cook Islanders have access to this kind of capital (Armstrong, pers. comm.). Foreign investors thus tended to give their local partners the equity necessary to get licences, but structured the company such that the local owners were unable to have real control over the company.

The tuna development strategy mentioned business management training for small-scale operators using specific fisheries business training modules to be developed by the Ministry of Marine Resources working with an institution specialising in business training. The strategy report also recommended that the ministry work with lending institutions

to make capital available for locals under workable conditions (Chapman 2001). These plans appear not to have progressed much since the downturn in the industry discouraged further investment.

Many Cook Islanders, especially in Rarotonga, have in recent years invested increasing time in cash work, so as to be able to afford imported goods. Many people hold two jobs (Armstrong, pers. comm.; Hunter, pers. comm.). In the past decade, many people have started small businesses. With the boost to the economy provided by tourism, many of these businesses have gone well, meaning Cook Islanders have developed confidence in their business skills and in business as a source of income. There is also a growing culture of entrepreneurialism (Armstrong, pers. comm.; Short, pers. comm.). As of 2005, however, few Cook Islanders were treating work in foreign-owned and managed tuna businesses as an opportunity to learn about the business in order to get into management and ownership themselves (Armstrong, pers. comm.; Cooper, pers. comm.).

Domestic development was aspired to within the boundaries of 'consistency with international and regional obligations'. Cook Islands has to date been a team player with regard to regional fisheries management obligations, such as the vessel monitoring system (VMS) and scientific data collection.

Another of the aspirations Cook Islanders had for tuna fisheries was to develop small-scale fisheries to help with rural and outer-island development. Unfortunately, tuna fisheries and processing are not feasible in the more remote parts of the Cooks, largely due to the costs and difficulties in storing and freighting a perishable product. Tuna fishing and processing businesses work best in industrial areas with economies of scale for freight and infrastructure. Bait-fish aquaculture, however, could be conducted in the outer islands. Tuna industries could also contribute to development in rural and outer-island areas through a small portion of access fees or fees from the US multilateral treaty being made available for a development fund that could be accessed for small-scale developments to improve standards of living.

Employment for Cook Islanders

The early aspirations for the employment of Cook Islanders fell by the wayside, particularly on fishing vessels. Cook Islands has a labour shortage: there simply is not the unemployment problem that exists in other Pacific island countries such as Papua New Guinea, Solomon Islands and Fiji. Work on fishing vessels is physically hard and the life can be very uncomfortable. Some of the vessels in the northern fishery stay out fishing for months at a time and the pay is not high for ordinary crew. Cook Islanders have taken up employment opportunities on some of the small vessels operating from Rarotonga that do not stay out at sea, and in processing facilities.

An ecologically sustainable fishery

The type of fishery Cook Islands seemed to be heading towards in 2005—with a focus on quality over quantity and small-scale value adding—was an ideal type for economic development from tuna resources while not significantly damaging fish stocks. Related

to aspirations for having the fishery conducted in an ecologically sustainable manner were stated objectives about accurate data collection.

Stocks of tuna, however, are only one of the ecological sustainability issues raised by tuna fishing and processing; pollution in coastal and harbour areas is another. Several Cook islander interviewees expressed hopes that pollution from fishing and processing activities would be carefully monitored and infringements punished (Short, pers. comm.; Tupa, pers. comm.). The director of the National Environment Service felt that regional cooperation, in the form of sharing information and equipment and jointly working out policies and guidelines for fishing and processing activities, should be employed to prevent and manage pollution problems related to tuna fishing (Tupa, pers. comm.).

Minimising negative social impacts

Another aspiration not mentioned specifically in the tuna development strategy but raised by several interviewees was the desire to minimise negative social impacts from the fishery. When the fishery first boomed in 2002, Avarua had to cope with an influx of several dozen fishers from Asian countries, New Zealand and other Pacific island countries (Garnier, pers. comm.; Hunter, pers. comm.). There were apparently a few brawls in bars and concerns were raised about whether Rarotongans welcomed these immigrant workers. 'It is difficult for Pacific islanders to think of letting another culture in' (Short, pers. comm.).

According to Cook islander fishing vessel owner Frances Garnier, if Cook Islands is to host a tuna-fishing industry in the long term there is a need for specific social and health infrastructure to cope with fishing crews and to minimise negative social impacts for Avarua as well as for the crews themselves. The kinds of health infrastructure crews need include reasonably priced and accessible services for injured or sick fishermen, as well as specific services for substance abuse and for awareness, prevention and treatment of sexually transmitted infections (STIs). Pago Pago also has a mental health clinic, which is useful because life on board can be mentally stressful (Garnier, pers. comm.). Ideally, these health services need to have interpreter services attached, because of the multicultural nature of fishing crews. Women and girls who become involved with the sex industry around ports also need specialist sexual health services, as well as supportive welfare services to cope with violence against them, substance abuse and other negative social effects.

A good trans-shipping port should also provide normal recreational outlets for crews. While crews are in port in Pacific island countries, they often have nothing to do and can become bored (Garnier, pers. comm.). Church and other community groups concerned about fishing crews' less salubrious activities could do something constructive by hosting alcohol-free recreational activities such as fishing trips or picnics. Marine governance bodies could provide information and training sessions for crew spending time ashore, to update them on developments in fisheries management relating to their work, show them informational videos and develop awareness about best environmental practices for their activities (Garnier, pers. comm.). English conversation classes could also be offered.

Recommendations

Notwithstanding the need to learn from past experiences, the main recommendation for general development issues would be for the Cook Islands to continue doing what it has been doing, especially in the following areas.

- Continue with food safety and hygiene regulation improvements under the *Food Act* and bilateral negotiations with the European Union for trade access to increase the commercial options for tuna exporters.
- Continue encouraging Cook Islanders to take up more technical and managerial roles in fishing businesses. Some strategies towards this end could be to
 - increase understanding of the economic and operational realities of running a fisheries business based on a highly variable resource, from a relatively high-cost location
 - continue supporting Cook Islanders to acquire education, training and experience in technical areas and business management
 - encourage Cook Islanders to view working in a foreign-managed and owned business as an opportunity to learn the business so as to be able become a manager or business owner themselves
 - continue encouraging expatriate Cook Islanders with professional and technical skills and business experience to return to work or invest in Cook Islands.
- Balance economic benefits against environmental and social costs from tuna industries through government continuing to work on environmental regulation, monitoring and enforcement, and, if the numbers of fishing crews coming and going from Avarua looks like expanding, there will be a need to further develop social and health infrastructure.
- Undertake a cost–benefit analysis for installing storm and surge protection around the port along similar lines to the protection around the coastline near the airport.

The Ministry of Marine Resources could use more staff to enable it to cover the numerous diverse tasks required for regional and domestic fisheries management.

If fisheries policy is to shape the industry, which the domestication policy does, it is important for government officials to be well informed about commercial issues affecting the industry, so as to be able to effectively encourage development in the desired direction rather than distorting the industry meaninglessly, or worse, impeding it. In other words, in order to make the domestication policy effective, it will be important for marine ministry staff to learn from the boom-and-bust experience of the early 2000s. At the time of writing, the main lesson learned seemed to be rational development linked to economic sustainability. In this context, the ministry was discouraging investment in tuna businesses. Two other lessons that could be useful for policies affecting the industry, however, are that

- the southern fishery seems to suit a focus on quality rather than quantity, conducted from small to medium-sized, fuel-efficient vessels doing short trips
- the fishing end of the business is high risk and potentially not very profitable, so domestication via vessel ownership and operation might not be the best strategy.

In order to capture more of the value from tuna resources in Cook Islands, other options should be considered, such as domestication policies targeting onshore processing, or even tuna trading and marketing.

In order to improve the level of business savvy among Cook Islanders investing in tuna industries, the Ministry of Marine Resources could work with agencies such as the Development Investment Board, the Cook Islands Business Enterprise Centre and/or the University of the South Pacific Centre in Avarua to develop strategies to encourage Cook Islanders to treat foreign investment as a learning opportunity. The ministry could also continue with the suggestion raised in the tuna development strategy (Chapman 2001) to develop fisheries-specific business training courses.

The ministry's services relating to tuna industries could be further improved in the areas of consultation and information dissemination. The ministry produces an annual summary of tuna fisheries, which comprises mostly information from scientific and licensing data collection processes. The summary could also include other information on the projects and achievements of the ministry in each year, and be made available to the public via the ministry's web site or in printed form.

The marine ministry and industry players could consult with non-PNA group governments and industry organisations with shared interests in longline fisheries about setting up a subregional group within the FFA. This group could parallel the PNA group (equatorial counties where most purse-seine fishing occurs). The group could facilitate cooperative action among the public and private sectors to target regional initiatives such as those suggested by Cook Islands interviewees.

Notes

- ¹ There has never been a pole-and-line or a purse-seine fishery in Cook Islands, although Cook Islands is signatory to the US multilateral treaty for access for the US purse-seine fleet.
- ² By 2004, swordfish was being targeted. In previous years this species had constituted a lower proportion of the catch.
- ³ The most basic kind of charter: simply renting a boat for a period, with no obligation about crewing or catch sales.
- ⁴ Cook Islands is not completely free of these problems: a couple of cabinet ministers, including the leader of the Cook Islands Party, Sir Geoffrey Henry, were dismissed over governance issues in 2005 (ABC 2005a).