



Transforming Tuna Fisheries in Pacific Island Countries

An Alternative Model of Development

July 2013

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Published in July 2013 by:
Greenpeace Australia Pacific
Level 2, 33 Mountain Street
Ultimo NSW 2007
Australia
T: +61 2 9281 6100



Printed on 100%
recycled paper.

Design and Layout:
Brandmad Frog

Cover Image: Locals catch
skipjack tuna by pole-and-line
in the Maldives.

  Greenpeace/Paul Hilton

This page: Philippine purse
seiner in the international waters
of the high seas pocket No1.

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Foreword and Acknowledgments



Sari Tolvanen, Greenpeace International Oceans Campaigner, July 2013

I am pleased to present this report which is the result of dedicated, collaborative work by an international team of academics and Greenpeace. This report was commissioned by Greenpeace to provide Pacific island countries with a clear set of steps that need to be taken to transform the region's tuna fisheries sector. Greenpeace's vision for this is based on models of fishing that tap into growing market concerns about socially responsible fishing; are more ecologically sustainable, more locally controlled and bring greater local benefits.

In just a few years, some of the major tuna consumer markets in Europe, Americas and Australasia have begun to shift their tuna sourcing to more sustainable and equitable methods. The entire UK, New Zealand and Australian tinned tuna markets for example will be supplied solely from pole and line, handline and FAD free purse seine operations by end of 2016 the latest. Retailers and brands from as large as Tesco (UK and elsewhere), Safeway (US), Walmart (US), Coles (Australia) are making binding and permanent commitments to procure their tuna products from sustainable and ethical sources. Also leading tuna brands and traders such as Princes, John West and Trimarine are transforming their operations to meet the requirements of these sustainable buyers. Princes, owned by Japanese Mitsubishi Corporation, and John West, owned by Thai Union, have made commitments to supply 100% pole and line and FAD free purse seine tuna by 2016.

Whilst many of the commitments and changes in fishing practices has been focused on the canned tuna sector and fisheries producing those products (purse seine and pole and line), the longline and handline buyers are also starting to demand sustainable, traceable and locally produced tuna for the fresh and tinned sectors. Japan and Korea are starting to show interest in sustainable seafood procurement as demonstrated by recent Greenpeace ranking of retailers in Japan.

In 2009, Greenpeace ran a pre-order petition in which retailers and tuna traders committed to buying over 70 million cans annually of locally caught pole and line tuna from the Pacific. If rerun today, that amount would have doubled or tripled as demand has grown. Supplies, especially from the Pacific region, have not increased to meet this demand.

As demand for sustainable and ethical products grows, opportunities open up for investment from the market to help develop and 'clean up' fisheries.¹

With improved standards and resulting labelling and some cases certification, products can also expect to be achieving price premiums. MSC certified purse seine caught FAD free tuna, for example, is expected to sell for 20% above regular tuna prices. Fair Trade certification is another labelling option that may become available for gaining access to markets with a price premium and providing opportunities for community development in the future. Fairtrade USA has begun developing a wild caught seafood standard, which could become an important model in ensuring the fairer returns for low insensitivity, sustainable and ethical production of seafood are available to Pacific Island fisheries. Whilst referring to the US Fair Trade pilot specifically in this report Greenpeace recognises that ultimately what is described in this report is a model for fairer traded sustainable tuna. It is for each tuna producer, brand and buyer to ensure these principles are developed, integrated and implemented in their production and supply chains independently of any possible future certification. Greenpeace will be assessing markets, industry and government's performance on the basis environmental, social and equitable production criteria.

Ultimately, the system should be fundamentally transformed so that the production of environmentally unsustainable and socially inequitable products become economically undesirable and products complying with strict environmental and social standards become the mainstream option.

The Western and Central Pacific is the largest tuna fishing ground in the world but currently only stands to meet a miniscule amount of this increasing demand on sustainable and ethical products. To date there has been little government level activity to ensure transformation of its industry to meet this increasing demand beyond the activities of the Parties to the Nauru Agreement (PNA) to increase FAD free purse seine fishing. The region can and must do more to meet the new expectations of the consumers and markets the world over and reap long-lasting benefits for its coastal populations and society at large.

This report provides a starting point to make this happen.



I would like to acknowledge the contribution of the lead author, Kate Barclay of the University of Technology Sydney, Australia (UTS) who spent several months researching and writing the main chapters of this report¹, and Hannah Parris who produced chapter four. Also, Robert Gillett contributed greatly through helping design the study, suggesting useful interviewees and reports, and commenting on Chapters 1-3 in draft form. I would also like to acknowledge Marc Allain and Robert Stone who completed separate reports for Greenpeace that have provided useful case studies.

A special thank you to the Greenpeace team involved on this project, especially our Pacific campaigners Duncan Williams, Lagi Toribau and Seni Nabou who shaped our vision and found time within their extremely demanding schedules to contribute to this report.

Executive Summary



For years, Greenpeace has vigorously advocated for sustainable and equitable tuna fisheries in the Pacific. Through the use of sustainable fishing capacity and mortality limits, techniques and participation at all levels by Pacific Islanders in their fishery, Pacific island countries could maximise and sustain the economic returns from tuna resources. Given the historical dominance of large-scale and foreign operated tuna fleets, the realisation of this vision requires a complete transformation of the Pacific tuna fisheries. Emerging market opportunities for socially responsible and environmentally sustainable seafood offer a new route to develop domestic tuna fisheries.

Industrial and foreign-owned fishing fleets have depleted and degraded tuna stocks and have employed few Pacific Islanders. Apart from modest fees paid to governments to access fisheries in their Exclusive Economic Zones (EEZs) and some on-shore tuna processing, little benefit has accrued to Pacific Island economies and local communities.

Greenpeace's vision for a transformed tuna fishery in Pacific Island countries includes the following key aspects. Methods of fishing used would be pole and line, troll, handline, free-school purse seine and best-practice longline. Tuna species would be harvested at sustainable levels, with minimal bycatch. Tuna fishing vessels would be owned and operated by Pacific island communities and local entrepreneurs. Artisanal and village-based fisheries would be organised as cooperatives, to coordinate the sale of their catch and to set the strategic direction for their fishery. Fish caught would be processed in the Pacific Islands region for canning, as well as for the high value-added and fresh or frozen tuna markets and would be 'traceable' down the supply chain. Products from such fisheries would receive independent verification of both environmental and social standards that can also ensure higher prices are fetched on the international market compared to unsustainable products.² Partnerships with responsible and like-minded international retailers, seafood trading companies and other players would be necessary to achieve the standards. The prices that such tuna products could command would be enough to enable good local working conditions and standards of living, food security, protection of livelihoods and local development opportunities.

While domestic Pacific Island fisheries have had mixed success in the past, Greenpeace argues that commercially viable, locally owned tuna businesses are now possible, as demand for environmentally sustainable and socially responsible products has increased and largely exceeds supplies currently available. Small-scale tuna operations such as pole and line and artisanal tuna fisheries can use a business model based around the use of smaller-scale fishing vessels and trading cooperatives to supply international export markets for canned as well as fresh and frozen tuna products.

In a fair trade model, a producer is guaranteed a minimum price in a long-term purchasing contract so that, if market prices fall, the producer's livelihood is not endangered. A percentage of sales are allocated for community development projects in the local area. Communities supplying fair trade products must adhere to International Labor Organisation standards and implement agreed community development plans. They must also be organised into a trading cooperative with democratic decision-making processes.

Support from governments and regional organisations is needed, including implementing a management framework that protects the targeted fishery, undertaking taxation and rebate reform, adopting policies that facilitate the involvement of Pacific Island stakeholders in their fishery and their training in business and managerial matters, and encouraging development of small and medium scale fishing entities, particularly artisanal fisheries.

In 2007, Pacific Island leaders publicly affirmed in the Vava'u Declaration their commitment to take greater control over the tuna resources that are so economically important to them, through promoting domestic tuna development and strengthening regional strategic approaches to fisheries management. This report provides a way toward achieving that vision.

“Only through a seismic shift in thinking can a transformation of Pacific islands tuna fishery occur” (Transform Aqorau, 2012). The transformation is toward a tuna fishery that is sustainable, controlled by locals and where the rewards are enjoyed by Pacific island coastal state peoples for the betterment of their living standards, and present and future livelihoods.



Recommendations

With the aim of protecting Pacific tuna fisheries from unsustainable exploitation and developing smaller-scale and locally owned fisheries, Greenpeace makes the following recommendations to Pacific Island regional bodies and governments for achieving the necessary transformation:



Better managing the tuna fishery:

- Exclude large-scale and destructive foreign-owned vessels from national waters or parts thereof with strong consideration given to reserving inshore and archipelagic areas for sustainable artisanal tuna fisheries
- Restrict catches to levels that are environmentally sustainable and economically optimal including through:
 - limiting vessel license numbers
 - requiring vessels to avoid fishing in the high seas, which are harder to regulate and monitor and prone to illegal fishing
 - banning all transshipments at sea
- Take grievances against harmful subsidies in the industrial fishing sector such as for boat building and fuel for fishing to United Nations Commission on Sustainable Development and to the World Trade Organization (WTO)
- Implement all measures to prevent and deter Illegal, Unreported and Unregulated (IUU) fishing.

“Progress is impossible without change, and those who cannot change their minds cannot change anything.”

George Bernard Shaw (1856-1950)

Strongly supporting the development of Pacific Islander involvement and investment in tuna fisheries:

- Remove impediments to domestic fisheries:
 - address unfavourable cost structures for domestic fisheries businesses through:
 - > taxation reform
 - > setting fisheries access costs higher for distant water than local vessels
- Improve local participation in opportunities arising from tuna industries by facilitating training in business management (e.g. in global supply chain businesses) and in fishing as a commercial business. This could involve:
 - targeting school leavers with relevant tertiary education scholarships
 - targeting aspiring fishing vessel owner-operators
 - organising internships in progressive international seafood trading companies
- Develop an independent, transparent and robust system for regulation, monitoring, consultation and reporting of environmental and social impacts around tuna fishing and processing, in close consultation with local communities:
 - develop traceability systems for social and environmental responsibility standards
 - work through complexities around businesses operating in village environments, including customary tenure and motivations
- Increase local benefits from the longline fishery by:
 - introducing mandatory crewing requirements
 - investigating commercially viable ways of requiring vessels to offload to local processors
 - exploring regional collaboration to develop opportunities for locally owned small-scale fisheries such as:
 - > For example, Parties to the Nauru Agreement (PNA) cross border investment initiatives
- Ensure that domestic fleets meet the highest standard regarding bycatch mitigation and avoidance
- Ensure all measures are taken to ensure food safety requirements

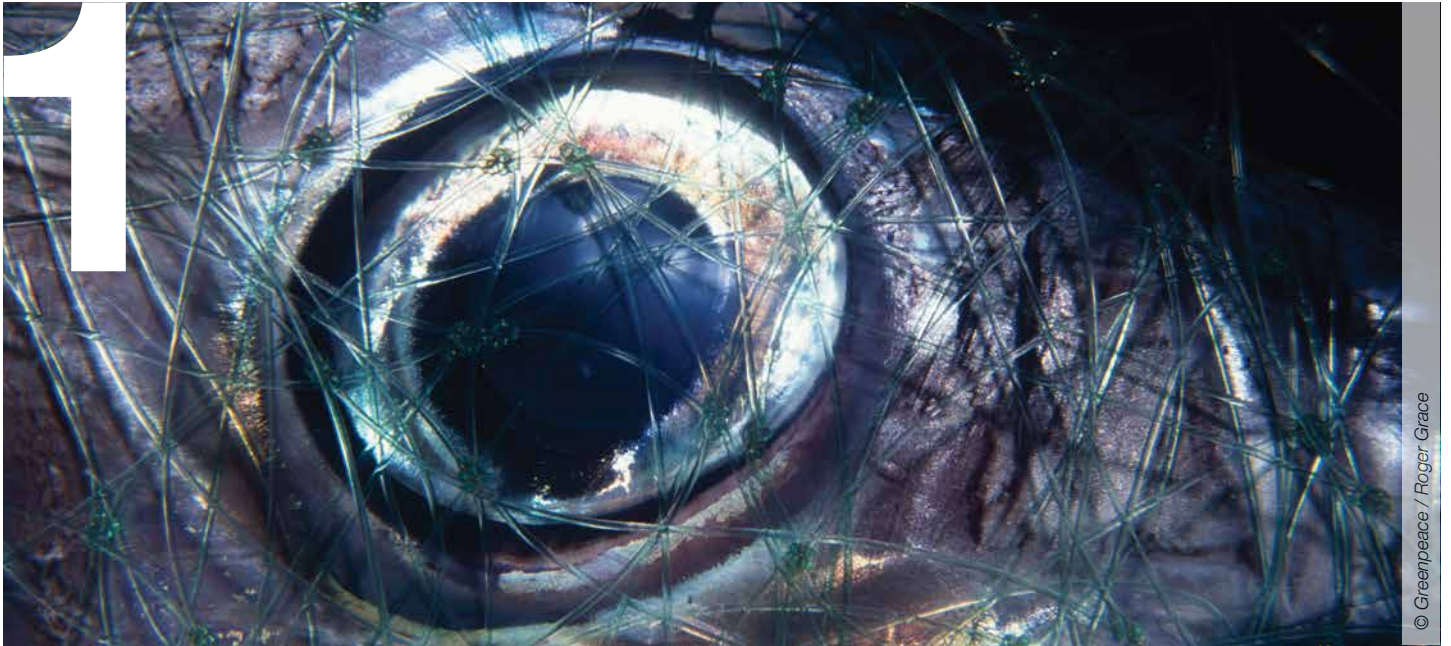
- Support the development and marketing effort of local pole & line operators with demonstrated positive impacts on environmental sustainability and local communities by:
 - showcasing certificated fisheries via official trade conferences or tours
 - assisting with trading agreements with third parties or export market countries

Especially promoting artisanal fisheries:

- Reserve inshore and archipelagic areas for sustainable artisanal fisheries only
- Develop a workable system for managing and regulating (licensing, monitoring, regulating, reporting) artisanal fisheries, in close consultation with relevant communities
- Develop business plans for artisanal fisheries supplying export markets, using for example the fair trade model. Support could include:
 - exploring models for trade cooperatives to coordinate marketing of artisanal fishing fleets, including for fair trade
 - enabling access to supply chains for high value export markets
- Develop on-going systems of training for artisanal fisheries in food safety and business management, via:
 - regional organisations, such as the Secretariat of the Pacific Community (SPC) and Forum Fisheries Agency (FFA)-sponsored training programs on food safety and quality for small-scale fisheries
 - businesses with interests in the success of artisanal fisheries, e.g. seafood export companies hosting training sessions for their artisanal suppliers

Making a priority of raising awareness at all levels about environmentally sustainable and socially responsible tuna fisheries in order to build and sustain market demand for pole and line, handline and sustainable artisanal tuna fisheries

Introduction



Kate Barclay, University of Technology Sydney, Australia

The Western and Central Pacific Ocean is the biggest tuna fishery in the world. By volume and value the bulk of the fishery is destined for canneries – skipjack, albacore and yellowfin – but significant amounts of fresh and sashimi tuna – yellowfin, bigeye and albacore – also make their way from this region to world markets. Commercial tuna fisheries took off in Pacific Island countries in the 1970s and have been dominated by industrial fleets. Most of the fishing has been done by foreign vessels paying access fees to island countries for catching fish in their waters, usually only 5-6% of the landed value of the fish, although the proportion has increased in recent years. There have also been domestically based industrial fleets, with vessels generally smaller than the foreign ‘distant water’ industrial vessels, but still costing at least several million dollars each, putting them beyond the reach of most local business people. Although inequitable, access fees have nevertheless brought much needed revenue to small island states, and partnerships with international firms with well-established supply chains have enabled export market connections for domestic production. On the whole, however, it is clear this set up has been placing large profits into the hands of multinational players instead of directing benefits to Pacific Islanders. Pacific Islanders’ dissatisfaction with the minimal returns flowing to them from the exploitation of their resources is compounded by foreign fishing fleets and their governments from wealthy industrial countries in Europe and Asia adamantly resisting measures to more effectively conserve the Pacific tuna resource.³

In recent years, the retail markets for seafood in Europe, North America and many other countries have opened up space for ‘environmentally sustainable and socially responsible’ seafood – meaning it is produced in ways that are environmentally sustainable and socially equitable. Increasingly, certification of fisheries as sustainable by the Marine Stewardship Council (MSC) is requested by retail buyers. Several fisheries supplying global canned tuna markets attained MSC certification in 2011 and 2012. Greenpeace’s rankings of canned tuna have also informed consumers. Consideration of the social conditions under which tuna is produced is also becoming commercially important. Fair Trade standards for aquaculture shrimp and for capture fisheries are being developed. Factories around the Pacific region that may process MSC-certified tuna are seeking certification under the Social Accountability 8000 scheme. A recent Greenpeace publication summarised the changing market conditions for seafood this way: ‘Visionary business leaders and politicians are recognising the simple fact that running tuna fishing sustainably today is the only way to secure supplies for tomorrow and beyond. Sustainable sourcing is an investment in the future – protecting local food supplies, jobs and economies and also delivering a business model that keeps the industry viable for the long-term’.⁴

There is hope that a shift away from the large-scale industrial model of fishing, dominated by large fishing powers, towards smaller scale vessels operated in coastal island countries by communities and local entrepreneurs, should result in greater economic benefits for those countries, and place management of the resources more effectively within their control. Smaller scale industrial vessels can be locally owned and operated, even locally built, bringing the economic activity generated from their activities within the domestic economy. 'Artisanal' vessels of less than 15 meters or so in length may be built, owned and operated from coastal villages, improving their supplies of food fish and livelihood opportunities. Local investors have a greater stake in the long-term sustainable management of fisheries resources than the 'distant water' large-scale industrial fleets that can move on after overfishing to maximise short-term gains.

This report presents case studies of smaller-scale locally run tuna fisheries operating in the Pacific, giving recommendations for measures governments need to implement for a transformation of tuna fisheries.

Industrial Tuna Fisheries in the Pacific

As Pacific Island countries were becoming independent in the 1970s they needed to expand and diversify the cash parts of their economies. It was hoped that Pacific Island countries would be able to follow OPEC's lead and use their raw commodities to generate wealth from world trade⁵. Pacific Island governments tried two main ways to gain development benefits from their tuna resources from the 1970s to the 1990s: maximising access fees paid by foreign fishing fleets, and government investment in vessels and onshore facilities as owners or joint venture partners with foreign fishing companies.⁶ Public investment in tuna industries was seen as a way to develop exports and to provide jobs.

The first wave of commercial tuna fishery development did not result in thriving indigenously owned and run businesses or great wealth generation in local economies. Most of the government-owned businesses lost money and eventually foundered by the 1990s.⁷ Some, such as the Pacific Fishing Company (Pafco) plant in Fiji and Solomon Taiyo cannery in Solomon Islands have continued to operate, and have provided large numbers of jobs over the decades, but were not commercially very successful, and required large injections of public funding to keep going. In the Federated States of Micronesia government tuna businesses are estimated to have cost the government over USD12 million annually.⁸ Many Pacific Island governments gave up on the aspiration of domestic industry development, falling back on the idea of maximising access fees.⁹



In the mid-1990s Papua New Guinea started a second wave of efforts to encourage local industry development whereby, instead of the government owning enterprises, it has used its control of the resource to leverage investors to invest in onshore processing (canneries).¹⁰

Pacific Island countries are rethinking the ways they might use their control of the fisheries resource to get international companies to invest onshore. For example, the Parties to the Nauru Agreement (PNA), a grouping of eight 'tuna-rich' Pacific island countries¹¹, have in recent years raised their access fees through common licensing guidelines and benchmark prices. PNA members agree on a limited number of fishing days for the year, based on scientific advice about the status of the tuna stocks. Fishing days are then allocated by country and are sold as a tradable commodity called a 'vessel day'. Previously, the standard rate of fees per standard vessel day ranged from US\$ 900/day to US\$2,500. In 2011 a vessel day was worth US\$ 5,000, which corresponds to 10% of the vessel catch value.¹² This was due to the PNA's push for conservation and management measures that ensure that the wholesale extraction of the tuna stocks is better regulated. More recently, an agreement was reached in February 2013 to set a new minimum benchmark of US\$ 6,000.¹³ Fiji and Kiribati have entered into a collaboration whereby the atoll country of Kiribati, which has great fisheries resources but lacks the geography to have onshore processing, is requiring investors to establish a processing plant in Fiji, which has a more viable geography for processing. Since 2012 the Solomon Islands has required long-line vessels licensed to fish in the EEZ to land their catch locally for processing instead of transshipping them at sea, thereby boosting local development and employment opportunities. More recently, Papua New Guinea's National Fisheries Authority has released a circular to all fishing fleets operating in their waters to begin offloading 100% MSC eligible free-school catch with effect from July 2013. Earlier statements in March 2013 by PNA ministers to all fleets operating in the PNA waters encouraged them to start fishing MSC free schools.¹⁴

The majority of tuna fishing in the Pacific, therefore, is done by large-scale industrial fleets from wealthy industrialised countries. The methods they use are longlining and purse seine fishing predominantly using FADs. There are some smaller-scale industrial fleets based in Pacific Island countries, and some of these are owned by Pacific Islanders. Artisanal fleets do not supply tuna export markets in most Pacific Island countries.

Maximising Economic Benefits from Tuna Resources: Why Are we Still Asking the Question?

"This question was first asked 36 years ago, "how can we maximise the economic benefits from our tuna resources?" Our leaders expected us to benefit from our tuna resources. It was a given!

The agitation by developing countries to have a fairer share of the oceans resources was predicated on this belief. Indeed, the idea of the 200 mile Exclusive Economic Zone (EEZ) was intended to do just that.

Why then are we asking the same question in 2012? Is it because we have failed? The answer is simple. One does not have to be an economist, political scientist or lawyer to know. We can maximise the benefits from our tuna resources if we own and control the vessels that harvest the tuna, own the production plants that process and value add our tuna and own the marketing and retailing platforms that distribute our tuna products in world markets. If not owning the facilities we must retain control of our fish..... So it will take a major seismic shift in mindset to transform the fishery."

(Dr. Transform Aqorau Chief Executive Officer – Parties to the Nauru Agreement Office, Speech delivered at the Korea-South Pacific Fisheries Forum 17 October, 2012 Suva, Fiji) ¹⁵

An Alternative Model: Smaller Scale, Bigger Benefits

There are two main problems with the large-scale industrial model of tuna fisheries. One is that large-scale industrial fishing vessels are associated with a range of negative environmental impacts including overfishing, high fuel consumption and discarding unwanted fish at sea.¹⁶ Large-scale tuna fishing vessels are generally owned by companies from Taiwan, Europe, Japan, Korea, the USA, Philippines and increasingly China.¹⁷ The governments of these fishing powers have fought against measures to effectively curb overfishing within the international organisations whose role it is to manage tuna fisheries, including the Western and Central Pacific Fisheries Commission (WCPFC).¹⁸

Another problem with the large-scale industrial fishing model is that these vessels are high tech and cost tens of millions of dollars to buy, and large cash reserves to operate. This makes them unsuitable to build or maintain in Pacific Island countries, and makes it difficult for start-up investors from small island developing economies to participate in the industry. These kinds of fishing fleets have not employed large numbers of Pacific Islanders as crew, and the access fees they have paid have not resulted in noticeable development improvements in the countries in whose waters they operate.¹⁹ More benefit can be gained from direct and indirect involvement in the fishery by the locals.

A study by the Fisheries Centre at the University of British Columbia has outlined the significance of small-scale fisheries globally, and illustrated their benefits compared to large-scale fisheries (see Figure 1).²⁰

Smaller scale tuna fishing boats are feasibly built, owned, operated and maintained within small-island developing coastal states. Having fishing vessels based locally creates multiplier effects in the economy through employment and other businesses needed to service and supply their operations. Human resources are developed through working and training in the industry. Small



© Greenpeace / Natalie Behring

vessels that make short trips and enable crew to return home frequently are much more attractive to work on than large industrial vessels that may spend months or even years at sea before going in to port. Small-scale fishing methods employ more people per ton of fish caught. The United Nations Special Rapporteur on The Right to Food argues that large-scale fishing vessels have made access to food less secure and this should be addressed by supporting small-scale and artisanal fisheries.²¹ The kinds of supports recommended include facilitating small-scale and artisanal fishers to sell their product in lucrative export markets, and establishing resource management regimes that enable their fisheries.















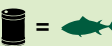





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Imagining More Sustainable and Equitable Tuna Fisheries

Emerging market opportunities for socially responsible and environmentally sustainable seafood offer a new route to develop domestic tuna fisheries. What would more environmentally sustainable and socially responsible tuna fishing in the Pacific look like? The methods of fishing used would be pole and line, troll, handline, FAD-free purse seine and best-practice longline.²² The tuna species targeted and sold in markets for sustainable tuna could be the resilient skipjack, albacore and under some conditions yellowfin, but not bigeye until stocks have been restored to healthy levels. There would be minimal bycatch, with no targeting of sharks or shark finning. The vessels would be owned and operated in coastal states, generating benefits for island peoples in terms of food production, livelihoods and development opportunities. The vessels would be small – smaller-scale industrial vessels and also ‘artisanal’ vessels that may be built, owned and run by families in coastal villages.²³ Village-based fisheries would be organised as cooperatives, to coordinate the

sale of their catch and set strategic directions for their fishery. Fish caught would be processed in the Pacific Islands region for canning or fresh markets, and would be ‘traceable’ down the supply chain, so that at the retail end it is possible to know that the fish was caught in a socially and environmentally responsible manner. Coastal states, having vested interests in the long-term health of their resources, would be managing the fisheries sustainably in concert with regional organisations such as the Western and Central Pacific Fisheries Commission, the Pacific Islands Forum Fisheries Agency and the Secretariat of the Pacific Community. International retailers and seafood trading companies would be working with Pacific Islander fishing companies to supply the highest value markets around the world. The prices paid for the tuna would be enough to enable reasonable working conditions and standards of living for everyone involved in its production, and covering any cost differences between this kind of production and less sustainable methods.

Figure 1. Industrial and Small-scale Marine Fisheries Compared

	Large-scale	Small-scale
Number of fishers and fishworkers employed in marine fisheries	 9 million	 52 million
Annual catch of marine fish	 56 million	 34 million
Percentage of marine catch used for local human consumption	 56%	 77%
Capital cost of each job on fishing vessels	 US\$30,000- \$300,000	 US\$250- \$2,500
Annual catch of marine fish for industrial reduction to meal, oil, etc.	 About 22 million tonnes	 Almost none
Annual fuel oil consumption	 14-19 million tonnes	 1-3 million tonnes
Fish caught per tonne of fuel consumed	 2-5 tonnes	 10-20 tonnes
Fishers employed for each US\$1 million invested in fishing vessels	 5-30	 500- 4,000
Discard rate	 13%	 3%

Source: International Collective in Support of Fishworkers, c.2010. *Small-scale Fisheries (SSF)*. [http://eussf.icsf.net/en/page/606-Small-scale fisheries \(SSF\).html](http://eussf.icsf.net/en/page/606-Small-scale%20fisheries%20(SSF).html) .²⁴



Locally Owned

Local ownership of fishing companies and vessels can improve the management of fisheries resources and facilitate more development opportunities in local economies.

The current state of overfishing and depleted stocks in most of the world's tuna fisheries demonstrates that the large scale distant water fishing fleets that have dominated the fisheries, and their governments, have failed to look after tuna resources. They have weakened the efforts of Regional Fisheries Management Authorities to implement effective conservation measures. In the Western and Central Pacific Fisheries Commission (WCPFC) the coastal state Pacific Island governments have been arguing for stronger conservation measures but been unable to realise them in this forum due to opposition from fishing states.²⁵ For example, the ban on fishing in high seas pockets achieved in 2008 was overturned in 2012.

In 2007, national leaders of the Pacific Islands Forum publicly affirmed in the Vava'u Declaration their commitment to take greater control over the tuna resources that are so economically important to them, through promoting domestic tuna industry development and strengthening regional strategic approaches to fisheries management.²⁶ Pacific Island governments are small, with limited revenues, which calls into question their capacity to effectively manage these fisheries. There are, however, several regional organisations that have been centrally involved in fisheries management for several decades. Collaborative efforts via these organisations have already shown Pacific island states' willingness and capacity to make robust and on-going efforts at resource management. For example, the Forum Fisheries Agency (FFA) established an electronic vessel monitoring system and a register of vessels compliant with license requirements. Catch recording and stock assessments have been carried out by the Secretariat of the Pacific Community (SPC). The Parties to the Nauru Agreement (PNA) group of equatorial countries with the richest skipjack resources have in recent years stipulated 100 per cent observer coverage on vessels, banned fishing in the high seas (relatively unregulated) areas between the maritime zones of member countries, and limited some purse seine fishing activities.

Several interviewees for this study pointed out that it is difficult to compare the benefits to a country in revenue from access fees (a simple dollar figure) with the benefits to a country from employment generation from domestic development (hard to quantify and not all the relevant data is collected). What we can say is that looking at tuna industries operating in the Pacific over the last few decades, increasing government revenue through fisheries access fees in Pacific Island countries has not meant improvements in ordinary people's lives, whereas domestic tuna enterprises have at least provided employment and an injection of cash to communities.²⁷ Another way to look at the economic benefits of domestic industry versus foreign fishing vessels is to compare the amount of money put into the domestic economy per ton of fish caught.

It has been argued that domestic tuna industry development does not lead to improved economic outcomes for Pacific Island countries, pointing to the lack of commercial success in efforts at

domestic development from the 1970s to 1990s.²⁸ These previous efforts, however, were mostly state-owned and had commercial viability problems that have been well documented.²⁹ Building on the lessons of previous efforts, focusing on smaller-scale fishing vessels targeting high value markets for environmentally sustainable and socially responsible seafood, and with appropriate policy and other support from governments and regional organisations, commercially viable locally owned businesses should be possible.

Even with local ownership of fishing vessels, however, partnerships with foreign firms will remain important for international connections. Tuna markets, especially for canned tuna, are global, and to access the most valuable export markets complex international trading and marketing networks are crucial. The local ownership described as being the most beneficial for Pacific tuna fisheries in this report, therefore, is envisaged as being in close collaboration with international investors.

Table 1: Economic Benefits from Local versus Foreign Fleets (Solomon Islands 2006)

Fleet	Catch (metric tons)	Money Spent in Domestic Economy	Money Paid to Government
Soltai Fishing and Processing Company Ltd	7,254	SBD122 million	SBD1.25 million
National Fisheries Development Ltd	22,343	SBD62 million	SBD8.7 million
Korean foreign fleet	32,000	0	SBD11.6 million

Source: Wilson, Marc. A. 2007. 'A Fisheries Sector Development Strategy for the Solomon Islands.' (Honiara, NZAID Solomon Islands Marine Resources Organizational Strengthening [SIMROS] Project, Solomon Islands Ministry of Fisheries and Marine Resources).

Notes: For the Korean fleet money paid to government were access fees. For the other two companies this included license fees but was mostly taxes and duties. Soltai paid so little tax because it was in financial difficulties in the mid-2000s.

Case Study: Pole and Line Fishing in Solomon Islands



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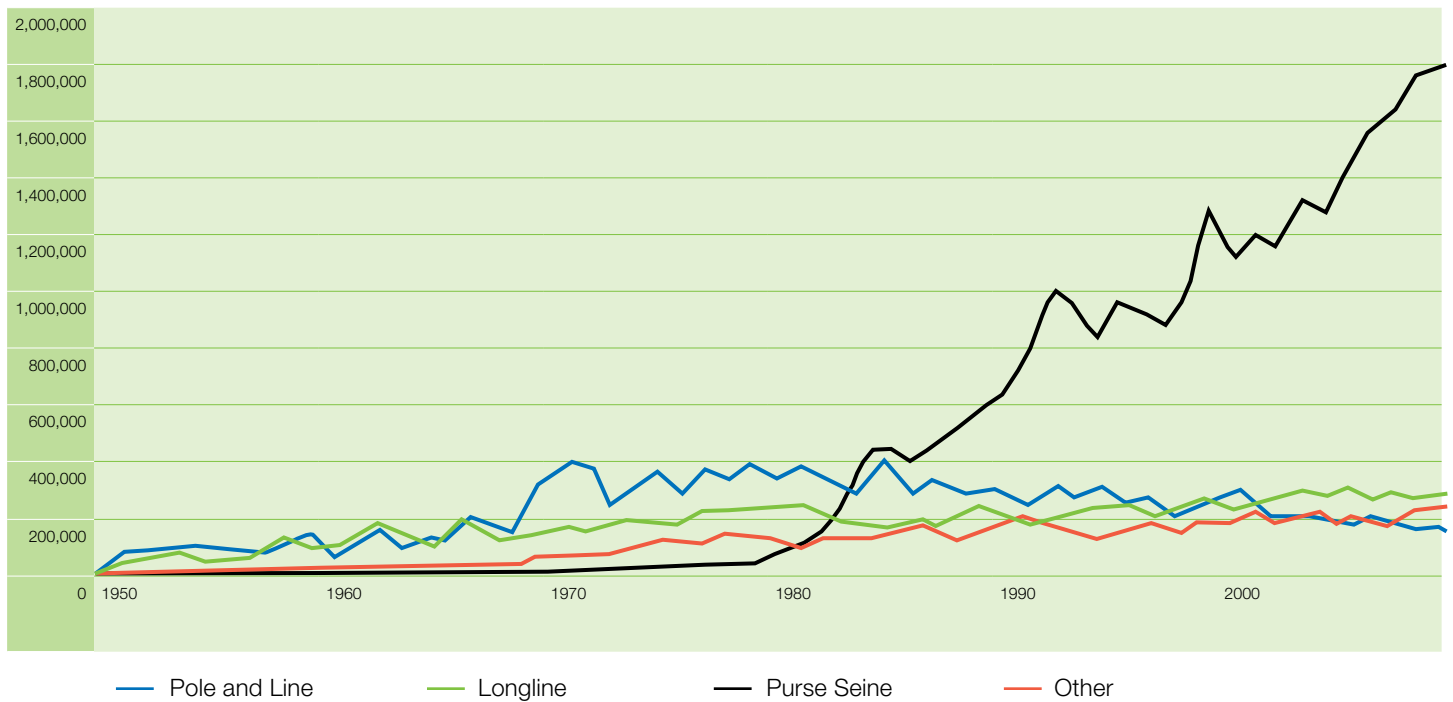
Pole and line fishing for skipjack is one of the modes of tuna fishing that can be socially and ecologically sustainable. The pole and line method has very little bycatch. Pole and line fishing uses live bait to attract tuna to the vessel where they can be hooked and flipped into the boat. The bait is small fish such as sardines caught in reef areas, and care needs to be taken to ensure that bait fisheries are also conducted sustainably.³⁰ Solomon Islands' network of lagoons means plentiful bait grounds and the bait fishery remained healthy even during peak pole and line production in the 1980s.³¹ The pole and line method is not suitable for catching sharks. Reef sharks are occasionally caught in bait nets, but in general shark finning is not an issue for pole-and line fisheries as it is for tuna longline fisheries. This mode of fishing requires large fishing crews, sometimes separate to those catching bait fish, meaning more employment than the purse seine method. The pole and line style of fishing and the vessel technology is suitable for local participation, meaning vessels can be totally crewed by Solomon Islanders.

Solomon Islands had a large pole and line fishery from the early 1970s to the late 1990s.³² Industrial pole and line fishing for tuna started there with Solomon Taiyo Ltd in the early 1970s, a joint venture between the government and the multinational corporation Taiyo Gyogyo of Tokyo.³³ Solomon Taiyo used medium-sized (up to 200 Gross Register Tonnage GRT) Japanese-made steel hulled vessels.

National Fisheries Development (NFD) was another joint pole and line venture between the government and Solomon Taiyo, started in 1978. The aim of NFD was to further government goals of localising vessel ownership, boat building and maintenance, fleet management, and crew employment. NFD was successful in achieving high levels of localisation in crewing, and in supplying large amounts of fish for the Solomon Taiyo cannery. However, it was never commercially competitive. Partly this was due to the small size and low speed of the boats it used, and partly because its labour force could not yet match the established workforces from competitor countries. In 1990, the government privatised the company and it eventually came to be owned by the multinational tuna trading company Tri Marine.

In the 1980s, technical innovation made purse seine fishing for skipjack viable.³⁴ Purse seine vessels are generally larger and more high-tech than pole and line vessels, so are more expensive to buy and maintain. Economies of scale meant the cost per ton of fish was lower than for pole and line. Fishing powers such as Japan, Taiwan, Korea, Spain and China subsidised their fishing and boat building industries, which boosted the development of purse seine fishing for tuna (see Figure 2). Purse seine-caught fish flooded the market globally and fish prices dropped. Pole and line fishing for skipjack in developing countries declined globally.

Figure 2. Tuna Catches (mt) in the WCPF-CA by Purse Seine, Longline, Pole and Line and Other Gear Types, 1950-2008.



Source: Secretariat of the Pacific Community (SPC) Oceanic Fisheries Programme Tuna Fishery Yearbook data files.

Towards the late 1990s, UK retail chain Sainsbury's paid up to 10 per cent more for quality products addressing social responsibility factors.³⁵ Around 2000, however, buyers were no longer willing to pay the price premium and it was no longer viable to produce pole and line tuna in Solomon Islands. The Japanese joint venture partner pulled out of Solomon Taiyo, leaving it a wholly government owned company, renamed Soltai.³⁶ NFD divested its pole and line fleet in 1999, expanding its fleet of small-scale purse seine vessels from two to five during the 2000s.³⁷

In addition to its fishing fleet, Solomon Taiyo Ltd had a cannery in Noro, Western Province. From 2004, NFD's parent company Tri Marine arranged the export of processed tuna loins from the Solomon Islands to Europe.³⁸ In 2010, Tri Marine acquired a controlling shareholding of the processing factory, now called Soltuna.³⁹

The European Union (EU) remains the main market for Solomon Islands' fish. The EU has a 24 per cent tariff on imports of processed tuna. Importantly, imports from Solomon Islands are exempt from the tariff, enabling its products to compete against the main competitor countries, such as Thailand and the Philippines,⁴⁰ despite its relatively high production costs. The tariff advantage makes local processing viable.⁴¹ Licenses for longline companies now encourage offloading in Solomon Islands, which has increased supplies of fish for processing at the Soltuna plant, enabling the factory to operate more profitably and employ another 500 people (see Table 2).

Recent global market concern about environmental sustainability and social equity in production has increased demand for pole and line caught tuna. In addition, due to the decline in the fishery over recent decades, the supply is also low, so pole and line tuna are once again more attractive to fishing companies.

The Current Pole and Line Fishery

NFD has returned to medium-scale industrial pole and line fishing in the Solomon Islands, and by 2012 has with three medium-sized (200GRT) vessels. Tri Marine has refurbished a large-scale pole and line vessel for the fishery. NFD is also participating in an FFA-funded project trialling a new artisanal pole and line fishery.⁴²

Fisheries Management

In order to be able to credibly market product as 'sustainable', and to meet importing requirements, independent, transparent monitoring and regulation of, and reporting on, the fishery is needed. The capacity of the Solomon Islands government to actively manage its fisheries is limited, not least because of its small revenue base. The Solomon Islands Government does not follow a tuna management and development plan, nor has a formal fisheries licensing policy. However, Solomon Islands is part of several regional organisations that support fisheries management, including the FFA, SPC and WCPFC, and is one of the Parties to the Nauru Agreement. These organisations, implement policies affecting the activities of fishing fleets, such as recording tuna catches and carrying out stock assessments. The New Zealand government has been assisting the Solomon Islands Ministry of Fisheries and Marine Resources with institutional strengthening as part of the Regional Assistance Mission established in 2003.

Two long-term licensing policies have encouraged locally based fisheries and conserved stocks. First, these fisheries have had very discounted license fees compared to access fees paid by foreign vessels, which goes some way to mitigating the costs domestic companies face because of high taxes.⁴³ Secondly, the Main Group Archipelago waters around the main chain of islands have been reserved for domestic fisheries; large-scale distant water vessels are excluded from this zone.

One of the features of the skipjack fishery in the western and central Pacific Ocean is that the fish schools move with fluctuations in sea surface temperature, which alters with El Niño oceanographic conditions. Large industrial fleets follow the fish and operate where the fishing is best in any given year. However, because NFD's medium-scale pole and line vessels use tropical bait, they must operate within a few hours of bait grounds, and a few days of the shore base, so can only fish around Solomon Islands. The Main Group Archipelago waters are generally rich in skipjack even when the schools of fish in the deep water have shifted elsewhere, so protecting this resource against overfishing is what makes the pole and line fishery in Solomon Islands possible.

In addition to being able to demonstrate to retailers and consumers that fish caught in Solomon Islands has been caught sustainably, it is necessary to demonstrate that the fish in the can labelled 'made in Solomon Islands' is in fact from that sustainable fishery. 'Traceability' is information enabling the tracking of fish from the retail shelf back to the vessel that caught it. It has long been required for food safety purposes. NFD only employs traceability as required by importing governments and retail buyers for food safety. A traceability system with third party verified chain of custody is something that the government and operators will need to work on in order to market these products under their environmental and social credentials.

Price Premium

In recent years, the fish price for canning tuna has doubled its previous average price, and the continuing demand in the context of declining catches means high prices are likely to be here to stay. A pole and line fishery can now be profitable, even if pole and line product is sold at the same price as purse seine fish. A company like NFD, however, finds that the pole and line method is 40% more expensive per ton of fish,⁴⁴ and it does not make financial sense to sell pole and line product at the same price as purse seine.⁴⁵ In 2013, retail prices for UK online groceries appear to now be substantially higher for products labelled as caught by the pole and line method.⁴⁶ Buyers are offering a premium price of up to 20 per cent. The exact amount of the price premium needed to make fisheries viable varies from fishery to fishery, and the amount being offered is kept confidential by industry players.



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Employment

NFD's operations generate jobs for Solomon Islanders. Table 2 shows the employment at the Soltuna plant, which is mostly reliant on NFD's fish, although now it is also using albacore from longline fishing companies. As one interviewee put it, every Pacific Islands woman working in a tuna factory is not growing her own food. So she is raising her own income, and also providing a livelihood opportunity for other women whose food crops she now buys. A revitalisation of the pole and line fishery may potentially generate many more jobs. Pole and line employment currently makes up around 70 of NFD's 280 jobs listed at Table 2. When Solomon Taiyo had a fleet of 20 vessels in the late 1990s, around 1000 men worked as pole and line crew.⁴⁷

Most of the large-scale operators employ few or no Pacific Islanders on their vessels. Pacific Islander crews often do not have enough schooling to gain training and promotion in the industry so remain at the lower levels of pay. They also often experience cultural shock at the life on board, due to cramped living conditions, long working hours, and feelings of cultural exclusion on vessels predominantly crewed by other nationalities. Some of the large vessels are at sea for months or years at a time. Pacific Islander crews have high rates of leaving their vessel before their contract is completed. On the whole, fishing companies and boat owners often prefer crew from low wage Asian countries.⁴⁸

Medium-scale pole and line fishing in Solomon Islands, however, is quite a different proposition. Pole and line fishing in the tropical Pacific operates within a few hours of bait grounds, and a few days of the shore base, enabling a much more favourable working life. The smaller size and lower technical complexity of these boats compared to the ocean-going large-scale vessels means a lack of formal schooling is not a barrier to training and promotion up the ranks, so Solomon Islanders filled all levels of post in the fleet by the late 1990s.⁴⁹ NFD tapped into this workforce and the current pole and line operation is staffed entirely by Solomon Islanders, including the fleet manager, maintenance technicians, fishing masters and engineers. Locals working at all levels of operations mean more employment and skills and experience that can be taken into other arenas if they move jobs. They become role models, demonstrating that Solomon Islanders can be leaders in the modern economy.

Table 2. Solomon Islander Employment in Tuna Fishing and Processing Companies 2001-2012

	Soltai/Soltuna	NFD
2001	748	45
2005	850	75
2008	600	120
2012	1265	280

Sources: Gillett 2003; author interviews 2005, 2008, 2012; Solomon Islands Government 2012 p.11.

Business Structure

NFD is a locally registered company, wholly owned by the multinational tuna trading company Tri Marine. Currently no local investor would be able to run a pole and line fishery without trade networks and support as NFD does, so foreign investment is the difference between having the fishery and not. What does Tri Marine bring to the table that local investors currently cannot, and how might other private investors start to move into the sector, increasing local ownership in the future?

The central reason multinational investors are important is that skipjack for canning is part of global supply chains. Its production requires complex market relations with many other producers in different countries. This is because inputs must be sourced from multiple fisheries to supply the needs of big retail and brand buyers. To manage this most effectively, international tuna trading companies have themselves increased in scale and complexity. Currently Solomon Islands' pool of human resources includes experts in catching and processing tuna, but there is not yet a pool of investors and managers with the expertise and contacts to be able to operate globally in this manner without the connections of a tuna trading company. Such expertise can be acquired, and national human resources planning for the future should include developing this potential through tertiary education scholarships, internships and so on, in collaboration with international players that are showing interest in promoting and supporting sustainable and equitable fishing

The most practical benefit of having an internationally well-established company as the owner of NFD is 'deep pockets' for capital investment in vessels and shore bases, and for riding out the bad years. Fish prices are likely to stay high, but even so the investor community in Solomon Islands and the local fisheries sector need several stages of development in order to be able to do even part of what NFD currently operates. Education for the international tuna business community is also needed on investment possibilities in sustainable and equitable tuna fisheries in the Pacific.

Local Ownership of Fishing Vessels – Canada's Northern Shrimp Fishery⁵⁰

The Canadian government embarked on a domestication campaign for its northern shrimp fishery in 1980. Within about 15 years, this fishery was successfully localised by most measures – Canadian companies owned the fishing licenses, most employment was national, and there was significant reinvestment of profits in coastal communities. Vessel ownership was domesticated 'on paper' by the early 1990s, however, as of 2010 industry and government insiders estimated that as many as five of the 12 companies operating in the fishery effectively had half or more foreign ownership. Several of the companies that complied with the initial directives about localising vessel ownership in the early 1980s went bankrupt. Others avoided domestication of vessel ownership, utilising foreign owned vessels under 'royalty charters', whereby the vessel owners paid a percentage of the value of the catch to the domestic fishing license owner. This practice became technically illegal after a decade, although apparently it remains in use under the term 'profit sharing' with nominally Canadian vessel owners.

Why was vessel ownership more resistant to localisation than other factors of production? Initially expertise in the style of fishing and profitable operation of the vessels was held mostly by Scandinavians who had developed the fishery. Norwegian credit for fishing ventures was more favourable than that available in Canada, and the Norwegian government gave support to export industries. Thirdly the vessels were built in Scandinavia, their parts were most easily available in Scandinavia, and Canadian shipyards were unfamiliar with those vessels, so maintenance was more efficient in Scandinavia. The legal and financial frameworks for vessel ownership internationally means it is a common practice in many fisheries to disguise the 'real' ownership of vessels, and some vessel owners have made use of this to have a shrimp vessel ownership company that is nominally Canadian, while the real ownership of vessels has remained based in Scandinavia. One lesson from this case is that if governments implement rules to force domestic ownership of vessels but domestic ownership is financially unfavourable, investors will likely work around the rules.



In some ways medium-scale pole and line fishing in Solomon Islands is more amenable to local ownership than shrimp fishing vessels were in Canada, because the boats are less high-tech and less expensive, and the fishery has already existed in Solomon Islands for several decades so there is already the technical expertise in running and maintaining these vessels. What Solomon Islands does not have is a business sector with local investors experienced and skilled in operating these vessels profitably.

Pole and line vessels of the type that has been used in a commercially viable manner in Solomon Islands are steel hulled and made in Japan. There is no scope in the foreseeable future of building such vessels in Solomon Islands. The most feasible option for locally built boats would be wood and/or fiberglass.

In sum, increasing local ownership within pole and line fishing ventures such as NFD's is a long-term proposition involving several stages. A starting point is to develop the business community and encourage entrepreneurs who are interested in investing in fisheries. When such businesspeople emerge, they may invest in fishing vessels. The pole and line vessels that have been used in Solomon Islands to date, however, are too large and expensive for entry-level investment. The starting point should be vessels of smaller size, cost, risk, and less requiring of outside connections to build and maintain: artisanal vessels.



Artisanal Pole and Line/ Handline Project

Developing artisanal fisheries to supply export markets is not a new idea, nor is it easy to realise. Dozens of projects have been carried out all over the Pacific Islands since the 1970s with this goal, and none of them have resulted in commercially sustainable supplies for export markets.

A commercial fishery must be viable within certain socio-economic realities. In villages, social obligations are often prioritised more highly than commercial imperatives. It is necessary to spread income sources across multiple farming and fishing activities, and mechanical and logistical breakdowns can take weeks or months to fix. People thus do not commit themselves full time to cash-earning fishing activities for years on end, but stop and start fishing depending on these variables. Another point identified by agricultural development researchers George Curry and Gina Koczberski is that inputs requiring cash must be carefully planned for, as in village economies it is difficult to accumulate cash resources for commercial purposes.⁵¹ However, artisanal village-based fisheries have been operating for over a century, mostly in the high-value, less perishable commodities such as shells and dried sea cucumber, and projects in areas with good logistical connections to urban markets have resulted in on-going independent artisanal fisheries, as long as the provision of ice was supported.⁵²

Building on the lessons from previous projects and existing artisanal fisheries, therefore, it should be possible to work out a model of artisanal pole and line and/or handline fishery in which villagers are willing and able to participate, to supply premium markets for environmentally sustainable and socially responsible tuna.

The commercial environment is currently more conducive than it has been in the past. There is an increasing market demand for environmentally sustainable and socially responsible products, and a price premium for it. The industrial hub at Noro provides access to cannery and the full gamut of tuna markets around the world. Fish prices are high. Regional organisations such as the FFA and SPC are supporting the project. NFD and Tri Marine management is interested and willing to cooperate.

The Fisheries Development section of the FFA has been working on this issue for Solomon Islands, Papua New Guinea and Kiribati. Some aspects of the project for Solomon Islands have been explored, but the fishery is not yet in operation. A bait fishery along the lines of the village-based bagan holding net from Indonesia is planned, Indonesian operators have visited and showed how to build and operate bagans, and technical issues have mostly been worked out. For example, the light to attract fish will be LED light powered by batteries with solar rechargers instead of power generators. It is envisaged that the bagans can supply villages with food fish as well as supplying pole and line vessels with bait.

The socio-economics of operating the village-run bait fishery will be tested once the system is trialed for supplying existing pole and line vessels. Bait grounds in Solomon Islands are treated as customary land, and thus royalties are paid for their use. In the past, Solomon Taiyo and NFD paid coastal villagers royalties and fished for the bait themselves. Customary owners preferred not to catch the bait themselves since they could receive royalties for it anyway. But villagers without the rights as customary owners who might wish to catch bait and sell it, would not be given access to the fishery.⁵³ It is thus a challenge, in the context of customary tenure, for village-run bait fisheries to operate in a way that suits the landowners and provides commercial operators with reliable supplies of bait at a suitable price. Maintenance costs will also have to be planned for in a way that is manageable given the difficulties accumulating cash for such projects in village economies. The village-based entrepreneur working on the project has experience designing business plans linked to the tuna industry.

An additional challenge is for village-based fishers operating small vessels to provide product that meets the rigorous food safety requirements of the EU (the main market for Soltuna product). According to Robert Stone, the FFA project manager, the vessels can meet required standards by lining the hold with fiberglass, and training fishers in hygiene and cold chain methods. This training is offered by SPC, and training has been carried out with potential participants in the fishery, using NFD's facilities at Noro.

Another challenge in developing this fishery is that, for it to be recognised as sustainable, it should be managed, but artisanal fisheries in Solomon Islands have never been regulated or monitored - as they are not in most developing countries.⁵⁴ Government should take on a new artisanal fisheries management role. Minimal standards of management for the fishery need to be developed. Data on the vessels and their catches should be collected for monitoring purposes. Limits on the number of vessels involved and some kind of leverage over fishers, such as may be achieved through licensing regulations, should be established so government can step in if necessary to prevent unsustainable practices. Government will need to undertake extensive consultation with artisanal fishers.

Based on previous experiences with coastal fisheries development projects, the main task will be in establishing a fishery that both works for villagers and is commercially viable for export markets. Such a tuna fishery has never existed in Solomon Island before, but it has existed in the Maldives.

The Maldives Model

The Maldives has had an artisanal pole and line skipjack fishery for hundreds of years, and industrial purse seine vessels have never been permitted to fish in their vast maritime zone. The Japanese Marubeni Corporation started buying tuna from the Maldives for canning in the 1970s, and a joint-venture cannery was established on the island of Felivaru in 1978. During the 1980s when fish prices were turbulent, the Japanese investors left the Maldives, after which state-owned enterprises conducted all the trading in cannery and frozen tuna, and ran the cannery. From 2003, private investment was allowed, but the majority of trading and processing of tuna is still done by state-owned companies. For social welfare reasons, the state-owned fish buying company has paid fishers a fixed price for their tuna, even during 1999-2001 when world tuna prices collapsed.⁵⁵

The Maldives vessels are the same basic design as have been used for centuries, although since the 1970s they have been modernised to include engines, fiberglass construction, and modern navigational and communication equipment. Another technological innovation was anchored FADs, introduced in the 1980s. Now around half of the catch is taken around FADs. The use of FADs and communication among the fleet while at sea has reduced the amount of time and fuel spent searching for schools. Production costs have been low enough to compete against purse seine fisheries. Production boomed in the mid-2000s when the demand for socially responsibly sourced tuna picked up. Until the mid-2000s the vessels used only the pole and line method, targeting skipjack and yellowfin. Now, however, more than half of the artisanal fleet also uses handline, troll and/or longline methods, and targets a wider range of species. Catches are split among cannery sales, high value sashimi export markets, and local fresh markets, including the tourism industry.⁵⁶

The Maldives government has recently developed a formal management plan for the tuna and the bait fisheries. The fisheries are openly accessible to local artisanal fishers. The resources have been protected by a policy of not allowing purse seining or gillnetting in the Maldives Exclusive Economic Zone (EEZ), and previously only allowing industrial longline vessels to operate in the zone 75-200 nautical miles out from the coast. The area inside 75nm is reserved for the artisanal fishery. As the handline sector has expanded, all foreign longline and other industrial fishing operations have been banned in the entire EEZ. The artisanal pole and line and handline tuna fishery was certified by the Marine Stewardship Council as sustainable in 2012.

Lessons from the Maldives Model

What lessons about commercial viability might a Solomon Islands artisanal pole and line fishery take from the Maldives experience? A key point is that Maldives has no industrial scale fisheries competing in the same fishing grounds as the artisanal fleet. The Solomon Islands has a comparable protection of resources, in that the Main Group Archipelago (MGA) area has been protected from heavy fishing pressure through a policy of only allowing domestic companies to operate in the MGA. Until the late 1990s that meant pole and line fishing was the only industrial fishing in the MGA, since then NFD's fleet of five small purse seine vessels have also been operating in the MGA.

Another point is the mix of gear type and markets used by the fleet, which enables them to take advantage of wherever the prices are best, and to sell the whole of their catch. The FFA projects is exploring the option that Solomon Islands' artisanal vessels could pole and line for skipjack for canning on FADs in the early morning, and then continue fishing with handlines for sashimi tunas later in the day. Now that NFD has a fresh and frozen exports department, an artisanal fishery could also benefit from this additional market option. Solomon Islands does not have a large tourism sector, but urban areas such as Noro and Gizo constitute useful local markets to dovetail with export markets.

A third important lesson from the Maldives model is that the participation of villagers has been secured by a fixed fish price from the state-owned fish buying company. Without that, villagers could not have sustained their operations when global prices dipped below the costs of production, and it is difficult to maintain a position in the market if production ceases for periods of time. In the Pacific, state ownership of fishing and fish buying entities in the past is widely seen to have been a failure, and it is unfeasible to propose government subsidisation of fish prices to support the development of an artisanal fishery. There are, however, other solutions, including Fair Trade. The Fair Trade mode of operation has recently expanded into aquaculture shrimp. Fair Trade USA is currently working on a wild-catch fisheries standard that could be applied to artisanal tuna fisheries.

Fair Trade Certification for Artisanal Tuna Fisheries in the Pacific

The Fair Trade Model ⁵⁷

Fair Trade certification brands or products are for consumers who want to support developing country producers in ways that go beyond normal commercial trading relationships. One of the key features of the model is that in a Fair Trade purchasing contract the producer is guaranteed a minimum price in a long-term contract, and if market prices fall the producer does not have to take a price so low their livelihood is endangered. Another feature is that Fair Trade allocates a percentage of sales to be used for community development projects in producing areas. Communities supplying Fair Trade products, for their part, must adhere to International Labour Organization standards and implement agreed community development plans.

Fair Trade certification requires producers to be organised into a trading cooperative with democratic decision-making processes for working out the strategy regarding sales of fish to processors and retailers, and how to use community development funds. The fishing vessels would be separate businesses to the cooperative. The actual trading of the fish to the processor and on to the buyer would be done by a trained and experienced professional seafood trader contracted for the purpose.

Several things are necessary for the Fair Trade model to work. A long-term contract with a buyer with a pre-agreed price would be needed. Processors would have to produce to buyer standards (existing canneries in Solomon Islands and Papua New Guinea already produce to similar standards). Artisanal vessels would also have to produce to the agreed standards. Traceability will be necessary to assure retailers and consumers that the product they buy is indeed produced according to Fair Trade criteria. To meet the quantity requirements for an ongoing Fair Trade contract, fish would have to be sourced from artisanal fisheries across several countries, and include product also from suitable industrial fisheries, such as NFD's existing pole and line operation. Partnership with a multinational tuna trading company is desirable for shipping fish from fishing vessels to processors and on to buyers.

If a Fair Trade standard for wild-catch fisheries is established, and if artisanal fisheries such as the planned one in Solomon Islands are certified, that would solve one of the main issues for establishing and maintaining village-based fisheries supplying export markets – a stable price not subject to fluctuating below a workable level. The community development angle is also likely to be attractive to participating communities. It would also be possible to arrange pre-production finance in the contract, to help with setting up the fishery.⁵⁸

The Fair Trade label has good consumer recognition in many key markets. One of the potential problems for pole and line tuna in the environmentally sustainable section of the market is its juxtaposition with 'FAD-free' purse seine tuna. Pacifical, a global marketing company jointly set up by the PNA countries in 2011, secured MSC certification for purse seine fisheries operating without the use of FADs (thus minimising bycatch) in 2011. Once this product is available for retail sale, demand for pole and line tuna may decrease unless an alternative marketing edge for these products is developed. Fair Trade certification may thus help distinguish pole and line artisanal tuna fisheries from industrially caught FAD-free purse seine-caught product, as being socially responsible in a variety of ways. Fair Trade certification may also help establish the price premium that will be necessary for this product. It is not yet clear what the production costs of artisanal pole and line tuna from the Pacific will be, but even if it matches the costs of NFD's medium-scale industrial method, it will still need an addition price premium to cover the costs of the price guarantee and community projects under Fair Trade.⁵⁹

Meeting Standards

The important markets for pole and line and artisanal fisheries are those with price premiums for environmentally sustainable and socially responsible product, and the EU with its current tariff advantage for Solomon Islands product. In order to benefit from these high value export markets a range of standards must be met, and be recognised as being met. Many of these standards must be met and reported on by companies themselves, but some are the responsibility of government. EU import requirements, for example, have stringent food safety and quality standards that must be met by producers and processors, and be monitored by an EU-recognised Competent Authority; in Solomon Islands, the Ministry of Health. In recent years the EU has also required minimum standards of fishery management to ensure illegally caught fish is not entering supply chains destined for the EU, which must be met by the Solomon Islands Ministry of Fisheries and Marine Resources.



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It is important that credible systems for reporting on ecological conservation and social equity are in place for Solomon Islands tuna to succeed in the environmentally sustainable and socially responsible markets. The marketing of Solomon Islands product could be damaged by rumours about environmentally unsustainable fishing practices, bad working conditions on vessels or in processing plants, grassroots opposition to operations or pollution from processing plants. The tuna catches of industrial fisheries are monitored and reported to the WCPFC, but most of the other issues are not covered by government. Robust and transparent processes for monitoring and reporting on social responsibility and environmental sustainability factors are needed to mitigate the reputational risks from such rumours.

Recommendations Arising from the Pole and Line Case Studies

1. Develop fisheries management and development policies that protect the resource and favour smaller scale and locally owned fisheries.

- a. Exclude large-scale and destructive vessels from national waters or parts thereof.
 - i. Reserve inshore and archipelagic areas for artisanal fisheries.
- b. Develop in close consultation with relevant communities workable systems for managing (licensing, monitoring, regulating, reporting) artisanal fisheries.
- c. Develop independent, transparent and robust systems for regulation, monitoring, consultation and reporting of environmental and social impacts around tuna fishing and processing.
 - i. Develop traceability systems for robust social and environmental responsibility standards.
 - ii. Develop thorough and ongoing community consultation, including in coastal villages, to improve local participation in opportunities arising from tuna industries, and work through complexities around businesses operating in village environments, including customary tenure.
- d. Alleviate unfavourable cost structures for domestic fisheries businesses through, for example:
 - i. Taxation reform.
 - ii. Setting fisheries access costs higher for distant water than local vessels.
- e. Where there are trade advantages for exports to the EU, ensure Competent Authority status in food safety and prevention of illegal fishing.

2. Support business development for Pacific Islander investment in tuna fisheries.

- a. Develop a human resources policy for management and investment in global supply chain businesses, and in fishing as a commercial business. This could involve:
 - i. Targeting school leavers with relevant tertiary education scholarships.
 - ii. Internships in progressive international seafood trading companies.
 - iii. Schemes for developing business skills and commercial track record for aspiring fishing vessel owner-operators.
- b. Develop business plans for artisanal fisheries supplying export markets, including the Fair Trade model, and support fisheries where the business seems viable. Support could include:
 - i. Exploring models for trading cooperatives to coordinate marketing of artisanal fishing fleets, including for Fair Trade.
 - ii. Enabling access to supply chains for high value export markets.
 - iii. Training (see point c below) and information services.
- c. Develop ongoing systems of training for artisanal fisheries in areas such as food safety and book keeping, utilising regional organisations and businesses with interests in the success of artisanal fisheries. For example:
 - i. SPC training programs on food safety and quality for small-scale fisheries.
 - ii. Seafood exporting companies hosting training sessions for artisanal fishers supplying them.

3. Further increase public awareness about environmentally sustainable and socially responsible tuna fisheries to build and sustain market demand for pole and line, handline and artisanal tuna.

Case Study: Longline Fishing For Albacore in Fiji



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Fiji's industrial tuna fisheries pre-date those of the Solomon Islands. From the 1950s Japanese longline fishing used a port the island of Ovalau as a transshipment base. The Fijian government moved into pole and line fishing in the early 1970s, building a fleet of vessels and domestic catching capacity that continued throughout the 1980s. Japanese investor C. Itoh established the Pafco cannery at Levuka in the early 1970s, but left during the 1980s, and since then the cannery has been government owned. The cannery was the major buyer for catch from the local pole and line fleet. In the 1990s the cannery entered into an arrangement with the major US brand Bumble Bee to process mainly albacore, so purchases from the pole and line fleet decreased and the fleet closed down.

Domestic Fijian longline fisheries started in the late 1980s when monofilament line technology and smaller longliners of less than 60 GRT were introduced to the region. A devaluation in the Fijian dollar encouraged exports, and the start of direct passenger flights to destinations with sashimi markets, such as Japan, provided further impetus for the industry. At this time prices for sashimi were high and the fishery was very profitable.⁶⁰ Fiji Fish, owned by local entrepreneur Graeme Southwick, was soon followed by Solander (Pacific), a local branch of a New Zealand fishing company. Chinese

longline vessels started operating in Fiji in the 1990s, some of which are based locally and licensed to fish in Fiji's EEZ. A group of larger Taiwanese and Chinese longline vessels are based in Fiji but only licensed to fish on the high seas or in other EEZs.⁶¹ In 2011, 67 vessels were licensed to fish in Fiji and 71 were based in Fiji to fish in the high seas and elsewhere.⁶²

Due to the nature of the fishery, Fiji's longline tuna vessels catch a range of types of tuna, which need to be sold in different markets. Yellowfin, bigeye and, more recently, albacore of a sufficiently high grade to sell in overseas sashimi markets is air freighted, or frozen to ultra-low temperatures and shipped to export markets such as Japan.⁶³ Some slightly less high quality fish is processed into tuna loins, steaks or fillets, and also exported. A portion of the catch suitable for fresh consumption is sold to domestic fish markets, including for the tourism industry. One industry source estimated that 80 per cent of his company's catch is sashimi and fresh.⁶⁴ Lower grade albacore is sold for canning, including to Pafco. While sashimi exports are the highest value part of the catch, each of these markets is important to the overall viability of the fishery, enabling the whole catch to be sold.

Overfishing and fisheries management failures have meant the catch per unit of effort (CPUE) for bigeye and yellowfin has declined since the early 2000s, and more recently some industry participants have reported declines in albacore.⁶⁵ Rising fuel prices, falling sashimi prices in Japan and declining catches of the highest value sashimi portion of the catch have meant that, even with record high prices for cannery tuna, the profitability of the fishery as a whole has reduced from the early 2000s.

To promote local participation and development, indigenous Fijians are provided preferential licensing conditions, with 20 longline licenses reserved for indigenous Fijians under the 2002 Tuna Management and Development Plan. Licensing details may change somewhat, but the policy of promoting indigenous ownership of longline vessels has continued for some years.

While there were quite a few indigenous fishers skilled at catching tuna on industrial vessels, none had experience owning and running a vessel as a commercial concern and none had the capital (or access to commercial credit) for buying a vessel. The Ministry of Fisheries and Forest established a Seed Capital Assistance Revolving Fund, whereby the Ministry put up one third of the required finance, and the Fiji Development Bank the other two thirds, with fishers putting assets such as their houses up as collateral for the loans. The scheme, however, started just at the point when regional overfishing of the sashimi species yellowfin and bigeye started to take effect in falling catch rates of the highest value portion of the catch, fuel costs started to skyrocket and it was very difficult to turn a profit. Furthermore, the scheme only made around 30 per cent of the cost of a good vessel available so participants made do with inefficient old vessels with high maintenance costs that proved impossible to run profitably.⁶⁶ Several of the indigenous vessel owners went bankrupt. Others teamed up with Chinese investors.

The program was based on the assumption that skilled fishers could become skilled fishing entrepreneurs. This idea is not supported by empirical evidence; most tuna businesspeople in the Pacific had track records in fishing businesses or other businesses before becoming tuna vessel owners. Business skills are quite distinct from fishing skills.⁶⁷ According to interviewees, if there were to be another effort to promote indigenous vessel ownership there would need to be more focus on the business training and experience, including possibly internships and partnerships with existing commercial operators.

Locally Owned

'Fiji Fishing Vessels' under section 2 of the Fisheries Act (1991) are vessels registered in Fiji or operating in Fiji and wholly owned by a Fijian citizen or by a company incorporated in Fiji and at least 30% owned by a Fijian citizen. The fishery has been reserved exclusively for Fijian fishing vessels under this definition, with no distant water longline fishing licensed to operate in the Fijian EEZ. Official interviewees see this as a good model for other Pacific Island countries.

The Fijian longline industry is made up of two clear interest groups. One is the veterans of the industry, particularly Fiji Fish and Solander, represented by the Fiji Tuna Boat Owners Association (FTBOA). The other, the Fiji Offshore Fisheries Association (FOFA), is made up of companies owned by ethnic Chinese investors (some of whom have Fijian citizenship), such as Golden Ocean and Hangton Pacific. The vessels of both groups are defined as 'domestic' under the Fisheries Act but the FTBOA see themselves as Fiji's 'real' domestic fleet. They have locally flagged vessels and employ mostly Fijian nationals (see below for details). They have shore bases and conduct their commerce through the Fijian economy. Their key complaint about Chinese investors in Fiji's longline fishery is that these foreign investors have access to more favourable financial arrangements, including subsidies.⁶⁸

Subsidies for fisheries are widespread internationally. Many developing countries provide small subsidies for fuel and or ice-making to support livelihoods and food production, but some of the largest subsidies are provided by the governments of major fishing powers. Japan, Korea, Taiwan and China support their fishing industries in various ways from boat building to access fees.⁶⁹ According to a recent WWF report, Chinese flagged tuna fishing vessels, even under charter, receive a rebate when the price they pay for fuel is over USD760 per tonne, and the Chinese government pays up to half of their license fees when fishing in Pacific Island countries. Chinese vessels that reflag to a Pacific Island country reportedly receive an export rebate on the cost of building the vessel.⁷⁰ The FTBOA members feel that, because of the subsidies, their vessels are not on a 'level playing field' and they cannot match their competitors' prices.⁷¹



Table 3: Fiji's Domestic Longline Vessel Numbers 2002-2012

	Fiji Fish	Solander	Golden Ocean	Whole Domestic Fleet
2002	23	11	-	96
2005	15 (25) ^a	10	-	103
2009	-	-	5 (21)	92
2012	8 (34)	13 ^b	4 (22)	- ^c

- the number is unknown.

a The number of vessels the company reports as owning are on the left, with the number of vessels the company charters in parentheses. Presumably some of Fiji Fish's 23 vessels in 2002 were chartered, but this was not noted in the source material.

b Of these vessels, 11 are owned by Solander (Pacific) and two by Solander Viti.

c 70 vessels are licensed by the government to fish in Fijian waters in 2012. The total fleet is this number plus vessels flagged and based in Fiji but which fish elsewhere.

Sources: Gillett 2003; Fiji government list of licenses issued 2012; industry interviews 2005, 2009, 2012; WCPFC reports 2010, 2012.⁷⁴



The government's position is to support international investors working in partnership with Fijians to tap into fishery resources in the region, while ensuring all Fiji flagged vessels (including those connected to overseas investment) comply with applicable conservation and management measures.⁷² FOFA, comprising about 70 per cent of the industry, has a different perspective on what is important about domestic industry development in Fiji's longline fishery. It argues that an open investment policy encourages a stronger industry and thus more benefits for Fiji as a whole. Enabling the Fijian longline industry to expand creates more value-added processing on shore, more employment and more export revenue. Tuna is now Fiji's second biggest export earner after tourism, and has been an important area of growth with the hole in the economy left by the declining sugar industry. FOFA argues that the financial markets in Pacific Island countries can never compete with those of bigger countries so it makes sense to seek finance offshore where possible: the important thing is that companies provide economic development.⁷³

The three companies listed in Table 3 are the main domestic companies. They buy the catch from their chartered vessels to process and market, and also provide maintenance and procurement services for the chartered vessels. The government regularly monitors the chartering arrangements to ensure there is no element of 'foreign control'. Fiji Fish has worked with Taiwanese chartered vessels, while Golden Ocean's chartered vessels are Chinese.

Domestic ownership of longline vessels is viable in Fiji. According to industry sources, you can maintain and even build longliners in Fiji and a good vessel of the type commonly used in Fiji costs around USD1 million.⁷⁵ However, the indigenisation program trialled in the mid-2000s shows the pitfalls of policies pushing domestic ownership without careful calibration to commercial conditions. Furthermore, all interviewees agreed that in some cases the local component of ownership is meaningless and that some vessels are really owned by overseas investors. This corroborates the Canadian shrimp case study (see page 22), that when it is advantageous for vessel ownership to remain overseas, companies will work around legal domestic ownership requirements. Technically there is some measure of Fijian ownership in all of the companies, but the extent varies to which this ownership translates to benefits for Fijian society. It would be very difficult, even impossible, for the Fijian government to force companies to give accurate information about their real ownership arrangements, or to force companies to have real ownership vested in citizens.

What the government can do is structure the regulatory environment to encourage desired kinds of development (environmentally responsible, providing local jobs and development opportunities) and deny access to the resource by companies that do not do these things. Fiji Fish, Solander and Golden Ocean generate quite a lot of employment. Other companies reportedly employ very few Fijians, with their contribution to the Fijian economy consisting in basing their vessels locally and landing their catch in Fiji for processing and export.

Employment

Like the Solomon Islands, Fiji's history of domestic fisheries development that enabled large numbers of nationals to gain experience and qualifications in industrial tuna fishing. This is reflected in the fairly high rates of Fijian crew, including senior crew, employed by some of the domestic companies (see Table 4). According to company owner Grahame Southwick, the vessels Fiji Fish owned are fully crewed by Fijians, except for the captains, who are Korean. On the chartered vessels half of the crew are Fijian, while the rest are a mixture of Indonesian, Filipino and mainland Chinese. On Solander vessels, most of the captains and chief engineers are expatriates, but the rest of the crew are local. On the Solander shore base there is only one expatriate employee.

According to Golden Ocean, they employ about five or six Fijians on every vessel. All three companies said they employed Fijians rather than expatriates because it was economical to do so, not because they were required to do so by government regulations.⁷⁶

A mandatory crewing requirement would be one way to bring more of the benefits from fishing into the Fijian economy, boosting employment in a country with serious unemployment problems. The Fijian government does not have any regulations about hiring national crew, believing such a policy could affect commercial viability, so instead informally encourages companies to hire national crew where possible.⁷⁷ Reportedly some companies hire very few or no Fijian crew. Since Fiji Fish, Solander and Golden Ocean do find it commercially viable to use Fijian crew, and there are existing educational institutions that could upgrade maritime training, it seems regulations or incentives for localising crew could be pursued.

Table 4: Employment in Fiji's Tuna Industry 2002-2012

	No. of Jobs	Fiji Fish	Solander	Golden Ocean	Whole Industry
2002	Vessels	300	109	-	893
	Shore	200	33	-	1496
2005/6	Vessels	370	100	-	330
	Shore	150	30	-	2200
2008	Vessels	-	-	-	150
	Shore	-	-	-	1250
2012	Vessels	300	300	145	-
	Shore	100	90	150	-

Sources: Gillett 2003, 2008; industry interviews 2005, 2012.

- the number is unknown.

Localising Crew – Lessons from Canada's Northern Shrimp Fishery

In 1980, with the aim of domesticating Canada's northern shrimp fishery, government regulations required all vessels flagged in Canada to be 100 per cent domestically owned and crewed. Local crewing policies were implemented through fisheries licensing and regulatory agencies. However, it proved impossible to comply immediately, and senior levels of crew were still not entirely Canadian for a decade. The first attempt to recruit indigenous crew failed because the men they targeted were less interested in and able to adjust to life on board. Indigenous crew tended not to rise above basic levels because they spent less time at sea as they chose to do other things in addition to fishing, and there was a disinclination to have hierarchical relations over other indigenous crew. Latterly, recruiters targeted school leavers and provided orientation and training, and had better success rates.

As the Canadian example illustrates, local crewing policies must be based on a thorough and realistic understanding of the labour market. Building a skilled labour force takes time - perhaps decades - and a determined government policy.⁷⁸ Senior levels may require considerable training. There is a worldwide shortage of marine engineers, so some senior positions may be held by foreigners indefinitely. Requiring companies to demonstrate to agencies responsible for labour policies and immigration that each and every expatriate employee is necessary is an incentive to transition to local crews.

These lessons from the Canadian shrimp fishery are relevant for Pacific fisheries seeking to shift towards local crewing. A successful transition to local crewing could take many years,⁷⁹ however, Fijians have been crewing tuna fishing vessels for some decades now. Regulations by several different government departments may be needed to implement crewing requirements. It could be conducted through vessel licensing, and/or through the Maritime Safety Authority, which also has authority over crewing. National training and maritime code standards would need to be brought in line with international standards, especially for the training of senior crew. Training would also be needed to prepare junior crew for the pace of work and food safety requirements on vessels.

Factors Affecting Domestic Development

Fisheries Management

Since the 2002 Tuna Management and Development Plan was implemented, a mainstay of Fiji's fisheries management has been to reserve the EEZ fishery for vessels defined as Fijian and to deny access to it by distant water longline fleets. This measure, however, has not effectively conserved the resource to optimum economic levels.⁸⁰

Since the early 2000s, FTBOA has been speaking out about declining catches in the valuable sashimi species (bigeye and yellowfin) damaging their profitability, and more recently have been sounding alarms about albacore.⁸¹ Several industry sources noted that declining catches have been a serious impediment to domestic development for some years. Some of the stock declines are caused by fishing outside Fiji, including overfishing of juvenile bigeye and yellowfin by purse seine fleets setting on FADs, but some industry stakeholders assert that the fisheries administration could also do more within Fijian waters. FTBOA thinks the number of domestic licenses should be capped at around 50, and that the non-licensed vessels based in Fiji that fish in the high seas should be banned because in reality they are competing for the same stocks as are caught within the EEZ. Fiji and other southern longline countries could follow the lead of the Parties to the Nauru Agreement: through license conditions, they have required purse seine vessels to bring their fishing into EEZs where it is easier to regulate and monitor their activities, and disallowed transshipment at sea.

According to industry stakeholders, the new Tuna Management and Development Plan has as one of its key goals to contribute to Fiji's economy through growth in onshore processing and offshore fisheries. Industry sources noted, however, that there is already excess vessel capacity and that will need to be addressed before the domestic industry can grow. Indeed any growth will have to be innovative, given that catches cannot expand. Other industry sources corroborated the hope that the new Plan will protect sharks. Exports to key markets in the EU and USA threaten to be derailed by concerns that the longline industry may be harming sharks, and rely on government commitments to manage this more effectively.



Fiji's albacore longline fishery was certified by the MSC in 2012. For exports to the EU, the Fijian government has to be recognised as a Competent Authority to ensure no illegally caught fish enters supply chains destined for the EU. Fiji has established such a competent authority and has been granted access to export seafood to EU markets.

Costs: Domestic Versus Foreign-Owned

Governments can encourage local ownership of fishing by ensuring the costs of domestic operators are favourable (or at least are not unfavourable) compared to the costs of foreign-owned and distant water vessels. Interviewees from the FTBOA stressed that, in the current environment, domestic operators who source most of their inputs in the Fijian economy are disadvantaged compared to distant water vessels and locally based companies that are able to source inputs in overseas markets. The most glaring examples are subsidised vessels and fuel. Fuel in Fiji is very expensive. Compared to bigger fishing centres where fishing gear is sold locally, Fijian companies must import much of their gear, adding freight costs to the cost of the gear.

The taxation system in Fiji and most other Pacific Island countries adds to the costs of domestic operators because of the duties on many inputs. To try to minimise the impact of the duties, there is a fisheries taxation incentives package involving rebates. For example, the fuel rebate means longline companies only pay FJD0.02 per litre of duty on top of the fuel price (instead of FJD0.18). Bait is duty free. Fishing gear and vessel parts have partial duty rebates.⁸² Reviews of fisheries taxation in Pacific Island countries, however, recommend significant changes, with no taxes or duties on raw materials, intermediate inputs, capital goods or business service inputs on production. These reviews recommended that to encourage production, it should not be taxed, while consumption, income and profits should be taxed.⁸³

Recommendations Arising From the Case Study

1. Develop fisheries management and development policies that protect the resource and favour smaller scale and locally owned fisheries.

- a. Give fisheries access only to smaller scale and locally owned vessels (not large-scale or subsidised distant water vessels).
- b. Restrict catches to levels that are environmentally sustainable and economically optimal including through:
 - i. Active campaigning for conservation measures in the Western and Central Pacific Fisheries Commission.
 - ii. Limiting vessel license numbers.
 - iii. Requiring vessels to avoid fishing in the high seas, which are harder to regulate and monitor, and prone to illegal fishing.
 - iv. Ban transshipment at sea by the domestic fleet and vessels contributing fish to processing.
- c. Alleviate unfavourable cost structures for domestic fisheries businesses through, for example:
 - i. Campaign in the United Nations Commission on Sustainable Development and in the World Trade Organization against subsidies for boat building and fuel for fishing in the industrial sector.
 - ii. Taxation reform.
 - iii. Setting fisheries access costs higher for distant water than local vessels.
- d. Where trade advantages exist for exports to the EU, ensure governments have Competent Authority status in food safety and prevention of illegal fishing.

2. Support business development for Pacific Islander investment in tuna fisheries

- a. Boost indigenous participation in ownership and management in the longline fishery through measures such as:
 - i. Establish training and internship programs on the business of tuna fishing.
 - ii. Establish schemes for aspiring indigenous owner/operators to invest in lower cost fisheries, to establish commercial track records, before seeking to invest in tuna boats.
- b. Increase local benefits from the longline fishery by:
 - i. Introducing mandatory crewing requirements.
 - ii. Investigating commercially viable ways of requiring vessels to offload to local processors.
 - iii. Exploring regional collaboration to develop opportunities for locally owned small-scale fisheries, using as inspiration the collaboration achieved by the Parties to the Nauru Agreement and ideas coming from the Forum Fisheries Agency's Regional Economic Integration program.

A Business Model for Locally Owned and Operated Small-Scale Fisheries in the Pacific



Dr Hannah Parris and Greenpeace

The key message from this report is that small-scale and even artisanal pole and line tuna fisheries present a real opportunity for Pacific coastal states to develop a profitable, environmentally sustainable and socially responsible domestic fishery sector.

For pole and line, handline, or other local sustainable fleet to become operational, it needs to be a viable and long term business able to conduct fishing activities profitably and manage the risks associated with the tuna industry. This section provides ideas for the structural and operating model of a pole and line and other small-scale local tuna fishery.

Philipson (2008) concludes that a successful business venture requires three things: raw material production; product conversion and marketing; and intangible factors such as managerial skill and the overall business enabling environment. A business model sets out how an entrepreneur will bring these successful elements together, and importantly, how he or she will manage the risks involved in the production process.⁸⁴

This report has provided an overview of the components of the tuna industry, the way it operates, examples of 'lessons learned' and a discussion of the trade considerations into major markets. Each component can be thought of as critical in understanding the context, opportunities and challenges of developing a local sustainable fishing based enterprise.

There is already a large amount of processing capacity in the Pacific. The economics of the industry place considerable pressure on producers to reach economies of scale. In addition, producers face complex and expensive regulatory processes to qualify for exporting to the EU – only Solomon Islands, Papua New Guinea (PNG) and Fiji have suitable arrangements in place.⁸⁵ This suggests that rather than 'reinventing' the wheel, the pole and line/other fishing business should utilise existing processing capacity within the region. The fishing business should work with, or partner with, companies that can deliver networks, information, technical and financial skills that may be lacking in the Pacific.

The history of business failures in the Pacific underscores the importance of securing well trained, professional and experienced managers to operate the pole and line business. Governments have a critical role in developing and 'enabling' a suitable business environment for local or private enterprise in sustainable tuna fishing businesses.



Principles of a Pole and Line/Local Sustainable Small-scale Fishing Business Model

The development of a business model needs to be underpinned by two principles. First, small-scale tuna fishing businesses need to be economically viable and not dependent over the long term on government subsidies, preferential treatment, tariffs or donor assistance. That is, the business model needs to make a net positive contribution to the communities within which it operates and to the national economies of the country involved. The primary purpose is to make a viable, sustainable livelihood for participants within the context of an ecologically sustainable fishery.

Second, the business model needs to work within the geographical, economic, biological, political, cultural and human resource circumstances of a Pacific fishery. Key considerations include:

- Conducting business in the Pacific is expensive, e.g. due to geographical distance from markets
- Business management expertise is quite limited
- The economics of the industry lean towards centralisation of facilities.
- The lack of an enabling business environment and general lack of support from government.

Assumptions Underpinning the Pole and Line Business Model

This business model has six assumptions:

- There is a reliable, robust demand for sustainably caught Pacific tuna in the EU and elsewhere, such as Australia, New Zealand and North America.
- There are foreign buyers willing to enter into long-term contracts for small-scale tuna fisheries.
- Pole and line fisheries (both bait and tuna) are conducted sustainably and the product is therefore able to attract a price premium, and that this premium is acceptable to end market consumers.
- Governments are willing to regulate fishing activities in waters suitable for pole and line fishing so that competition from large-scale fishing is removed (including for bait). This is especially important.
- There are fishers in the Pacific willing and able to engage in a pole and line fishery.

Summary of Business Model

The pole and line business model is proposed to consist of the following key components. A central trading company, a 'trading cooperative' is formed as a cooperative business jointly owned by pole and line vessel operators. The cooperative contracts both with pole and line vessels to fish and deliver catch to Pacific Island Country (PIC) based processing and with PIC based canneries to can the product at a suitable export standard. It also contracts with foreign buyers, negotiating over prices, delivery dates and quality. Prices comprise two elements:

- A "fair trade" price that covers the cost of production and provides a viable, living wage.
- A "fair trade" premium per unit which is placed in a community development fund. The foreign buyer markets canned tuna products to end markets.

An overview of the roles and risks of each stakeholder in the production process (the fishers, trading cooperative, PIC based canneries and overseas buyers) is set out in Table 5.

Governance Arrangements

The Trading Cooperative, jointly owned by the pole and line vessel owners, is the core component of the pole and line business model. It is responsible for the following functions:

- It enters into long run contracts with buyers for pole and line caught tuna at a specified price, quantity and quality.
- It establishes a network of EU registered and compliant pole and line fishing vessels, and enters into contracts for engaging the vessels in fishing activity on an 'as order' basis.
- It establishes a network of EU registered and compliant processing facilities, for example, in PNG and Solomon Islands (in the first instance) and enters into 'memorandum of understanding' (MOU) contracts to engage processing facilities on an 'as order' basis.
- Using the "fair trade" price as the starting point, it negotiates with fishers and processors contract rates for fishing and processing activities to be carried out on behalf of the Trading Cooperative.

- It manages the exporting of the finished product to the buyer.
- It manages the contractual payments between/to buyers, canneries and fishers.
- It manages appropriate quality control procedures along the production chain to ensure that the key values of 'sustainability' and 'fair' fisheries are maintained (e.g. implementing processes to ensure traceability of the tuna through the production process).

The trading cooperative is staffed by professional, full time and experienced managers with a high level of business skills. In the first instance, this may require the hiring of expatriate staff in key business management roles and/or work in conjunction with one of the major trading companies. But there would be the expectation that, within a certain timeframe, there would be locals understudying them in readiness to take over the helm. The Trading Cooperative should also seek to draw on skills of other similar establishments elsewhere in the world where pole and line fisheries are successfully run including in conjunction with existing pole and line development initiatives run by FFA.

The key advantage of this structure is that the trading cooperative undertakes the entrepreneurial and managerial activities on behalf of the fishers – allowing fishers to focus on fishing while also providing them with some collective bargaining power vis a vis processors and buyers. It also pools the managerial and entrepreneurial activities needed to undertake the marketing for individual pole and line businesses – thus helping to manage a major barrier to small-scale fisheries development in the region. Over time, the trading cooperative model will build local managerial and business capacity.

Within this model, the fishers are responsible for sourcing, owning and operating their fishing vessels as a separate business to the Trading Cooperative.

Making Product: How to Get Product to Market

Getting the canned tuna product to market requires the trading cooperative to have secured a long-term contract with a foreign buyer, for example one in the EU or US. If such a contract is unable to be secured, it is unlikely that this business model will work.

The process of delivering on this contract is as follows:

- The trading cooperative enters into contracts with owner/operator of PIC based pole and line vessels to fish on behalf of the Cooperative at a pre-agreed price. The pole and line vessel delivers this to the specified processors for processing.
- The trading cooperative contracts with PIC based processors to process tuna to the specific standards required for the buyer.
- The trading cooperative manages the export process of the canned/other product from the processor to the buyer.
- Depending on the nature of the final contracts agreed to between the buyers, trading cooperative, fishers and processors, payments for fishing and processing services are made upon the delivery of the product.

To reduce administrative costs, the trading cooperative could set up an MOU or equivalent legal contract with processors and fishers, setting out the broad framework of the contractual relationships between the stakeholders. This MOU would set out generalised conditions include prices paid, terms of contractual payments, terms of fishing activity or processing, quality standards, liability, default and any other requirement as needed by stakeholders.

One of the major risks for the trading cooperative is the need to meet minimum standards of quantity and quality in the final product in line with the demands of buyers. To manage the quality issue, the Trading Cooperative will need to limit its use of processors to those that are qualified and registered under the appropriate EU regulations for Hazard Analysis and Critical Control Point (HACCP) and for Illegal, Unreported and Unregulated fishing (IUU) detection. The PNG and Solomon Island canneries already meet these requirements.

To manage the risk of an inadequate quantity of fish to process, the trading cooperative can employ two strategies. The first is to develop a broad network of eligible pole and line vessels that could operate across the Pacific. Some pole and line vessels (particularly those considered 'artisanal') may only wish to fish on a part time basis, while others may fish full time. Localised environmental conditions may also affect the size of catches for any single vessel. By developing a broad network of vessels, the trading cooperative can spread the risks of low catches in any particular location. For example, if fishing was relatively poor in PNG, then the trading cooperative could contract for vessels to fish within the Solomon Islands EEZ for delivery to Soltai.

A second strategy would centre on keeping the initial contracts with the buyer and the processor at relatively low levels – towards the minimum quantity of acceptable amounts by both. Provisions in the contracts could allow for scaling up the amount of delivered product should catches be particularly good and the production process operating well. This allows both fishers and the canneries to 'opt-in/opt-out' of undertaking contract work for the cooperative – depending on their available capacity and (for artisanal fishers) the desire for additional work. It is envisaged that, for the canneries, contract processing for the Trading Cooperative is a relatively minor activity that can be used to fill gaps in capacity between processing for purse seine derived markets.

It is likely that the Trading Cooperative would need to work with some of the trading companies to facilitate the shipment of the finished product.



Contract and Pricing Strategies

The contract between the trading cooperative and the long term buyer based in the foreign country should aim to follow the fair trade model and have the following components:

- A negotiated price for the final canned tuna product based on a 'fair assessment' of reasonable returns to both fishers and canners. The price would cover the cost of production for fishers directly involved in the fishery and provide workers in the trading company, canneries and vessels with a living wage. A starting point for the fish component of the final price could be the Bangkok skipjack tuna price, which an experienced fisher indicated is sufficient to cover the costs of pole and line fishing under certain assumptions (Stone, pers. Com.). A small fair trade premium is paid per unit of product delivered. This additional payment is placed in a community development fund that is controlled and owned by the Trading Cooperative.
- Buyers are encouraged to pay upfront for the contracts, in order to supply working capital to the trading cooperative and to the vessels in fulfilling contracts.

Marketing and Promotional Activities

This business model assumes that all marketing activities to final consumers are the responsibility of the foreign buyer, not the trading cooperative. However, the point of difference for the pole and line products is that the tuna is caught in a fishery that is economically viable, environmentally sustainable and socially responsible.

The Trading Cooperative will need to ensure that the entire process is well documented, that quality management procedures are in place to actively control the risks within the production chain that may undermine sustainability and fair trade values, and that this is appropriately and actively communicated to end users. Potential risks that the trading cooperative may have to manage include:

- the use of FADs in pole and line fishing (to reduce fuel costs and compensate for localised depletion) leading to by-catch of juvenile bigeye tuna or yellowfin tuna
- the trading cooperative may contract a 'fair price' with the vessel owner, but the owner does not pay a 'fair price' wage to those people working the vessel
- the relatively fuel intensive nature of the pole and line fishery (due to the number of boats required) may increase the carbon footprint of the final product, unless this is carefully factored into the initial building of vessels, solar and wind technology can be used to increase fuel efficiency, or the fuel-intensive large-scale distant water fleets that it replaces can be taken into account
- the processing facilities are not employing workers on a fair basis
- the mixing of pole and line caught tuna with purse seine caught tuna in the processing facility.

Some of these risks can be managed through careful contract specification between the trading cooperative and the vessel owners (who, after all, own it) or through establishing a traceability system using the MSC or the EU IUU regulations as a template.



Financing

Finance for the cooperative could come from a number of sources. It is likely to include funding for monitoring and fine-tuning of the operation for an initial period of three to five years.

Seed money could also come from progressive industry sources (e.g. retailers, brands), potentially via an intermediary that seeks out environmental and socially responsible options for their customers.

Ongoing operations should be financed from a percentage of either sales or profit of the end product, as a condition in the supply agreement. Alternatively, operation costs could come from membership fees paid by fishers participating in the Cooperative. To engender a sense of ownership in the enterprise, fishers could make a small contribution to the trading cooperative, proportional to the volume of their catch, for its establishment and ongoing financing.

Community Development Funds

The purpose of community development funds is to provide a source of finance for projects that will be of benefit to the owners of the trading cooperative— either in their home communities, countries or as a group. Using internal democratic decision making processes, the Cooperative members would identify and select projects that support community development objectives. Potential uses of the money could include business management training, sustainability initiatives, the provision of essential services to coastal communities, seed funding for micro-credit schemes and other initiatives that support overall capacity for management and development of the enterprise.

Table 5: Key Components of the Pole and Line Business Model

Ownership Structure	Risks Managed by Owner	Benefits from Participation in Scheme
Trading Cooperative – all vessel boat owners participating in scheme	<ul style="list-style-type: none"> • Lack of buyers at suitable price • Contracts being unfulfilled due to quality or quantity problems in the supply chain • Insufficient capacity at canning facilities at right time and location leading to higher production costs (due to transport etc.), longer lead times or unfulfilled contracts 	
Pole and line vessel owners	<ul style="list-style-type: none"> • Contracts with trading cooperatives do not offer high enough prices to cover fluctuations in fuel and labour costs • Insufficient supplies of bait fish and/or tuna to meet contracts • Insufficient time spent under contract to cover operating and capital costs • Financing of vessel 	<ul style="list-style-type: none"> • Guaranteed market for catch at a guaranteed price • Price for tuna equal to or higher than market price • Ability to plan long term • Generates employment on vessel and in on-shore support roles • Pre-production finance potentially available through the fair trade contract
PIC based canneries	<ul style="list-style-type: none"> • Contracts with Trading Cooperative are not high enough to cover fluctuations in major cost items, e.g fuel and labour • Mismatch of timing between available catch from pole and line vessels and available capacity within the processing facility, leading to loss of opportunity to fulfil a processing contract with the Trading Cooperative • Potential costs associated with processing certified tuna, i.e. need to physically separate certified fish from non-certified fish 	<ul style="list-style-type: none"> • Some certainty over quantity of fish processed at a predetermined price • Capacity to plan longer term, based on those prices • Supports employment with the canneries • Pre-production finance potentially available through the fair trade contract
Fish Buyer	<ul style="list-style-type: none"> • Marketing and sale of higher cost product to consumers in price competitive market • Costs associated with pre-finance • Non-fulfilment of contracts by Trading Cooperative leading to loss of product in retail market 	<ul style="list-style-type: none"> • Supply of pole and line caught product at guaranteed price

Conclusions and Recommendations



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Although the Western and Central Pacific Ocean is the biggest tuna fishery in the world, most of the fishing has been done by foreign vessels and little benefit has accrued to Pacific Island communities. Tuna fisheries access fees have brought some revenue Pacific Island governments and partnerships with international firms with well-established supply chains have enabled the development of onshore processing facilities. But this has not meant significant improvement in ordinary people's lives.

Associated with the large-scale industrial model of tuna fisheries is a range of negative environmental impacts including overfishing, high fuel consumption, bycatch of threatened and vulnerable species and discarding unwanted fish at sea.

Fishing vessels are high tech and beyond the reach of local entrepreneurs to buy, and require large cash reserves to operate. This makes them unsuitable to build or maintain in Pacific Island countries, and makes it difficult for start-up investors from small island developing economies to participate in the industry. These kinds of fishing fleets have not employed large numbers of Pacific Islanders as crew.

Domestic tuna enterprises, on the other hand, have provided employment and an injection of cash to communities. Smaller scale tuna fishing boats are feasibly built, owned, operated and maintained within small-island developing coastal states. Having fishing vessels based locally creates multiplier effects in the economy through employment and other businesses needed to service and supply their operations. Human resources are developed through working and training in the industry. Small vessels that make short trips and enable crew to return home frequently are much more attractive to work on than large industrial vessels that may spend months or even years at sea before going in to port. Small-scale fishing methods employ more people per ton of fish caught.

Despite some smaller-scale locally owned industrial fleets operating in Pacific Island countries, the region's artisanal fleets targeting tuna remain limited compared to the resource available and generally do not supply tuna export markets. At various times, Pacific Island Governments have used government policy and programs to promote the development of small-scale and artisanal fisheries businesses. These have had mixed results. Previous efforts at developing a small-scale localised tuna fishery, however, were mostly state-owned and had commercial viability problems that have been well documented.

What remains however is an overwhelming urge for a structural adjustment from current fisheries operating model of coastal state as 'rent seekers' from the leasing of their tuna rights, toward a situation where coastal states, at all levels, are active owners and stakeholders within the tuna fisheries sector.

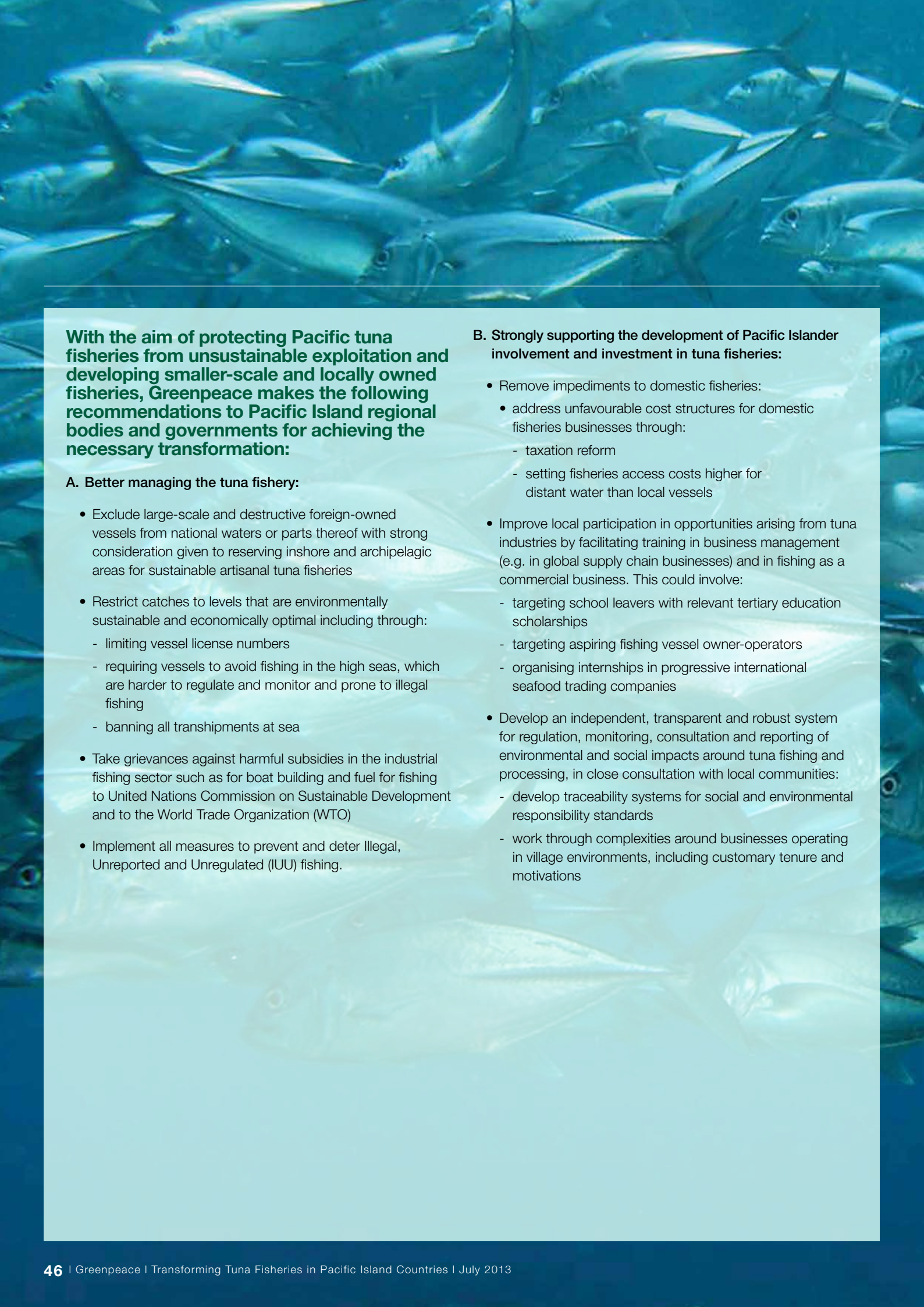
This report argues that building on the lessons of previous efforts, focusing on smaller-scale fishing vessels targeting high value markets for environmentally sustainable and socially responsible seafood, and with appropriate policy and other support from governments and regional organisations, commercially viable, locally owned businesses should now be possible.

However, partnerships with foreign firms will remain important for international market connections. Tuna markets, especially for canned tuna, are global and, in order to access the most valuable export markets, complex international trading and marketing networks are crucial. The local ownership described as being the most beneficial for Pacific tuna fisheries in this report, therefore, is envisaged as being in close collaboration with existing and new international operators and investors.

The important markets for pole and line and artisanal fisheries are those with price premiums for environmentally sustainable and socially responsible products, sought by consumers who want to support developing country producers in ways that go beyond normal commercial trading relationships. These products will need to be able to meet health and chain of custody standards in order to gain access to these markets. One of the key features of the Fair Trade model is that the producer is guaranteed a minimum price in a long-term contract, and if market prices fall the producer does not have to take a price so low their livelihood is endangered. Another feature is that Fair Trade allocates a price premium percentage of sales to be used for community development projects in producing areas. It will be crucial to pursue Fair Trade certification for wild-catch fisheries when it becomes available. In the meantime, small scale fisheries can pursue MSC certification on the grounds of environmental sustainability.

Government support is crucial for ensuring that this vision becomes reality. In particular, governments must develop fisheries management and social policies that protect the resource and favour smaller scale and locally owned fisheries. The report reiterates the need for coastal states, having vested interests in the long-term health of their resources, to be managing their exploitation sustainably in concert with regional organisations such as the FFA and SPC. There are already some useful regional frameworks, such as the PNA and the Nauru Agreement that could be built on.

Governments must also back business development for Pacific Islander investment in tuna fisheries. This may mean implementing a human resources development policy and long-term investment in training and education for fishing jobs, managerial and other business functions. Artisanal fisheries supplying export markets, including those with Fair Trade certification, need particular government policy attention and support to encourage development of tuna fisheries at all levels, including at the community level.



With the aim of protecting Pacific tuna fisheries from unsustainable exploitation and developing smaller-scale and locally owned fisheries, Greenpeace makes the following recommendations to Pacific Island regional bodies and governments for achieving the necessary transformation:

A. Better managing the tuna fishery:

- Exclude large-scale and destructive foreign-owned vessels from national waters or parts thereof with strong consideration given to reserving inshore and archipelagic areas for sustainable artisanal tuna fisheries
- Restrict catches to levels that are environmentally sustainable and economically optimal including through:
 - limiting vessel license numbers
 - requiring vessels to avoid fishing in the high seas, which are harder to regulate and monitor and prone to illegal fishing
 - banning all transshipments at sea
- Take grievances against harmful subsidies in the industrial fishing sector such as for boat building and fuel for fishing to United Nations Commission on Sustainable Development and to the World Trade Organization (WTO)
- Implement all measures to prevent and deter Illegal, Unreported and Unregulated (IUU) fishing.

B. Strongly supporting the development of Pacific Islander involvement and investment in tuna fisheries:

- Remove impediments to domestic fisheries:
 - address unfavourable cost structures for domestic fisheries businesses through:
 - taxation reform
 - setting fisheries access costs higher for distant water than local vessels
- Improve local participation in opportunities arising from tuna industries by facilitating training in business management (e.g. in global supply chain businesses) and in fishing as a commercial business. This could involve:
 - targeting school leavers with relevant tertiary education scholarships
 - targeting aspiring fishing vessel owner-operators
 - organising internships in progressive international seafood trading companies
- Develop an independent, transparent and robust system for regulation, monitoring, consultation and reporting of environmental and social impacts around tuna fishing and processing, in close consultation with local communities:
 - develop traceability systems for social and environmental responsibility standards
 - work through complexities around businesses operating in village environments, including customary tenure and motivations

- Increase local benefits from the longline fishery by:
 - introducing mandatory crewing requirements
 - investigating commercially viable ways of requiring vessels to offload to local processors
 - exploring regional collaboration to develop opportunities for locally owned small-scale fisheries such as:
 - For example, Parties to the Nauru Agreement (PNA) cross border investment initiatives
- Ensure that domestic fleets meet the highest standard regarding bycatch mitigation and avoidance
- Ensure all measures are taken to ensure food safety requirements
- Support the development and marketing effort of local pole & line operators with demonstrated positive impacts on environmental sustainability and local communities by:
 - showcasing certified fisheries via official trade conferences or tours
 - assisting with trading agreements with third parties or export market countries

C. Especially promoting artisanal fisheries:

- Reserve inshore and archipelagic areas for sustainable artisanal fisheries only
- Develop a workable system for managing and regulating (licensing, monitoring, regulating, reporting) artisanal fisheries, in close consultation with relevant communities
- Develop business plans for artisanal fisheries supplying export markets, using for example the Fair Trade model. Support could include:
 - exploring models for trade cooperatives to coordinate marketing of artisanal fishing fleets, including for Fair Trade
 - enabling access to supply chains for high value export markets
- Develop ongoing systems of training for artisanal fisheries in food safety and business management, via:
 - regional organisations, such as the Secretariat of the Pacific Community (SPC) and Forum Fisheries Agency (FFA)-sponsored training programs on food safety and quality for small-scale fisheries
 - businesses with interests in the success of artisanal fisheries, e.g. seafood export companies hosting training sessions for their artisanal suppliers

D. Making a priority of raising awareness at all levels about environmentally sustainable and socially responsible tuna fisheries in order to build and sustain market demand for pole and line, handline and artisanal tuna fisheries.

Appendices



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Methodology, Acknowledgements and People Contacted for Chapters 1 – 3

These chapters were undertaken mainly as a desk review of previously written material on the subject of domestication in Pacific tuna fisheries and the two main case studies. These written materials were supplemented with information and perspectives from interviews conducted by phone and Skype.

Robert Gillett contributed greatly through helping design the study, suggesting useful interviewees and reports, and commenting on Chapters 1-3 in draft form.

Thank you also to interviewees and other people who provided documents or suggested leads for the study.

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Bassford, Andrew. Our Source Consultancy.

Brownjohn, Maurice. Commercial Manager, Parties to the Nauru Agreement Office, Majuro.

Du, X.J. Managing Director Golden Ocean Fish Ltd, Suva, and Vice President of the Fiji Offshore Fisheries Association.

Gillett, Robert. Gillett Preston and Associates, Suva.

Holden, Bill. Marine Stewardship Council, Sydney, Australia.

Hufflet, Charles. Chairman, Pacific Islands Tuna Industry Association.

Hughes, Anthony V. Consultant, Western Province, Solomon Islands.

Kumar, Radhika. General Manager Solander (Pacific) Ltd, Suva.

Ledua, Esaroma. Participant in the former indigenous vessels owners scheme, Fiji.

Peacey, Jonathan. Offshore Fisheries Advisor, Mekem Strong Solomon Islands Fisheries Project, Ministry of Fisheries and Marine Resources, Honiara.

Philipson, Peter. Manager, REI Unit, Pacific Islands Forum Fisheries Agency, Honiara.

Raiwalui, Anare. Principal Fisheries Officer, Oceanic Fisheries, Fiji Government Department of Fisheries, Suva.

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Roberts, Phil. Tri Marine, Singapore.

Rodwell, Len. Director, Fisheries Development, Pacific Islands Forum Fisheries Agency, Honiara.

Southwick, Grahame. Managing Director Fiji Fish Marketing Group Ltd, Suva.

Stone, Robert. Forum Fisheries Agency, Honiara.

Teri, John. National Fisheries Development, Noro.

Walton, Hugh. DEVFISH Project, Pacific Islands Forum Fisheries Agency, Honiara.

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Published in July 2013 by:

Greenpeace Australia Pacific

Level 2, 33 Mountain Street
Ultimo NSW 2007
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T: +61 2 9281 6100



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