Pacific Community
Communauté du Pacifique

Pacific handbook for human rights, gender equity and social inclusion in tuna industries

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MODULE 7

HR and GESI in fisheries management and science

EUROPEAN UNION

Sweden
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PEUMP
Pacific-European Union Marine Partnership Programme

FAME
Fisheries, Aquaculture and Marine Ecosystems Division

HRSD
Human Rights and Social Development

Pacific handbook for

human rights, gender equity and social inclusion

in tuna industries

Module 6: HR and GESI in the informal small-scale tuna sector

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Communauté du Pacifique

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Reference Note

This handbook has been adapted from the Pacific Handbook for Gender Equity and Social Inclusion in Coastal Fisheries and Aquaculture, with several of the authors involved in both pieces of work. Some of the text and graphics from the Coastal Handbook have been adapted for use in the Tuna Handbook.

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CONTENTS

Key points

- Small-scale tuna fisheries are managed separately from offshore industrial tuna fisheries, but there are many connections between small- and large-scale tuna activities, so it is important to be thinking of the impacts (positive and negative) of large-scale tuna industries on small-scale fishing and marketing activities.
- Small-scale tuna activities are vital for food security and livelihood activities of many Pacific Islanders, so it is important to make sure small-scale actors continue to have access to tuna resources for fishing, for cooking or smoking and selling in markets, and as a source of affordable, high-quality protein.
- The rights of Pacific Islanders to tuna resources via small-scale activities can be viewed through a human rights-based approach (HRBA), such as the right to food, and freedom from discrimination.[1] A GESI lens is useful for ensuring that all people in communities benefit equally from small-scale tuna activities.

What is small-scale tuna fishing?[2]

There is no internationally or regionally shared technical definition of small-scale versus industrial fishing. Small-scale usually means vessels less than 12 m in length, although in some countries it could be less than 10 m or even 8 m, and some regional and international definitions are 15 m or 24 m. Small-scale vessels are open or partially undecked, use gear such as handlines, and are run and owned by families. In the Pacific, small-scale fishing is also called artisanal, coastal and nearshore fishing. For the purposes of this handbook, canoes with outboard motors and one or two crew are clearly small-scale, while purse seine and longline vessels are clearly industrial, and some of the larger Samoan '*alias* could fall into either definition. Small-scale fishing includes both commercial fishing for cash sale, and more traditional fishing for food for communities. Small-scale tuna fisheries in the Pacific use trolling and other kinds of line fishing.

Trolling is a fishing method where one or more fishing lines – baited with lures or baitfish – are towed behind a vessel (Figure 6.1). Many different fish are targeted by trolling, including skipjack and yellowfin tuna and also mahimahi, rainbow runner, wahoo and shark. Trolling is the most commonly used surface fishing method in the majority of Pacific Islands, and its popularity has grown even more since the introduction of motorised boats. Trolling can be done from a paddling, or sailing canoe, or from a boat with either an inboard or outboard motor.

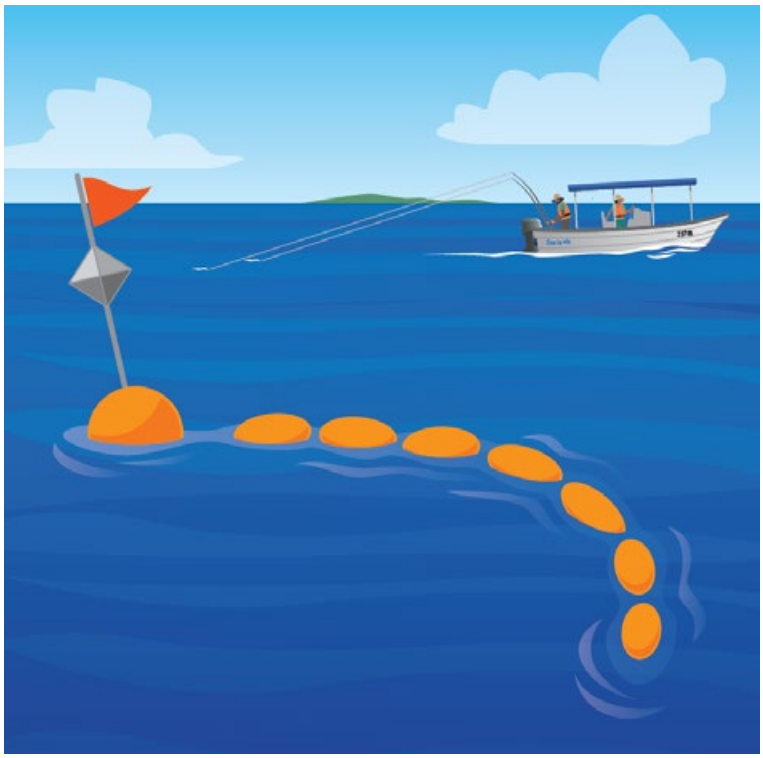

Figure 6.1 Trolling

1 Pacific Community. (2021). Policy Brief: Gender and Human Rights in Coastal Fisheries and Aquaculture Law: Vol. No. 36. Pacific Community (SPC).
2 The descriptions of fishing and figures in this section are sourced from Nearshore Fishing Techniques. A manual for community fishers in the Pacific Islands (2023) Pacific Community, Noumea.

In addition to trolling, other methods used in small-scale tuna fisheries in the Pacific include mid-water line fishing including techniques such as drop-stone and ika-shibi, as well as horizontal and vertical longlining (Figure 6.2). Handline is another method commonly used in small-scale fishing in the Pacific (see Figure 6.3). Longline and handline methods tend to take many of the same species as trolling, with the exception of skipjack, which is not common in mid-water (longline).

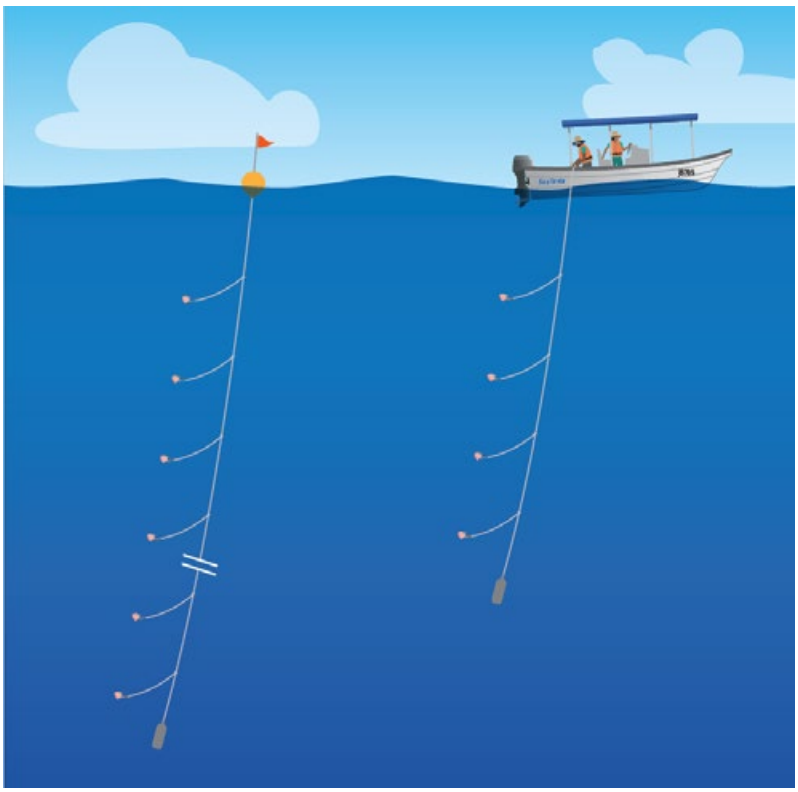

Figure 6.2 Vertical longlining

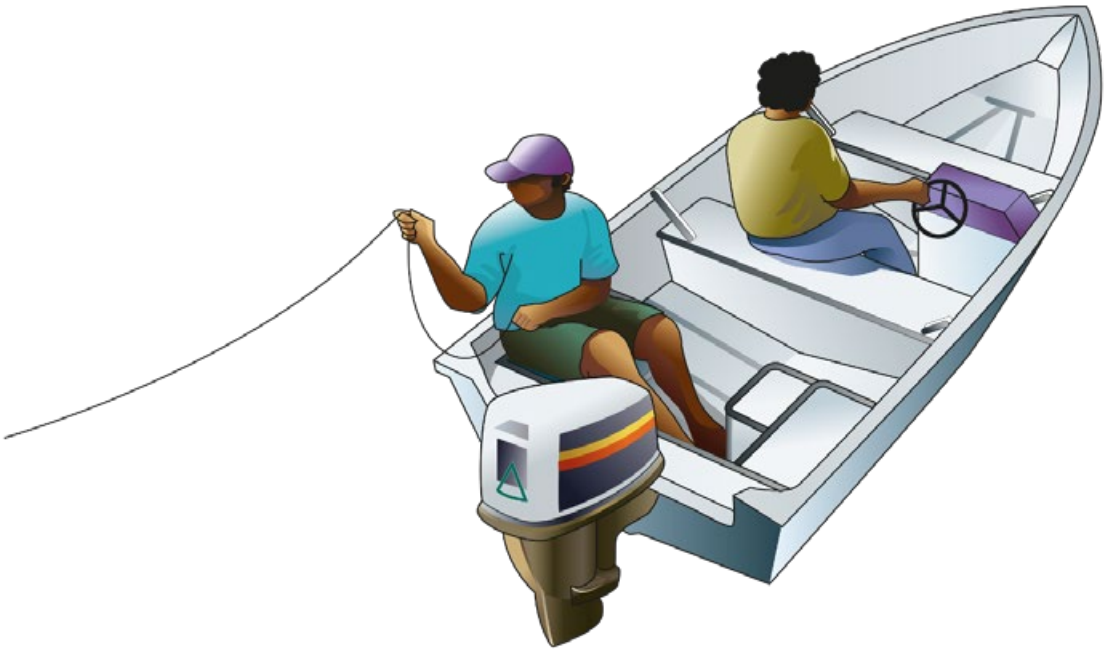

Figure 6.3. Handline troll fishing from a dinghy

Sustainable Development Goal (SDG) 14b specifies providing access to small-scale fishers to fish resources and markets. There has long been interest in promoting small-scale tuna fishing in the Pacific. This is partly because the resources are so good and there are good domestic, regional and global markets for tuna. It is also because it is fairly easy to get into small-scale tuna fishing – the vessel and gear required is within reach of many fishing communities. It has also been hoped that if small-scale fishers can sell tuna at good prices this would be a way to have more Pacific Islanders share in the benefits of the huge global tuna market. Many Pacific Islanders feel they have missed out on the benefits of their resource being caught by industrial vessels.[3]

Why include small-scale tuna activities in this handbook?

Fisheries management agencies in the Pacific are usually divided into offshore, which deals mainly with the industrial tuna fisheries, and coastal or nearshore, in which small-scale locally owned and run tuna fishing businesses fit. Offshore industrial fishing is very different to coastal small-scale fishing, so it makes sense to split the administration this way, but in fact industrial fishing and processing on the one hand, and small-scale, informal fishing and marketing activities on the other are interconnected worlds. Large-scale tuna industries affect small-scale tuna activities in many ways, positive and negative. For example, large-scale fisheries can reduce the availability of fish for small-scale fishers. But industrial fisheries can also benefit small-scale fishers through providing infrastructure such as fuel supply, ice production and bait. Some small-scale fishers use anchored fish aggregating devices (FADs) deployed for the industrial fishery (see Figure 6.6 in the section on FADs). Large-scale and small-scale tuna activities are closely related, and if we always separate them we cannot see those connections. Covering both small- and large-scale fishing highlights the need to make sure the small players, not only the big players, have a fair share of the resources.

The human rights issues faced by small-scale fishers are quite different to those faced by crew on industrial fishing vessels. Human rights issues for small-scale fisheries have been explored internationally in the Voluntary Guidelines on Securing Sustainable Small-scale Fisheries published by the United Nations Food and Agriculture Organization (FAO) in 2015.[4] The Pacific Community has also published a report on Gender and Human Rights in Coastal Fisheries and Aquaculture.[5]

A relatively small number of small-scale tuna fisheries have proven to be commercially viable in the long term, despite government support over the decades all over the Pacific. The reasons for why small-scale tuna fisheries have not been commercially viable vary. One key point is that the most commonly used types of vessels with outboard motors in small-scale fishing in the region are very fuel intensive. When fishing for tuna, around twice as much fuel is used for small-scale fishing as for purse seine fishing.[6] Many of the supports offered by governments – such as new vessel types, collector vessels and ice supplies – cannot be funded within business revenue and the government support is not sustained beyond project funding.[7]

These viability issues can be improved. One issue is that small boats are very vulnerable to sea conditions and can optimally operate in seas with swell below 1 m. The rougher the seas, the higher the fuel consumption and the more safety related issues fishers face. The fuel consumption of small-scale tuna fishers could be reduced through adjusting their fishing practices. Most tuna fishers only troll and only target schools of tuna. They could instead outfit their boats to also target larger midwater-size tuna and look at methods such as dangler fishing, vertical longlines and drift lines to reduce fuel consumption and increase catch rates. Small-scale fishers with outboard motors tend to either fish for deepwater snapper or troll for tuna, whereas they could be more viable if they varied their operations to match the availability of resources throughout the fishing seasons. For example, deepwater snapper fishers buy imported bait or bait caught by troll fishers, whereas if they also trolled they could catch their own bait to reduce costs and supplement

3 Gillett R., Blanc M., Cartwright I., Batty M., Savin, M., Albert J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.
4 Food and Agriculture Organization of the United Nations (FAO). (2015). Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. Rome: United Nations Food and Agriculture Organisation (FAO). http://www.fao.org/docrep/field/003/ab825f/AB825F00.htm#TOC
5 Graham A., D'Andrea A. (2021). Gender and human rights in coastal fisheries and aquaculture: A comparative analysis of legislation in Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. Pacific Community (SPC).
6 Wilson and McCoy 2009 as paraphrased in Gillett, R., Blanc, M., Cartwright, I., Batty, M., Savins, M., Albert, J., … Sokimi, W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.
7 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.

their incomes. Most small-scale fishers have not been exposed to these kinds of ideas about varying methods, and do not know how to reorganise their boats to carry out these operations.

The size of small-scale tuna fisheries varies across Pacific Islands countries and territories. Much more fish is caught in Kiribati's small-scale tuna fisheries than any other Pacific Island country.[8] Atoll island states on the whole rely more on fisheries, whereas higher and larger islands depend more on food gardens and less on the sea. For example, Vanuatu, with larger islands and very fertile land has less small-scale tuna fishing (see Table 6.1 in the section on Data).

There is also variation in the importance of industrial tuna fishing relative to small-scale fishing. For the equatorial countries with large purse seine fleets operating in their waters, industrial fishing is a huge presence. For countries further south, industrial fishing is less important. For example, Tonga has no offshore industrial tuna fishing fleet. Tonga's policy direction for tuna is to strengthen small-scale tuna fishing for economic development and food security needs.

8 Gillett R. (2011). Issues in Small-Scale Tuna Fisheries in FFA Member Countries. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA); Gillet R., Blanc M., Caertwright I., Batty M., Savin M., Alber J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.

Data

In contrast to the comprehensive statistics on industrial tuna catches, small-scale fishing and post-harvest processing and market activities in the Pacific are not well covered by statistics systems.[9] Small boats are not registered in the Pacific, which is the same in most developing countries worldwide. Since information on vessels and fish catches are often connected to the licensing of the vessel, the lack of registration is a key cause for the lack of data collected on small-scale fisheries. The International Maritime Organization (IMO) has been pushing to standardise training and regulate shipping around the world, including registration and monitoring of small crafts, but this is only just starting. In time, Pacific islands countries may implement regulation and registration for all boats with engines (probably not for sail or paddle).

A report commissioned by FFA on domestic tuna fisheries in 2019 found that while some Pacific islands states report they have small-scale catches of tuna and tuna-like species in their annual reports to the Western and Central Pacific Fisheries Commission (WCPFC), many do not estimate the amounts of those catches.[10] That study pieced together the best available information, giving estimates of catches shown in Table 6.1.

Table 6.1 Small-scale catches of tuna, tuna-like and pelagic species 2016 (best available data)

Country	Best estimate of 2016 catch (MT)	Trend	Notes
Cook Islands	**134** 92MT YFT 42 MT OT	Trend hard to distinguish from improved data reporting	Price fluctuates, may be affected by tourism sector demand
Federates States of Micronesia	**1,166**	Local preference for reef fish	No price data obtained
Fiji	**1,756**	Local preference for reef fish	Price approx. US$4/kg. SPC (2013) artisanal tuna catch is estimate used
Kiribati	**3,085** 1,743 tuna 1,342 Other pelagic species	Government programmes to increase artisanal effort on tuna may increase catches	Likely underestimate, no data for Line Islands. Small artisanal catch vol. exported via KFL
Marshall Islands	**500** (Estimate)	No data on trends	US$5 for"small bag" Preference for reef fish
Nauru	**310**	Fishery highly seasonal	US$12-15/kg. Preference for yellowfin tuna
Niue	**60** (Estimate)	Catches declining, large unmet local demand	NZ$15/kg
Palau	**100** (Estimate)	Catches are steady	Active game fishing sector looking to increase landings
Papua New Guinea	**4,586**	No data on trends	No price data obtained
Samoa	**3,000** 1,500 tunas 1,500 other pelagic (estimate)	No data on trends. Coastal catch high (est. 10,000 MT, Gillett 2016) with around 30% pelagic	Pelagic species prices 5-14 WST/kg, alabacore (14WST) wahoo and bigeye (13WST) highest value
Solomon Islands	**1,650**	No data on trends	No price data obtained
Tokelau	**83**	19% decline in catches in 2017	Fish is traded without currency
Tonga	**433**	No data on trends	12-18 pa'anga per kg. Active game fishing sector but no catch data
Tuvalu	**350**	Hard to distinguish from improved data collection and reporting	Price around AU$4/kg varies by species and rises in bad weather
Vanuatu	**248** 200 artisanal 48 game fishing (Estimate)	Shortage of fish in the local market	US$4-10/kg
TOTAL	**17,461**		

Source: Tolvanen, S., Thomas, K., Lewis, T., & McCoy, M. (2019). FFA study: Assessing the contribution of landings from locally based commercial tuna fishing vessels to food security. Forum Fisheries Agency. https://www.ffa.int/system/files/Local Tuna Landings Report May 2019.pdf

9 Gillett R. (2011). Issues in Small-Scale Tuna Fisheries in FFA Member Countries. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA).
10 Tolvanen S., Thomas K., Lewis T. & McCoy M. (2019). FFA study: Assessing the contribution of landings from locally based commercial tuna fishing vessels to food security. Forum Fisheries Agency. https://www.ffa.int/system/files/Local Tuna Landings Report May 2019.pdf

The lack of data means it is difficult to be sure about what is going on, or to be able to track the effects of any interventions. For example, WCPFC Convention Article 30 specifies that industrial fisheries should not cause adverse impacts on small-scale fisheries, and that members should ensure small-scale fishers and fish workers have access to fish resources. Without data how can we tell if there are adverse impacts from industrial fisheries or that fishers and fish workers have good access? The lack of data extends also to HR and GESI matters, such as safety at sea, and the roles of women and migrant groups in small-scale fishing and market activities.

Good data on small-scale tuna catches could be collected via market surveys and by estimating from existing creel survey and Tails[11] data, and by using the knowledge and expertise of national fisheries agencies, and the Pacific Community Coastal Fisheries Programme staff.[12] This kind of approach has been used by Cook Islands. They merged the fisheries census into the national census for 2021 to improve data. Combining that with Tails data collected by the marine staff, Cook Islands now has a very good set of data about small-scale tuna fisheries.

Food supply

Annual production of small-scale tuna fisheries in all Pacific countries is less than 2% of the total tuna catch for all types of fishing gears including industrial fisheries.[13] However, the nutritional importance of small-scale tuna fishing will increase with expanding urban populations and their demand for fish. It is important to support an increase in non-reef fisheries, such as small-scale tuna fisheries, to avoid the depletion of reef resources.

Tuna from coastal small-scale fisheries is important for food supplies and livelihoods in many Pacific Islands communities. In some places tuna is a very important part of the diet.

Welcoming the tuna catch in the central Caroline Islands

There is a strong heritage of tuna fishing at Satawal in the Central Caroline Islands (FSM). Taro and breadfruit make up most of the diet. There is no lagoon, so very little in the way of reef fish resources. When a sailing canoe arrives home with a catch of tuna "the crew pound their paddles with joy while waiting offshore, old women dance and sing on the beach, and the entire population is in a state of delightful anticipation of bone-free protein".[14]

With small populations spread out over islands without cheap and easy transport or cold storage, it can be difficult getting small-scale fish catch to urban markets. In Cook Islands, the Ministry of Marine Resources is looking at standards for inshore fish processing so that fish caught in the outer islands can meet the "safe for human consumption" requirements and be sold in the Rarotonga market. In Solomon Islands fishers work with fish traders in Honiara to send cool boxes of fish on the inter-island ferry services to the urban market.

11 Tails is a mobile phone and tablet application supported by the Pacific Community to enable member country coastal fisheries staff to collect data and send it back to the main office, even in remote locations with limited data connections.
12 Tolvanen S., Thomas K., Lewis T., McCoy M. (2019). FFA study: Assessing the contribution of landings from locally based commercial tuna fishing vessels to food security. Forum Fisheries Agency. https://www.ffa.int/system/files/Local Tuna Landings Report May 2019.pdf.
13 Gillett R. (2011). Issues in Small-Scale Tuna Fisheries in FFA Member Countries. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA).
14 Gillett 1987 as quoted in Gillett, R. (2011). Issues in Small-Scale Tuna Fisheries in FFA Member Countries. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA).

Figure 6.4 Selling small-scale catch as fish and chips at Noro market, Solomon Islands ©Kate Barclay

Figure 6.5 Filleting small-scale tuna catch for sale in Gizo market, Solomon Islands © Reuben Sulu

Catch from the industrial fleet also enters local food systems. In Fiji, the industrial fishing companies have outlets in the cities and at their base sites which sell frozen fish cutlets from fish that are not exported due to being undersize or not an export species, or not meeting export quality grade. Village market vendors come to the Golden Ocean processing plant each week to collect fish heads and tails and roe to take back to the village for sale. Bones are sold to local small-scale fishers for using the drop-line method, or as berley for catching sharks.

During trans-shipping of industrial tuna catch destined for canning, a certain amount is rejected because it is damaged or the wrong species. In most of the trans-shipping ports around the Pacific the reject fish is traded with local small-scale traders, who then sell it just like that, or may cook it and sell it. As long as the fish does not get too warm after coming out of brine freezers on the industrial vessels the quality of this fish is fine, even though it gets a brownish tinge from the brine. In Solomon Islands it is called 'saltfish' due to the salty flavour. See Module 4 for further discussion of potential social impacts of the trade for saltfish around port areas. Many women have small businesses using saltfish.

Case study: businesses selling saltfish in Solomon Islands

Salt fish is an important affordable source of protein in urban areas. The supply is not constant, but changes when there is more or less trans-shipping. In Honiara, the levels of trans-shipping vary seasonally and from year to year[15] Many women trade for saltfish, take it home and cook it into meals like fried fish and sweet potato chips packaged in paper bags, which they sell in markets. Some women who run small 'kai bar' eateries also use saltfish for stews or curries. Women selling cooked saltfish in markets in Auki interviewed for a study in 2014 said their business was the primary income for their family.[16] Market vendors of saltfish say when supplies are low their livelihoods suffer and they go into less profitable activities such as selling betel nuts around their neighbourhood.

Interactions between small-scale and industrial tuna fishing

WCPFC and FFA both specify that industrial tuna fishing should not disrupt or disadvantage small-scale fishing.[17] However, the lack of ongoing monitoring of small-scale fisheries in the Pacific means that impacts from industrial fishing on small-scale tuna fisheries cannot be measured or assessed over time.

Small-scale fishers have consistently said for many years that industrial tuna fishing reduces the abundance of fish available to them. One study in the 1990s found that small-scale tuna fisheries in Kiribati suffered a 7% drop in catches due to purse seine operations.[18] The monitoring of tuna stocks by the Pacific Community Offshore Fisheries Programme (OFP) and reporting to the WCPFC does not look at whether industrial fishing is affecting small-scale fishing. Some kind of monitoring should be implemented, especially in countries like Kiribati where the small-scale tuna fishery is important for livelihoods and as a source of food.

Another adverse impact from industrial fisheries is that when reject fish from industrial vessels enter local markets there can be a downward pressure on local tuna prices. The high fuel costs of small-scale fisheries using outboard motors mean small-scale tuna is always more expensive than purse seine tuna. The supply of cheap reject industrial tuna has mixed impacts, some positive and some negative. It competes against small-scale tuna in the market, but is an important affordable protein supply for low income people. In some cases, fresh tuna from local small-scale fishers can be sold at a higher price in markets than industrial reject fish.[19] This depends on the quality of the fresh small-scale tuna. In many cases small-scale tuna fishers do not ice their fish or protect it from the sun after catching it, so the quality can be poor. Fresh tuna that has been kept on ice is attractive to consumers, if they can afford it. But when the choice is between industrial reject fish and poor-quality more expensive fresh fish, many choose the purse seine tuna. It is hard to be clear about the effects of industrial reject fish on domestic tuna markets because market data is not collected systematically, nationally or regionally.[20]

15 Barclay K. & Cartwright I. (2008). Capturing wealth from tuna: case studies from the Pacific. https://doi.org/10.26530/oapen_458
16 Barclay K., Payne A. and Mauli S. 2015. Toward gender-equitable fisheries management in Solomon Islands. Washington: World Bank. Retrieved 21 November 2019, http://documents.worldbank.org/curated/en/467721468187800125/Toward-gender-equitable-fisheries-management-in-Solomon-Islands.
17 WCPFC Convention – Articles 5, 10, 30 all refer to protecting the interests of small-scale fishers, communities relying on fishing, and small-scale fishworkers. 'Artisanal' is also mentioned in several conservation and management measures (CMMs), excluding them from catch restrictions. The FFA Strategic Plan notes that commercial opportunities for the industrial onshore and offshore developments should not come at the cost of coastal fisheries, and that Pacific Community coastal fisheries officers should collaborate with the FFA Secretariat to develop management for both inshore and offshore fisheries. Pacific Islands Forum Fisheries Agency. (2019b). Strategic Plan 2020-2025. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA). Retrieved from http://www.afpe.org.uk/physical-education/wp-content/uploads/afPE-Strategic-Plan-2016-2020.pdf, pp. 12, 18.
18 Hampton J., Lawson T., Williams P., & Sibert, J. (1995). Interaction between small-scale fisheries in Kiribati and the industrial purse seine fishery in the western and central Pacific Ocean. Food and Agriculture Organization (FAO) of the United Nations. https://www.fao.org/3/w3628e/w3628e0h.htm
19 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.
20 There have been some short-term studies of prices in certain markets, for example, the Hapi Fis initiative in Solomon Islands. See: Pomeroy, R., & Yang, D. (2014). Selling and marketing fish in the Solomon Islands. SPC Fisheries Newsletter, 145.

The landings of fish from the industrial fleet into local markets varies and is quite small. It is highest in PNG and Solomon Islands, where about 1% of the total industrial catch enters local markets. Even in Kiribati, which requires local landings as part of fishing or trans-shipping agreements, about 0.3% of the total trans-shipped volume enters local markets.

The amounts of industrial tuna available in local markets vary a great deal from year to year according to the commercial needs of the industrial fleets, which follow the fish and move across the Pacific according to conditions such as El Niño.[21]

Trading is one of the positive interactions between industrial and small-scale tuna value chains. Communities barter fresh fish and vegetables, snacks, drinks and so on for reject fish from the industrial vessels. Small businesses take industrial reject fish and sell it raw, or cook it and sell it.

Another positive interaction is when small-scale fisheries 'piggyback' on industrial infrastructure, supplies and export markets, such as processing facilities, marketing connections, transport, mechanical services, gear shops, bait and ice. Some existing small-scale tuna fisheries like the Samoan '*alia* fishery would not exist without the industrial fishery.[22] Many small- to medium-scale operators in the Pacific depend on bait ordered for the industrial vessels to support their operations. Some small-scale operators use the rejects or offcuts from industrial fisheries and processing operations for bait. Small-scale tuna fishers from the villages of Titiana and Mbabanga who sell their catch in Gizo in Solomon Islands fish on FADs placed for the industrial fishery.

Industrial tuna fishing vessels often rescue people lost at sea, including small-scale fishers. In September 2021 a PNG-based purse seiner rescued a man in a canoe whose engine had failed and he had been dragged out to sea by strong currents.[23] Industrial fisheries also benefit small-scale fisheries when some portion of industrial access fees is used for schemes to support small-scale fisheries.

21 Tolvanen A. S., Thomas K., & Lewis T. (2021). Assessing the contribution of landings from in-port transhipment to food security in the Pacific. Honiara, Forum Fisheries Agency.
22 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., ... Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.
23 A Fisherman and climate change activist rescue by a Tuna Purse Seiner in Papua New Guinea waters. (2021, October 7). Fishing Industry Association Papua New Guinea (FIA-PNG) Blog Post. Retrieved from https://www.fia-png.com/post/a-fisherman-and-climate-change-activist-rescue-by-a-tuna-purse-seiner-in-papua-new-guinea-waters

Fish aggregating devices (FADs)

Nearshore and lagoon anchored FADs (see Figure 6.6) consistently enable small-scale fishers to economically access tuna and other pelagic fish.[24] FADs can be low tech, made from materials such as bamboo, natural fibre rope and palm fronds, as well as hard plastic floats and synthetic ropes. Some of the industrial drifting FADs have GPS trackers and sonar and communications equipment. Importantly, FADs help reduce fuel consumption because fishers can go directly to the FAD to fish rather than move around looking for tuna. FADS can also improve safety for small-scale vessels by reducing the time needed to search for schools of fish out in the open sea. There is limited understanding of costs in relation to the benefits of FAD schemes.

It is important to note that FADs do not work in all locations, even within the one country. For example, if FADs are placed too close to reefs or the shore, they may be polluted by wash-off after heavy rain, and tuna will not stay in the dirty water. Some places are not suitable for anchoring FADs, such as areas with high currents, or bottom topography of cliffs, ridges or steep slopes. FADs are quickly lost in such locations.

There are also social reasons FADs lead to increased tuna catches, or not. In Fiji anchored subsurface FADs have been deployed in Ra province but have not led to increased landings of tuna by local small-scale fishers.[25] Game fishers from the surrounding resorts have had good results using these FADs, so the FADs are technically functioning, but local small-scale fishers are not using them. According to Pacific Community FAME staff, most fishers in Ra are reef fishers, not full-time tuna fishers. Because tuna fishing requires more fuel it is more expensive than reef fishing, so people need a strong reason to turn to tuna fishing. The FADs were deployed in Ra after Cyclone Winston so fishers could target tuna while the reef recovered, but it turned out the reef was not too badly damaged and fishers did not need to turn to tuna fishing.

Where the topography is not suitable for anchored FADs, there may be other natural features that cause tuna to aggregate. For example, upwellings and eddies attract tuna. These places can be used in the same way as FADs, to avoid having to move around looking for schools of fish.

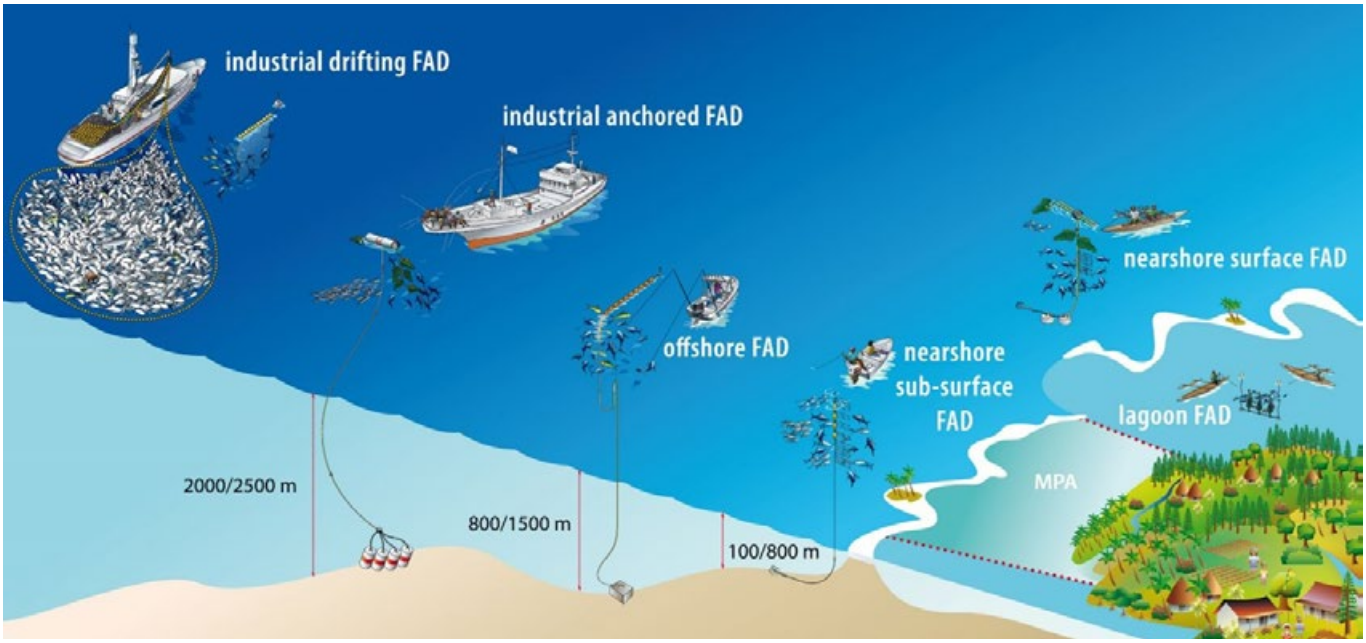

Figure 6.6 Different kinds of FADs used in Pacific Island countries and territories.

Source: William Sokimi, FAME, the Pacific Community (SPC)

24 Sharp M. (2011). The Benefits of Fish Aggregating Devices in the Pacific. SPC Fisheries Newsletter, 135(August), 28–36.
25 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.

Figure 6.7 Handlining from a canoe at a fish aggregating device (FAD)

Source: Ian Bertram, FAME, the Pacific Community (SPC)

Social dimensions are crucial for the success of FADs for small-scale tuna fishing

Stakeholder engagement and community level governance are crucial to the success of FADs.[26] One project found that communities felt that nearshore FADs used in small-scale fishing led to an increase in conflict between husbands and wives due to men spending more time fishing, and to reductions in fishers' participation in community activities.[27] Since inshore FADs in many Pacific Island countries and territories are placed in customary tenure areas, landowning groups could prevent non-landowning migrant groups from using FADs. This leads to inequities, because migrant and non-landowning groups are often already socially marginalised and may have restricted access to land for gardening. FADs have been the source of disputes in coastal communities, leading to sabotage, including cutting the ropes mooring the FADs, so no one can use them. Before deploying inshore FADs, as well as working out whether the location is good from a technical perspective, it is necessary to see whether the location is suitable for a FAD from a social perspective. For this it is necessary to do a social analysis (see Module 2) and effective stakeholder consultation (see Module 8). It is also important for fisheries agencies to co-manage FADs with fishers, so that sabotage of FADs is penalised. Coastal fisheries experts in FAME in the Pacific Community say pre-deployment groundwork including social dimensions is a prerequisite for FAD deployment. The deploying group should first consult with fishers on why and where they want the FADs. Second, there should be an awareness campaign to educate stakeholders on what the FADs are and on the stakeholders' roles and responsibilities regarding the FADs. The cases where FADs are most socially accepted are those where the awareness campaign starts well before the deployment and continues for a long period after the deployment.

26 Gillett R., Blan, M., Cartwright I., Batty M., Savins M., Alber, J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.

27 Albert J. A., Beare D., Schwarz A., Albert S., Warren R., Teri J., … Andrew N. L. (2014). The Contribution of Nearshore Fish Aggregating Devices (FADs) to Food Security and Livelihoods in Solomon Islands. PLoS ONE, *9*(12), e115386. https://doi.org/10.1371/journal.pone.0115386

Safety of small boats

There is a significant safety issue with people going offshore seeking tuna in very small motor-powered vessels without safety equipment.[28] In general, small-scale vessels used in the Pacific are poorly constructed in terms of safety, and fishers frequently travel in the open sea with outboard motors in very poor condition. Many small-scale fishers are not very concerned about the significant risks involved in their offshore fishing activities, but accept these risks as normal, or necessary to sustain their livelihood. Many are lost at sea each year, mostly due to running out of fuel or the engine breaking down. A 2008 report found that the Pacific had some of the highest accident rates in the world for fisheries, and many of these accidents are in small-scale fishing, through people being lost at sea.[29] As with the other topics covered in this module, there is not ongoing monitoring and reporting of safety incidents in small-scale tuna fishing.

The lack of regulation of small boats is a problem, because safety could be improved through regulation. Countries where safety regulations have been introduced and strictly enforced have seen reductions in incidents.[30] Domestic legislation on small boat safety is patchy throughout the Pacific region, and not always fully implemented. Controls are in place for commercial fishing vessels (e.g. vessel registration, seaworthiness check, fishing licence) only if they are over the regulated length for that country (could be 8 m, 10 m or 12 m). Vessels in the informal sector have no safety regulations. The Pacific Community has published an overview of the legal situation regarding gender and human rights for small-scale fisheries in several Pacific Island countries.[31]

Regulations could require registration of fishers, boats and gear. Fishers could be required to pass safety training to be given registration. Departure and arrival notifications could be required. Boats of particular designs could be restricted from travelling in open waters and there could be a particular hull requirement for boats operating in open waters. Another way to improve safety is to have sails as a backup way to return home if fuel is contaminated or runs out. This means adding a keel board and sail as part of the boat's equipment, so requires adjusting existing boats, and adjusting the designs for new boats.

FAO and the Pacific Community have had numerous initiatives to improve the safety of small-scale fishing in the Pacific. These have included safety awareness education, vessel design, legislation and safety equipment (flares, beacon, radios). Safety equipment for small vessels is becoming cheaper, and the Pacific Community has promoted the use of 'grab bags' of such equipment, but there are still problems accessing safety equipment, especially on remote islands.

28 McClean N., Barclay K., Fabinyi M., Adhuri D. S., Sulu R. & Indrabudi T. (2019). Assessing tuna fisheries governance for community wellbeing: case studies from Indonesia and Solomon Islands, summary report. Sydney: University of Technology Sydney. Retrieved from: https://www.uts.edu.au/about/faculty-arts-and-social-sciences/research/fass-research-projects/assessing-governance-tuna

29 Gillett R. (2011). Issues in Small-Scale Tuna Fisheries in FFA Member Countries. Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA).

30 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., … Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.

31 Graham A. & D'Andrea A. (2021). Gender and human rights in coastal fisheries and aquaculture: A comparative analysis of legislation in Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. Pacific Community (SPC).

Post-harvest

It is often hoped that small-scale fishery tuna can enter industrial export chains, as happens with the Samoa *'alia* fishery. A key barrier to this is that industrial fishing methods have 'economies of scale', especially regarding fuel use, and so tuna caught by purse seine is much cheaper than small-scale caught tuna. Small-scale fishery tuna is usually not viable in cannery-oriented markets.[32]

However, there are often good opportunities in domestic markets for both small-scale fishers and small-scale post-harvest businesses. Small-scale fishery tuna sales thrive in the urban markets in Solomon Islands. Tourism markets are also important. Hotels and resorts can offer small-scale fishers very good prices for sashimi fish. There are also post-harvest opportunities with small-scale processing.

Case study: small-scale tuna processing in Kiribati

As far back as the early 1990s, there were two groups making tuna jerky (savoury dried tuna slices) and selling it in the domestic market: Outer Islands Fisheries Project (OIFP) and Teikabuti Fishing Company (TFC).[33] Tuna jerky production has continued on a small scale since then. There have been plans to export it, but exports have not taken off, although the domestic market remains. The idea is to add value and increase shelf life without refrigeration. Mainly yellowfin tuna (Thunnus albacares) above 15 kg has been used, as this size maximises return on yield. In recent years the FAO has supported training in techniques for improving quality and hygiene for tuna jerky and other small-scale tuna processing through its FishFAD project.[34] FAO sees small-scale tuna processing as a good way to support local livelihoods as well as increasing the supply of nutritious, convenient foods.

The training covered four tuna products: (1) tuna jerky, which is marinated and solar dried using a gentle process, shelf stable for up to 12 months; (2) tuna sausages, which capture the natural fish texture in a gourmet sausage, requiring storage in a domestic freezer; (3) lightly brined, smoked and cured tuna steak, dried to produce a shelf-stable tuna steak, which needs to be soaked in water for 20 minutes prior to cooking; and (4) micro canned tuna, a gourmet product available in a can or jar.

Reject saltfish from industrial fisheries is also an important part of the post-harvest tuna economy in trans-shipping areas, providing livelihoods for the traders and affordable protein in urban areas. Earlier in this module we mentioned saltfish businesses in Solomon Islands. In Vanuatu industrial tuna fishing vessels trans-ship at the wharf in Black Sands outside Port Vila. Raw or cooked saltfish is sold by women in roadside stalls.

32 Gillett R., Blanc M., Cartwright I., Batty M., Savins M., Albert J., ... Sokimi W. (2018). Forty Years of Small-Scale Tuna Fishery Development in the Pacific Islands: Lessons Learned. SPC Fisheries Newsletter, 157.
33 SPC (1994). Processing Novel Tuna Products in the Pacific. Secretariat of the Pacific Community, Noumea.
34 See the FAO website for further details on tuna processing livelihood activities in the FishFAD project (also known as *Enhancing livelihoods and food security through fisheries with nearshore fish aggregating devices in the Pacific*) https://www.fao.org/asiapacific/news/detail-events/en/c/1310782/

HRBA in small-scale fisheries internationally

A human rights-based approach (HRBA) has been promoted for small-scale fisheries, because they tend to lose out compared to industrial fisheries. The companies that own industrial fisheries are more easily able to liaise with government, and are given greater access to fisheries resources than the largely informal, lower income, less organised small-scale fisheries. The *Voluntary Guidelines on Securing Sustainable Small-scale Fisheries* published by the FAO in 2015 takes an HRBA.[35] Because of the informality of most small-scale fisheries and because the people involved in them are often from socially and economically marginalised groups in society, they are often ignored. Fisheries management usually focuses on industrial fisheries, with less attention given to small-scale fisheries.

We can see this in the Pacific, where the amount of resources put into managing offshore tuna industries far exceeds that put into coastal fisheries. Another possible reason the Pacific has been slower to establish management strategies for small-scale fisheries is that these fisheries are fully under national jurisdiction and entangled with social and cultural values. In contrast, because industrial fishing is further offshore, the social complications are smaller. Tuna stocks transcend national boundaries and the offshore fishing sector is global, so is governed by common principles of management already agreed at an international level.

An international network of fisheries researchers and NGOs supporting fishworkers has been created to highlight small-scale fisheries: Too Big To Ignore (TBTI) (see http://toobigtoignore.net/). With the 'blue economy' concept gaining so much policy attention in recent years, those in small-scale fisheries say there also needs to be a 'blue justice' movement, to ensure small-scale fishers are not further sidelined with all the ocean-related development going on. Supporters of small-scale fishers point out that small-scale fisheries employ more people, receive lower subsidies, and use a larger proportion of the catch for human consumption than industrial fisheries, as shown in Figure 6.8.

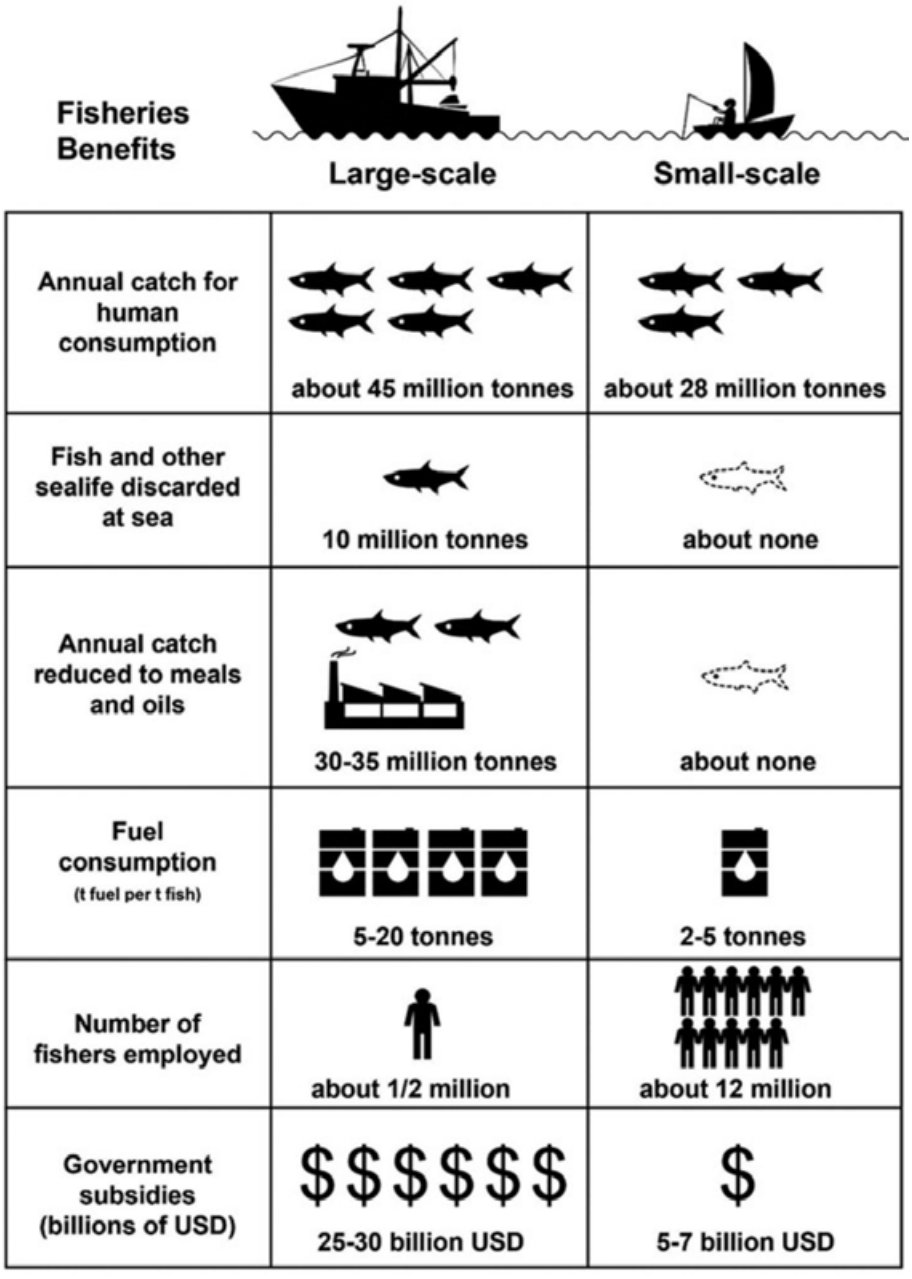

Figure 6.8 Benefits from small-scale versus large-scale fisheries globally

Source: Zeller D. & Pauly D. (2019). Viewpoint: Back to the future for fisheries, where will we choose to go? Global Sustainability, 2. https://doi.org/10.1017/sus.2019.8 (graphic available for use under Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International)

35 Food and Agriculture Organization of the United Nations (FAO). (2017a). Exploring the human rights-based approach in the context of the implementation and monitoring of the SSF Guidelines. Retrieved from http://www.fao.org/3/a-i6933e.pdf; Food and Agriculture Organization of the United Nations (FAO). (2015). Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. United Nations Food and Agriculture Organization (FAO). Retrieved from http://www.fao.org/docrep/field/003/ab825f/AB825F00.htm#TOC

GESI in small-scale tuna enterprises

Women tend to participate less in small-scale tuna fishing than other kinds of small-scale fishing, because tuna are caught far from shore, usually from boats, and this kind of fishing is more commonly done by men. Not many women want to fish far from shore. This trend is slowly changing though, with more women going out with men on boats to do small-scale fishing than in the past. However, if we look at whole supply chains of small-scale fishing, including preparing for fishing trips with fuel, bait, water and food, and small-scale post-harvest activities, women make up at least half of the people involved. Because tuna fishing is deemed to be male only, many of the decisions about fishing are made without women's input, even though decisions about fishing have direct impacts on post-harvest businesses and thus directly affect many women.

Viewing fisheries in terms of whole supply chains, rather than just the fishing activity, is a good way to shift focus so that we notice the role of women in seafood industries, and remember to include women in decision-making and development programmes.[36] In Fiji, for example, looking at the whole supply chain means taking into account the women vendors who buy tuna from the outlet at the Suva wharf or sliced tuna from fishing companies, who then cook the tuna into fish and chips or other dishes and sell it at the Suva and Nausori markets and in small roadside outlets. A lack of data about post-harvest tuna activities in the Pacific is one reason women remain invisible in the tuna world and may be missing out on support to improve employment conditions in marketing.[37]

Data is lacking on small-scale fisheries activities in general, and specifically on informal value chain activities, which is related to the bias towards industrial-scale and men in fisheries and fisheries management; this means that there is limited understanding of the value of women's post-harvest roles and relatively little support for them in terms of training and grants (see Modules 1 and 2 for discussion on bias and misconceptions related to gender and fisheries).

There are some supports for post-harvest activities targeting women, and it would be good to build on these. Papua New Guinea's National Fisheries College has long had post-harvest training courses, including for small-scale activities, and has collaborated with the Pacific Community small-scale fisheries trainers, in areas such as preserving the quality of fish. There is the potential to improve the value or markets for existing activities, and to explore new ones. For example, there is currently a project in Kiribati training women producing tuna jerky, continuing tuna jerky product development that has been ongoing for some years.[38] Fisheries experts have also suggested other small-scale tuna processing that could be developed with women entrepreneurs, such as salted tuna, bottled tuna, filleting for resorts and export markets or preparing lunch take-aways in markets, and so on.[39] So far many projects have focused on the technical production and food safety aspects of these initiatives. Equally important is the business planning and development, so it would be good to see more training in financial literacy and business plan skills for future small-scale tuna projects, for men and women. One example of a business-focused small-scale seafood training opportunity is the Certificate of Professional Development (CPD) in Establishing and Operating a Small Seafood Business, run by the University of the South Pacific (USP).[40]

Generally, women have received less development support for small-scale tuna enterprises than men. Where development grants for small enterprises for tuna fishing or spin-off businesses associated with the tuna industry are going predominantly to men, the causes should be explored. If some form of gender bias is disadvantaging women, a quota system could be used to make sure women have access to training and funding opportunities.

Cook Islands has a programme to provide fuel, gear and equipment subsidies as annual grants for small-scale fishers in exchange for catch data. Women do not apply as often as men. In 2018, 20 out of 243 applications were from women. Sixteen women received funds, compared with 93 men. The fund does cover gleaning – an important form of fishing used by women – and covers ice for roadside stalls – another important activity done by women. The Cook Islands Ministry of Marine Resources is working on ways to encourage more people, especially women, to take up small-scale fishing and value-chain activities.

Finally, while women are not involved in large numbers in small-scale tuna fishing, some women do fish for tuna. It is important to give equal opportunity to those women who want to fish, rather than just assuming that none will want to. It is about supporting women who are interested to fish, who can benefit from training to maximise their

36 Finkbeiner E. M., Fitzpatrick J. & Yadao-Evans W. (2021). A call for protection of women's rights and economic, social, cultural (ESC) rights in seafood value chains. Marine Policy, 128 (March), 104482. https://doi.org/10.1016/j.marpol.2021.104482; Food and Agriculture Organization of the United Nations (FAO). (2015). Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. United Nations Food and Agriculture Organization (FAO). Retrieved from http://www.fao.org/docrep/field/003/ab825f/AB825F00.htm#TOC

37 Tuara Demmke P. (2006). Gender issues in the Pacific Islands Tuna Industry (DEVFISH Project). Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA), Pacific Islands Forum Secretariat (PIFS), Secretariat of the Pacific Community (SPC). Retrieved from https://www.ffa.int/system/files/Gender issues in P. I. Tuna Industries 1_0.pdf, p.42

38 Food and Agriculture Organization of the United Nations. (2020, September 30). FishFAD: Improving livelihoods through sustainable nearshore fisheries in the Pacific - New initiative develops tuna products in Pacific Island countries. Food and Agriculture Organization of the United Nations. Retrieved from https://www.fao.org/in-action/sustainable-nearshore-fisheries-improves-livelihoods-pacific/news/details/en/c/1365506/

39 Tuara Demmke, P. (2006). Gender issues in the Pacific Islands Tuna Industry (DEVFISH Project). Honiara, Solomon Islands: Pacific Islands Forum Fisheries Agency (FFA), Pacific Islands Forum Secretariat (PIFS), Secretariat of the Pacific Community (SPC). Retrieved from https://www.ffa.int/system/files/Gender issues in P. I. Tuna Industries 1_0.pdf

40 See here for information about the USP CPD for small seafood business development: https://www.training.ac.fj/info/certificate-of-professional-development/cpd-in-establishing-and-operating-a-small-seafood-business/

capacity. Currently most women lack access to the boats and outboard motors that are used for tuna fishing, and are not routinely included in tuna-oriented small-scale fisheries training. Improving gender equity in small-scale tuna fishing includes working towards women having equal access to fishing equipment.

Action points: what can fisheries managers do to support HR and GESI for small-scale tuna enterprises?

Stakeholder engagement

A key action fisheries agencies can do to improve HR and GESI for small-scale tuna fisheries is to engage more with small-scale fisheries (see Module 8). This could be through improving data on small-scale fisheries, having more consultative processes with small-scale fishers, and including small-scale fisher associations in tuna advisory bodies.

If an industrial fishing vessel causes a problem for small scale fishers, especially in remote areas, do the fishers have a good way to make a report to their national fisheries agency and have the problem investigated, and, if necessary, dealt with? Industrial vessels operating under FFA's mandate have an electronic Vessel Monitoring System so the fisheries agency can check the industrial vessels' movements. But do village-based fishers have a way of reporting suspected wrongdoing and having the results of an investigation reported back to them? Currently many small-scale tuna fishers probably feel they have no voice regarding industrial tuna fishing. Small-scale fishers are usually not included as a stakeholder group for consultation regarding tuna fisheries management – usually only the tuna companies and environmental NGOs are consulted.

A second important point is to work across the institutional divide between offshore and coastal fisheries that exists in most national fisheries agencies and regionally within the Pacific Community. FFA conventionally deals only with industrial tuna fisheries, not small-scale fisheries.

Strengthen small-scale fisher associations

In some countries there are co-operatives or other fisher groups that support small-scale fishers. Often such organisations have limited resources because of the relatively low value and informality of small-scale fisheries. In PNG the Fishing Industry Association (FIA) has broad membership including cooperatives that work with small-scale fishers. In other countries, if there is an industry association it is dominated by the industrial offshore sector. Fisheries agencies could consider using a portion of industrial tuna access fees to support small-scale fisher industry organisations.

Collaboration

Because addressing HR and GESI goes beyond the normal skillset of fisheries managers, it is vital for fisheries agencies to collaborate with other experts and the stakeholders themselves for small-scale tuna activities. Collaborating with people from other government agencies, NGOs, industry organisations and others with expertise in HRBA and GESI-sensitive business development can help. These experts can diagnose root causes of socio-economic issues and reveal potential losses for various stakeholders, enabling everyone to benefit equitably from small-scale fisheries. Fisheries managers cannot address these problems or identify opportunities in isolation, even if they are fisheries related. Furthermore, one solution will not work to 'fix' the same problems in different communities, because the problem may not be technical in nature but social.

Data

Fisheries managers can establish ongoing monitoring of catches from small-scale tuna fisheries, building on existing cost-effective initiatives such as Tails, an app on mobile devices for easy data collection and reporting.[41] Data on catches will enable understanding of impacts on abundance from industrial fleets, as well as contributing to understanding the economic scale of small-scale tuna enterprises. It is important to establish ongoing monitoring of the impacts of industrial fleets on small-scale tuna catches.

In addition to data on catches, other data is also important for understanding the HR and GESI dimensions of small-scale tuna activities. Market data on prices and volumes is important, as is gender disaggregated data on small-scale fishing households, fish vendors and people doing value-adding activities. What contributions do small-scale tuna activities make to livelihoods? This kind of data is not currently collected, but could potentially be generated through amendments to regional Household Income and Expenditure Survey (HIES) data collection, and/or through add-ons to the Tails system. Data on safety incidents is also important.

41 For further information on the Tails mobile phone and tablet application for collecting small-scale fisheries data in the Pacific see: https://oceanfish.spc.int/en/ofpsection/data-management/spc-members/dd/505-tails-application

Education

Fisheries agencies can promote awareness of the risks of offshore fishing in small boats and how to reduce the risks. They can facilitate access to safety equipment for small-scale vessels, and mandate or facilitate access to safety training through fisheries and maritime training institutes.

Fisheries agencies can also facilitate broader access to post-harvest training modules for small-scale enterprises, for example, those run by the PNG National Fisheries College, the Pacific Community coastal fisheries training team, USP, and national projects.

Regulation

Several forms of regulation could improve HR and GESI in small-scale tuna fisheries. When instituting new regulations, communications campaigns are needed to ensure communities are aware of the new rules, and the new measures need to be adopted and implemented (not just stay 'on paper'). Suggested measures could:

- introduce a binding conservation and management measure (CMM) in the WCPFC that protects small-scale fishers from negative impacts of industrial fishing;
- consider national regulation to protect small-scale fishers from negative impacts from industrial fishing;
    - by introducing fishing exclusion zones (for example, Solomon Islands excludes some industrial fishing from their Main Group Archipelago);
    - by introducing other regulations around seasons, gear, catches;
- develop and enforce national regulations on small fishing vessel safety and equipment. The Pacific Community has attempted to harmonise certain rules (e.g. GEM's model regulations on small boat registration; FAME's sea safety guidelines). The Pacific Community could propose a charter for small-scale fishers to be adopted nationally with Pacific Community support. Inter-agency collaboration between fisheries agencies, maritime and labour authorities will be important to define the measures to be adopted at the national level;
- put in place measures to protect prices for small-scale fishers where industrial fisheries' reject fish are damaging the viability of small-scale fisheries markets.

Development

HR and GESI in small-scale tuna fisheries and post-harvest activities can be improved through sustainable development, which includes social sustainability as well as ecological and economic. Possible activities would be to:

- continue using nearshore FADs to increase accessibility to compensate for catch declines, based on lessons learned regarding factors affecting effectiveness – both biophysical and socio-economic;
- support initiatives for post-harvest improved transport, handling and processing, including measures for quality of fresh fish (e.g. ice) and preservation such as smoking and drying (e.g. tuna jerky);
- in decision-making about small-scale tuna fisheries, and in allocating training and other support, shift from including only fishers as relevant stakeholders, to more realistically include fisher businesses (usually families), and include people from the value chain. This will allow more involvement of women as well as being more realistic about who the stakeholders are;
- seek advice from the Pacific Community FAME Coastal Fisheries Programme staff on initiatives. FAME has extensive historical experience across the region. Advice may increase the chance of success and decrease the chance of repeating past failures;
- undertake a baseline study on the small-scale tuna enterprises currently existing and their sources of finance, to see where women and men and other social groups are engaged and not, and where support could improve HR and GESI.

Tool: gender division of labour analysis[42]

A gender division of labour analysis provides information about the separation of activities and specialised allocation of tasks to women and men, including looking at their age, ethnicity, and so on. Divisions of work are often based on stereotyping of women and men and the roles and positions they can or cannot hold in a given society (which are context specific). These are based on unequal roles and status relations, and they become embedded in structures, including labour markets and small-scale fishing activities. This means that men or women do particular roles, and harvest in some spaces and not others. For example, men travel further out to harvest deep water snappers and tuna while women are more concentrated along the reefs where they glean for invertebrates, molluscs and shellfish.

What are the areas of interest in the division of labour analysis?

- The division of labour is always **human made**. Its forms are socially shaped, thus shaped by gender roles.
- Division of labour concepts are mostly used in an **economic context** (productive and reproductive roles) but can also be used to understand **constituency-based roles** (political + advocacy)

Table 6.2 Tool 1 for gender division of labour analysis

Roles	Reproductive		Productive		Decision-making and voice	
	Women	Men	Women	Men	Women	Men
What are the existing tasks and contributions of women and men in each role?						
What benefits and status do women and men get from each role?						

Interlinked with roles of men and women when harvesting are the use and control of **resources.** What are the differences in resources available to women and men, and how are they related to their roles and responsibilities in fisheries activities?

Table 6.3 Tool 2 for gender division of labour analysis

Resources	Reproductive		Productive		Decision-making and voice	
	Women	Men	Women	Men	Women	Men
What resources do women and men: have access to? have control over?						

The aim of this tool is to identify gender-based inequalities and different needs for each role/task.

These are some guiding questions for this exercise:

- What gender inequalities and needs are expressed in each role, by women/men?
- What gender inequalities and needs are not easily expressed by women/men?
- What inequalities/needs are directly linked to the programme/project (e.g. accessibility criteria)?
- What inequalities/needs are context-specific (e.g. cultural values, traditions)?

42 The gender division of labour analysis tool has been adapted from materials developed by Natalie Makhoul, FAME, the Pacific Community (SPC).

Tool: gendered value chain analysis

The tool for gendered value chain analysis presented in Module 2 can help reveal which part of small-scale tuna value chains are most relevant for improving HR and GESI.

Acronyms

CMM	Conservation and management measure (from the WCPFC)
CPD	Certificate of professional development
FAD	fish aggregating device
FAME	Fisheries, Aquaculture and Marine Ecosystems Division within the Pacific Community
FAO	United Nations Food and Agriculture Organization
FFA	Pacific Islands Forum Fisheries Agency
FIA	PNG Fishing Industry Association
GEM	Geoscience, Energy and Maritime Division of the Pacific Community
GESI	gender equity and social inclusion (outside this handbook the word 'equality' is usually used, rather than 'equity', in GESI)
HR	human rights
HRBA	human rights-based approach
IMO	International Maritime Organization
NGO	non-governmental organisation
OFP	Offshore Fisheries Programme in the Pacific Community
PICTs	Pacific Island countries and territories
PNG	Papua New Guinea
SDGs	United Nations Sustainable Development Goals
SPC	the Pacific Community (formerly the Secretariat of the Pacific Community)
USP	University of the South Pacific
WCPFC	Western and Central Pacific Fisheries Commission