

# The characteristics of Pacific Island small-scale fisheries

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## Introduction

This article is condensed from a paper prepared for the FAO Pacific Regional Consultation on the development of Guidelines for Securing Sustainable Small-Scale Fisheries held at SPC headquarters in Noumea from 12 to 14 June. A description of this consultation is provided by an article in this newsletter (p. 6) entitled “Securing sustainable small-scale fisheries”, by Michael Sharp and Michel Blanc.

This is not a comprehensive review, but a short paper that provided a starting point for discussion by the workshop participants, as part of their task of providing Pacific Island-specific input into the FAO process for developing a global voluntary instrument on small-scale fisheries. More information about this international process can be found elsewhere, particularly at <http://www.fao.org/fishery/ssf/guidelines/en>, but once finalised, this FAO instrument will provide an agreed set of basic principles to help governments, and others involved in fisheries governance or implementation, to ensure that small-scale fisheries are sustainable, socially and economically, as well as biologically.

### FAO SSF Guidelines

The FAO Guidelines for Securing Sustainable Small-Scale Fisheries, or FAO SSF Guidelines, are expected to provide objectives and measurable indicators against which national progress towards the ultimate goal of sustainable small-scale fisheries can be assessed, and will be the starting point for the development of a toolbox of more specific advice that can be used as appropriate to the circumstances of individual communities and fisheries. It is also likely that this instrument will guide international programmes of assistance applied to appropriate governance and sustainable development in the small-scale fisheries sector, particularly in developing countries.

The process of developing this instrument has received little input from Pacific Island states to date, despite the importance of small-scale fisheries to a large proportion of the Pacific Island population. When it comes to fisheries, Pacific Island states tend to look towards regional<sup>1</sup> rather than international institutions to implement their obligations to collaborate in the conservation and management of trans-boundary fisheries, and in sharing scientific, development, standard-setting and advisory services on other fisheries. They tend to participate less in global fishery processes than states in other regions.

## How are Pacific Island small-scale fisheries different?

Globally, small-scale fisheries are indeed diverse. They are not so diverse and discrete that different regions can be classified into entirely separate categories, but there is often a different mix of small-scale fishery types in different regions.

In general, small-scale fisheries in the Pacific Islands region — defined here as the SPC work area<sup>2</sup> — may differ from the global average in the following ways:

- Artisanal fishing rights and customary or community marine tenure are more common than in most other regions.
- Pacific Islanders who fish form the majority of the population in many Pacific Islands, and most Pacific Islanders (outside of the Papua New Guinea highlands) live near the coast. The sea, and its uses, pervades the entire national culture of many Pacific small island states.
- Fisheries are not usually the “livelihood of last resort” for the poorest of the poor, but often an inherited speciality carrying certain rights.
- Freshwater fisheries are not particularly significant at the regional scale. Freshwater fisheries are extremely important in Papua New Guinea, but most

<sup>1</sup> Including the Secretariat of the Pacific Community (SPC), the Pacific Islands Forum Fisheries Agency (FFA), the Office of the Parties to the Nauru Agreement (PNAO), the Te Vaka Moana arrangement (TVM), and the US Western Pacific Regional Fisheries Management Council.

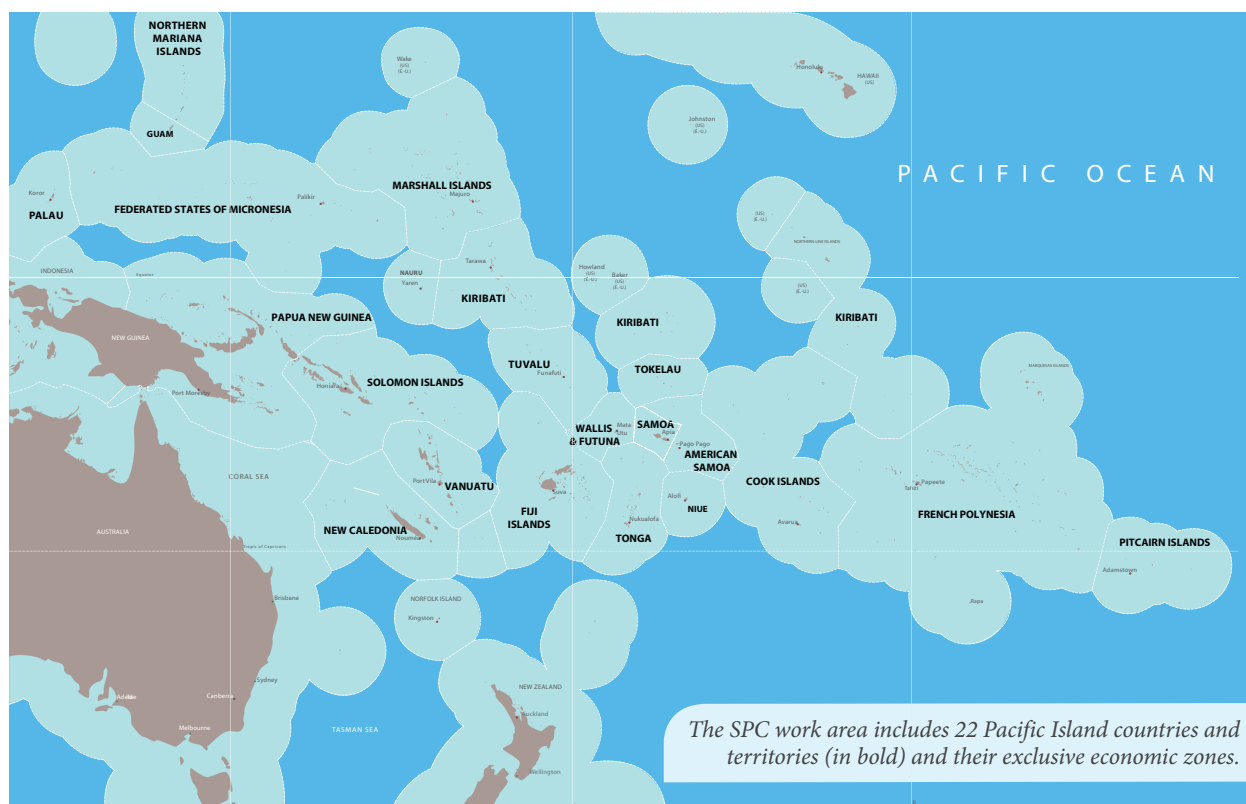
<sup>2</sup> The SPC work area includes fisheries waters of American Samoa, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna (see map on next page).

small islands do not have significant freshwater systems, and even in the rest of Melanesia where rivers are more substantial, most freshwater species are not particularly attractive to consumers compared to marine or brackish-water fish.

Since the vast majority of residents of small Pacific Islands dwell on the coast with access to fresh fish, there is less need for comprehensive national processing, distribution and trade networks than in continental regions, and a much smaller proportion of the people involved in small-scale fisheries fall into the category of “fishworker” as defined in the FAO draft guidelines. Small-scale fisheries producing products for export are a notable exception.

- Although it is difficult to make absolute comparisons, in general the fishery resources available to small-scale fishers in many Pacific Islands appear to be less overexploited — on average — than is reported to be the case in most other developing country regions. This is probably due both to the isolation of coastal fishing areas from large consumption centres, and traditions of marine custodianship.
- Pacific Island small-scale fisheries are notably multi-species in nature, usually with more than a hundred finfish species and dozens of invertebrate species regularly being marketed or consumed. Very little is wasted, and nothing is discarded unless it is a species known to be totally unfit for consumption.

- Because of the lack of shallow slopes and continental shelves (with the exception, again, of Papua New Guinea), there is a marked distinction between coastal and oceanic areas. Benthic trawling is not possible around most Pacific Islands, and coastal fisheries consist overwhelmingly of coral-associated fish and pelagic fish that can be caught close to reefs.
- On many islands, particularly un-urbanised islands, the subsistence fishery is larger than the commercial fishery, but many fishers catch fish both for consumption and for sale. In contrast to some other regions where the highest-value component of the catch is marketed and where more unsaleable items are reserved for family consumption, many Pacific Island fishers keep the best of the catch for themselves and market the rest. Traditionally, there is little incentive to earn more money than is necessary to satisfy immediate needs, and any obvious surplus is normally shared with the rest of the community.
- On many islands, oceanic resources are available in relatively close proximity to shore and thus it is often relatively feasible for fishers to switch their effort from more vulnerable reef resources to more abundant oceanic resources, if required.
- There are few trans-boundary issues in Pacific Island small-scale fisheries that involve international law. The only shared coastal boundaries in the SPC region are between Papua New Guinea and Indonesia. However trans-boundary considerations can be



extremely important at the local level. Marine rights ownership or traditional area tenure is highly codified in some Pacific Island nations.

- Considering all fisheries combined (large-scale and small-scale), the Pacific Islands region produces far more fish than it consumes, by a factor of at least 10 to 1. The exports are almost entirely tuna from industrial fisheries and the local consumption is almost entirely produced by small-scale fisheries, but there is the potential for considerable future food security in changing the balance of this equation.

## The small-scale fisheries sector in the Pacific Islands

Sharp and Blanc (this newsletter, p. 6) describe what is meant by “small-scale fisheries” and provide an idea of their economic importance to the Pacific Islands region.

In the Pacific Islands region, the line between large-scale and small-scale fisheries is drawn essentially between commercial tuna fisheries (largely purse-seine and longline, with some pole-and-line) and all other fisheries. The grey areas would probably be oceangoing tuna troll vessels (of which there are now few based in the SPC work area), the larger deepwater snapper boats, and occasional unsuccessful trial fishing by trawlers of external origin. Papua New Guinea is, however, a special case because of its extensive shelf area, and there are other fisheries that could be considered large-scale.

The Secretariat of the Pacific Community may itself provide another yardstick. SPC’s Coastal Fisheries Programme generally works on small-scale fisheries, and its Oceanic Fisheries Programme generally works on large-scale fisheries, although there is some sharing of responsibility when it comes to the monitoring of artisanal tuna fishing.

Several estimates have been made of the total volume of Pacific Island small-scale and large-scale fisheries over the years:

In 1996 an SPC review<sup>3</sup> stated: “The total coastal fisheries production from the region amounts to just over 100,000 tonnes per year, worth a nominal USD 262 million [*in terms of landed value at market prices in Pacific Island economies*]. About 80% of this production is from subsistence fishing.” This was an extremely approximate

estimate, but the first time that a reasonably well-informed summary — taking account of the likely gaps as well as the available statistics — had been attempted. At that time there was no valuation available for the large-scale tuna fisheries in the region, but for 1996 the total tuna catch from the same area was estimated to be just over 956,000 tonnes of skipjack, yellowfin, bigeye and albacore tuna.<sup>4</sup> Given that over 80% of this catch was skipjack, the total landed value would have been around USD 750 million. In short, in the mid 1990s, small-scale fisheries catches in the Pacific Islands region were about one-tenth of large-scale fisheries in terms of weight, and about one-third in terms of nominal landed value.

More recent estimates have been based on the work of Bob Gillett.<sup>5</sup> Coastal small-scale (subsistence/commercial) fisheries production for the region is estimated to be 110,000 tonnes, with a value of at least USD 272 million to Pacific Island economies. This local value was estimated to be 30% more than the combined contribution of locally-based large-scale (overwhelmingly tuna) fisheries to Pacific Island economies. Expressing the tuna catch in the Pacific Islands region in terms comparable to the 1996 figures provided above, the total tuna catch from the same area in 2010 was 1,755,000 tonnes and the landed value would have been approximately USD 2.2 billion. In short, in the late 2000s, small-scale fisheries catches in the Pacific Islands region were about one-sixteenth of large-scale fisheries in terms of weight, and about one-eighth in terms of nominal landed value.

Over the past 15 years the total Pacific Island small-scale fisheries sector is estimated to have not significantly increased in volume or value, while the large-scale sector has expanded dramatically.

However, most of the value of the landed tuna catch accrues to the foreign vessels that do most of the tuna fishing, and it is the contribution of locally-based large-scale tuna fisheries to Pacific Island economies that is most directly comparable to the value of small-scale coastal fisheries. In terms of direct benefit to Pacific Island states and territories, large-scale tuna fisheries still lag behind small-scale fisheries.

Of course the potential to increase future Pacific Islands benefit from tuna fisheries is much greater, and Pacific Islands are gradually carrying out more of the large-scale tuna fishing and processing that has hitherto been mainly the province of Pacific Rim countries.

<sup>3</sup> Dalzell P.J., Adams T.J.H. and Polunin N. 1996. Coastal Fisheries of the Pacific Islands. *Oceanography and Marine Biology: An Annual Review* 34:395–531.

<sup>4</sup> Data from SPC OFP Catch-Effort Database Query System (CES). Note that the area of this estimate includes only Pacific Island EEZs and adjacent high seas and does not include EEZs of non-SPC members.

<sup>5</sup> Gillett R. 2009. Fisheries in the economies of Pacific Island Countries and Territories. Pacific Studies Series, Asian Development Bank, World Bank, Forum Fisheries Agency, Secretariat of the Pacific Community, and Australian Agency for International Development. 520 p.

## Types of small-scale fisheries in the Pacific Islands

Not a lot has changed in the broad structure of the Pacific Islands small-scale fisheries sector since the review by Dalzell et al. in 1996 (see footnote 3), but more recent work — despite the main focus of attention turning to oceanic, industrial, tuna fisheries — has added more detailed information. Notable amongst these is the work led by Bob Gillett on the contribution of fisheries to Pacific Island economies (see footnote 5) the reports on the state of Pacific Island reef fish resources by the SPC Coastal Fisheries Science and Management Section from 2002 to 2007,<sup>6</sup> and the *Future of Pacific Islands Fisheries* review<sup>7</sup> in 2010.

The following types of small-scale fishery are most obvious in the Pacific:

- **Boat-based multispecies reef food fisheries.** These may be commercial, subsistence, or anywhere in between, and vessels may range from paddle- or sail-powered canoes to small inboard or outboard boats. Usually fished with lines or gillnets, and targeting a multitude of species, these fisheries are the major domestic source of protein for Pacific Islanders, particularly in rural areas, but fish from them are increasingly being transported to urban markets or, particularly in northern Micronesia, to neighbouring island countries.
- **Spear fisheries.** These are usually boat-based when commercial and target the most lucrative market fish, but are often carried out at the subsistence level and from shore. Many Pacific Islands have now banned the use of scuba for spearfishing because commercial spearfishing, particularly at night, has



*Paddle- or engine-powered canoes are used in almost all Pacific islands, including in Tarawa, Kiribati where this picture was taken (image: M. Kronen).*



*Spearfishing seems harmless when done for subsistence, but it can be destructive when used at a commercial scale, especially at night (image: J. Applebaum).*

led to rapid depletion, particularly of large Lutjanidae, Serranidae and Scaridae. Spearfishing, however, can be extremely selective and is also an effective way of targeting Acanthuridae and Balistidae, which, while less favoured by many consumers, are usually more abundant and resilient.

- **Reef gleaning and other non-boat-based reef and lagoon fishing, including handlining, traditional fish corrals and leaf-sweeps.** This is usually the fishery (or suite of fisheries) with the most participation by women in the Pacific Islands.
- **Freshwater fisheries.** These are limited in extent, except in Papua New Guinea. Eel trapping is practised in some places, but most Pacific Islands do not have well-developed rivers or freshwater lakes, and many of these freshwater systems have been infiltrated — or sometimes overrun — by Mozambique tilapia, which is not a favoured food fish. Freshwater shellfish are consumed or marketed in large numbers in Fiji and parts of Melanesia, however, and constitute another important fishery for women.
- **Export fisheries for live aquarium fish (not usually overlapping with food fisheries).** These usually operate under tight management conditions and are thriving in a number of places, particularly those with adequate airfreight connections.
- **Live food fish export fisheries.** Shipping mainly to China and Taiwan, these fisheries are operating at a much lower level than previously, probably not because of gross overexploitation, but because of more stringent conditions imposed by Pacific Island states to maintain sustainability of fisheries which interact strongly with local food fisheries. The

<sup>6</sup> See SPC coastal fisheries website (<http://www.spc.int/coastfish>) where all of the reports referenced in this paper can be found online.

<sup>7</sup> Gillett R. and Cartwright I. 2010. The future of Pacific Island fisheries. Noumea, New Caledonia: Secretariat of the Pacific Community. 139 p.



opportunities for foreign operators to “make a fast buck” have been greatly reduced.

- **Non-fish export fisheries, usually for relatively imperishable products such as beche-de-mer (sea cucumber), trochus shell and wild seaweed.** These usually involve collection by part- or full-time locally based reef gleaners and divers selling to centralised fully commercial middlemen and exporters. Although limited in extent, some of these fisheries may be extremely important economically in certain countries, and many are over-fished, sometimes severely.
- **Deepwater snapper (outer reef slope and sea-mount Lutjanidae) line fisheries, addressing mainly local markets.**
- **Nearshore tuna longline export fisheries (mainly for albacore, bigeye and yellowfin tuna).** It is difficult to draw a line between these and industrial tuna fisheries and they might be better classified among the large-scale fisheries, particularly as they are managed under the same mechanisms.

In the future, the work being carried out by SPC to help Pacific Island fisheries departments in developing, harmonising methodologies for, analysing, and bringing together the outputs of national coastal fisheries monitoring processes should make it possible for SPC to produce a regular regional assessment of the status of coastal and small-scale fisheries. This could be analogous to the regular oceanic fisheries assessments that SPC currently produces, including the movement of

indicators of biomass and fishing mortality relative to agreed reference points, for fisheries of high concern. For small-scale fisheries, additional indicators relating to socio-economic reference points (such as food security indices, sex-ratios, and local fish prices) would also be very important.

## Small-scale fishery conservation and management initiatives in the Pacific Islands

Although in the summary above it is suggested that Pacific Islands have had the opportunity to conserve their small-scale fisheries to a greater extent than developing countries in other regions, the garden does not consist entirely of roses and the extreme dependence of Pacific small island states on fisheries makes it crucial that any problems are addressed. The following are some of the areas where Pacific Islands have been concentrating their effort:

**Marine protected areas:** The tradition on many Pacific Islands of occasional moratoria on all, or certain types of, fishing lends itself to the modern concept of the marine protected area, which many Pacific Island countries have embraced with enthusiasm, not only for the purpose of providing biological refugia, but also as a legislative vehicle for the purpose of establishing community-based management in areas where traditional area rights have been eroded. Reef fish spawning aggregation areas may also be protected at critical times of year in some countries.



*Trochus and sea cucumber fisheries are, economically, the most important non-fish fisheries in most Pacific Islands (images: K. Pakoa (left) and E. Tardy (right)).*

**Alternative livelihoods:** For areas where small-scale coastal fisheries are under severe stress or where limits have to be introduced, several strategies to create alternative livelihoods may be applied, depending on the area:

- Nearshore fish aggregation devices (FADs). They have been deployed by many Pacific Islands within the past four decades specifically to enable small-scale fishers to more cost-effectively target the pelagic resources that are usually more abundant and more easily sustainable than demersal and reef-associated fish. With recent concern over the role of drifting oceanic FADs in facilitating overfishing of bigeye tuna and increasing bycatch by purse-seiners, it has become necessary to emphasise the differences between the nearshore anchored FADs used by small-scale fisheries and the oceanic drifting FADs used by large-scale fisheries.<sup>8,9,10</sup>
- *Bagan* raft-based fishing for small pelagics (sardines, scads, anchovies, fusiliers etc.). Like the FAD, this is another innovation imported to the Pacific Islands from Southeast Asia, with trials currently underway in Marshall Islands.<sup>11</sup> As with any fishing method, over-use can be counterproductive, but *bagan* fishing targets resources that are currently little-used in the Pacific Islands and could potentially supply the live bait that might make pole-and-line fishing for skipjack economically viable again, as well as providing food-fish alternatives. Unlike inshore baitfishing by tuna pole-and-line vessels, which gave rise to a number of social issues in the heyday of Pacific Island pole-and-line fishing, these baitfishing rafts would be operated by fishing rights owners or local communities themselves.
- Tourism-based marine livelihoods. Several Pacific Islands have found that their inshore marine resources provide more value when viewed as non-extractive resources, or to support tourist sportfishing or game-fishing. Although these tourism-based alternatives tend to arise where tourism is already extensive, such as in Palau or eastern Polynesia, there are also areas where specialised tourism may develop as a result of a highly valued marine resource-based tourism opportunity, such as the catch and release bonefish rod-fishery at Kiritimati in Kiribati.
- Small pond aquaculture. It is being promoted by SPC as an alternative to reef food-fishing, and to develop food-security resilience in the face of climate change. Most Pacific Islands do not have a strong tradition of



*Small fish ponds in Papua New Guinea  
(image: Ben Ponia).*

aquaculture — reef and nearshore pelagic resources have traditionally provided most of their protein — but with expanding populations this is no longer the case in many areas, particularly peri-urban areas.

**Community-based management:** It has been extensively promoted by SPC and most Pacific Island governments in cases where such traditions are not already strong. It has become generally recognised that the governments of small-island developing states are currently ill equipped to directly manage small-scale reef and lagoon fisheries with their myriad landing points and hundreds of species, and that sustainable management is only likely to be effective if a degree of management responsibility is decentralised to local communities. Depending on the strength of traditional mechanisms, this devolution may be readily accomplished, or may require careful cultivation and support. There has, however, been a notable resurgence in community-based small-scale fisheries management in a number of areas in recent years, following a general decline in the latter decades of the 20<sup>th</sup> century.

**Bans on scuba or night spearfishing:** One specific fishery that seems to lead to problems — particularly for the larger predators within the reef fish assemblage — wherever it occurs is the scuba spearfishery, especially when carried out at night. The modern advent of underwater torches and breathing gear has made spearfishing much more efficient,<sup>12</sup> and many Pacific Islands have placed regulatory bans on scuba spearfishing as part of their strategy to reduce overfishing of certain species.

<sup>8</sup> [http://www.spc.int/DigitalLibrary/Doc/FAME/Brochures/Anon\\_12\\_PolicyBrief19\\_FADs.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/Brochures/Anon_12_PolicyBrief19_FADs.pdf)

<sup>9</sup> [http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/137/FishNews137\\_36\\_Adams.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/137/FishNews137_36_Adams.pdf)

<sup>10</sup> [http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/136/FishNews136\\_35\\_Taquet.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/136/FishNews136_35_Taquet.pdf)

<sup>11</sup> [http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/136/FishNews136x\\_14\\_Bagan.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/136/FishNews136x_14_Bagan.pdf)

<sup>12</sup> See Gillett R. and Moy W. 2006. Spearfishing in the Pacific Islands: Current status and management issues [IP7]. Noumea, New Caledonia: Secretariat of the Pacific Community, 5th Heads of Fisheries Meeting, Noumea, New Caledonia, 3-7 April 2006. 77 p. ([www.spc.int/digitalibrary/doc/fame/meetings/hof/5/ip7.pdf](http://www.spc.int/digitalibrary/doc/fame/meetings/hof/5/ip7.pdf))



## Wider issues

**Assessing progress in small-scale fisheries:** In any strategy, plan or policy it is necessary to know the starting point (where we are now), and what we want to achieve (goal), and to have some way of measuring progress towards that goal. The problem with Pacific Island small-scale fisheries is that there are few statistics available to define the starting point and the goal, and few monitoring programmes capable of assessing progress at the level of frequency and accuracy useful in national planning. In part this is due to the fact that many fisheries are managed at the local or community level, with little need for formal statistics, but the point remains that governments need to know what is happening, they may need to step in where community-based management is inoperative due to externalities or conflict, and they are requested by the Code of Conduct for Responsible Fisheries to report on progress to FAO.

**Vulnerability to war, civil unrest, climate change, and natural disasters:** The Pacific Islands region is comparatively peaceful, and while cyclones and tsunamis may cause widespread devastation, it is not usually on the scale experienced in other developing regions. The potential effects of climate change are thus possibly more significant to this region, relatively speaking, than natural or social disasters. However, climate change may be less rapid than social and population change in its effect on Pacific Island small-scale fisheries.

**Social conditions:** In much of Pacific Island society, fishing is a respected livelihood. Fishing requires courage, it provides the main source of protein for many communities, and it reinforces the community's links with the sea. Pacific Island social consciousness does not normally need to be raised about the plight of the fisher. There is usually at least one in every family.

However, where tradition has broken down, issues may arise. Urbanisation, and drift of young people from rural areas to the town in the hope of advancement creates problems in fisheries — both for the community that originally owned the fishing rights at the site of the town, and for the new arrivals who must negotiate for the right to fish, if that is the only way they can feed themselves. And high population densities often create problems for fishery resources themselves.

In contrast to the FAO draft Small-scale Fisheries Guidelines, this brief paper has concentrated on fishers and the capture sector rather than fishworkers and the postharvest sector, because paid employment is not a major feature of Pacific Island small-scale fisheries (although it is in Pacific Island large-scale fisheries).

There are, however, certain small-scale fisheries, such as aquarium fisheries and invertebrate export fisheries, where employment or other contractual arrangements are the norm and where the rights, conditions and the health of fishers need to be focused upon. The use of underwater breathing apparatus has caused high incidences of injury or death in certain areas, and loans may be provided by export operators for the purchase of fishing gear or outboard motors that may be difficult to pay back. Contracts for aquarium fish collectors may be unfair.

**Sex-specific roles:** This varies by country. SPC compiled the results of its household fishing surveys in villages in 17 different groups of Pacific Islands from 2003 to 2007.<sup>13</sup> Lumping all village fisheries together, the range was from 80% male fishers in villages in French Polynesia, Federated States of Micronesia, Samoa, and Tuvalu, to approximately 50% males in Fiji, PNG, Wallis and Futuna, and Vanuatu. However, these surveys did not usually take into account commercial and urban-based small-scale fishing. Looked at across the region as a whole, it is men who are mostly involved in vessel-based fishing, and women who dominate reef gleaning.

When it comes to post-harvest aspects of the fisheries, little quantitative information is available about the participation of men and women, apart from those relating to processing the products of large-scale fisheries, where women comprise most of the workforce. In small-scale fisheries, fishworkers are not such a large component of the sector as in other regions.

## Conclusion

Hopefully without being dogmatic, I have tried in this article to describe the main characteristics of small-scale fisheries in the SPC Pacific Island work area, and to draw attention to some of the main possible points of divergence from the typical small-scale fishery in other developing regions.

Chief among these differences are probably the relatively high status of fishers, the greater prevalence of resource use or ownership rights, and the greater proportion of local consumption versus trade. The fishers of the Pacific Islands region look forward to participating in the agreement of a set of international guidelines that take into account their particular characteristics rather than exclusively targeting the problems identified by continental developing regions. Populous as those regions are, small-scale fisheries do not quite pervade the entire national culture, nutrition and economy as they do in many Pacific Islands.

<sup>13</sup> Kronen M. and Vunisea A. 2009. Fishing impact and food security – Gender differences in finfisheries across Pacific Island countries and cultural groups. SPC Women in Fisheries Bulletin 19:3–10. ([http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/WIF/19/WIF19\\_03\\_Kronen.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/WIF/19/WIF19_03_Kronen.pdf))