

Women's fishing participation in Fiji (with emphasis on women's fisheries knowledge and skills)

by Aliti Vunisea, University of the South Pacific

As in other Pacific Islands, women dominate in the subsistence fishing sector, with increasing involvement in the local commercial fishery. As fishers for home consumption, women contribute significantly to the nutritional needs of the family. In addition, the commercialisation of previously subsistence target species results in women actively participating in the market economy. Thus socially-defined women's fishing participation as subsistence fishers has to accommodate the change the subsistence fisheries are undergoing.

In the traditional context, fishing methods and technologies were socially or communally organised and monitored. Fishing was a way of life, with fishing activities defined within traditional societal roles. Although major participants in social activities or happenings, women were predominantly disadvantaged by traditional restrictions or taboos. The ocean sustained people's livelihood; thus its sustainability was entrenched in beliefs, customs or traditions. Such traditions or customary practices mostly require men's participation, while women, who are normally described as not actively involved in these traditional rituals, substantially provide support for the family and continue with normal community commitments.

Changing fishing patterns and emphasis have resulted in increased fishing effort and the acquisition of modern fishing methods and technologies. In the process traditional fishing techniques and technologies, which were a safeguard against misuse or over-exploitation of resources, are either bypassed or just totally lost.

The shift in focus in fishing practices and emphasis has been influenced primarily by the monetary needs generated by modernisation and people's changing lifestyles and food preferences. Apart from this, enormous consumption needs exert pressure on marine resources by increasing coastal populations and peri-urban and urban populations who depend on the local market for their seafood supply.

Also obvious is the increase in fishing effort and sophistication in fishing technology due to competition for resources by local commercial (licensed) fishers. Under current regulations, licensed fishers are allowed to fish up to the high-water mark, which is described as state-owned. To indigenous Fijians or custodians of **I qoliqoli** (traditionally defined fishing areas) the near coastal areas, including reef flats, are **i kanakana** or customary subsis-

tence fishing areas. Thus increased fishing activities within the inter-tidal zone by licensed fishers have encouraged intense fishing participation by locals.

Traditionally, fishing techniques or technologies were largely governed by species availability and natural factors such as the weather, seasons, winds, tides and moons, while current fishing focus for areas affected by commercialisation is largely influenced by the market demand (price on the market, availability of buyer, preservation possibilities).

Women's commercial involvement, although small-scale, is regular, consisting of weekly selling of molluscs, crustaceans and a diverse range of coastal edible species. For example, women from the Verata area sell ark shells (**andara, kaikoso**) almost weekly (at an average of about 10 bags per week, 30 kg per bag), at the same time sending 6–8 bags of **kaikoso** to buyers from the Western Division (fortnightly). Women's rate of fishing and subsequent selling, mostly occurring on a weekly and, during certain seasons, on an almost daily basis is more regular than men's fishing activities. They also harvest a diverse range of species when compared to men, whose efforts are focused on a narrower range of more lucrative species such as beche-de-mer, octopus, lobsters and larger reef fishes.

Official statistics and documentation, however, do not portray women's fishing and local commercial activities as important, because their fishing participation is usually interpreted as basically subsistence and without monetary significance. The changing face of the subsistence sector and the gradual commercialisation of basic marine food sources have been substantially overlooked. The influence of commercialisation is evident in increased fishing effort, the presence of middle buyers in villages and selling within the community. This trend has resulted in the lack of regard for women's fishing participation and at the same time the neglect of their fishing activities on the reef and coastal ecosystems.

Traditionally, there were defined gender roles in fishing, with women fishing the shallower coastal areas while men ventured out to the deeper seas. Thus women were associated and more familiar with the immediate coastal and reef areas. Men, on the other hand, engaged mostly in ritualised fishing activities which were only occasionally practised for specific traditional occasions. These traditional fishing ventures, which were mostly practised in deeper-sea areas, involved men from the master fishers'

clan, and usually targeted certain species only (turtles or specified finfish species).

Currently women increasingly fish into previously male-defined fishing areas and male-related fishing activities, with fishing effort becoming more pronounced to meet both consumption and market needs. Beche-de-mer is now also increasingly being dived for by women. Women's fishing activities, coupled with men's fishing participation, exert enormous pressure on reef resources.

In Verata, women sometimes fish five days a week, with Wednesdays, Thursdays and Fridays being commercial fishing days. Men whose wives are not fishers also fish specially for marketing purposes on the same days. The area has extensive foreshore flats, with prominent sheltered inshore and offshore reefs that provide the base for its rich diversity of marine species. With the current rate of exploitation, some important reef species may be depleted or totally lost.

Women's fishing methods

Fishing methods employed by women on coastal flats are generally very simple, with tools and technologies primarily traditional. In most cases women still catch fish barehanded or use simple nets and lines. Likewise when gleaning, gathering or diving for certain species, sticks or rods are the only equipment used. Women's fishing methods may sound and look simple, but in reality they are complicated; they require extremely adroit use of the senses, and skilful utilisation of fisheries knowledge.

In addition, the intimate knowledge and understanding the women have of their immediate environment enable them to easily identify and catch prey. Women are able to discern rock, seagrass and mud types where certain species are found. And for that matter they are also very familiar with areas colonised by certain species. Thus when women are out fishing or gleaning on the reefs, they don't just wander about but are clustered in different locations depending on the species they are after. At the same time there is a difference in areas fished, as women frequent the outer reef areas for commercial fishing purposes while fishing for subsistence is mainly confined to the immediate nearshore areas.

Fishing methods employed by women revolve around a few principles or basic methodologies. Inland or freshwater fishing generally includes net-fishing, setting traps, stupefying fish and diving for or gathering freshwater mussels. Coastal fishing basically includes gleaning on reef flats, line-fishing, net-fishing and the setting of traps and stupeficients. Some of these fishing methods are described below.

Inland fishing techniques

Small hand-nets and larger nets are commonly used by women when fishing in groups along rivers, lakes and ponds. Nets are firmly lodged in mud or sand, while women feel into holes, under grass or weeds with their bare hands.

Women have an amazing ability to grip and pull fish or eels out from their hideouts. Those that escape are trapped in the nets. Larger nets are used to block off creek or stream openings. Fish are then chased into these nets by splashing on the surface of the water.

Another variation of net-fishing is when a group of about 10 to 16 women wade around in a lake, in waist-deep water, removing weeds and grass. The activity is continued until the water becomes muddy, thus stupefying fish and eels.

Consequently fish either swim to the surface to get to clearer water, try to escape along the dry banks or lie still at the bottom of the lake. When a woman steps on a fish, she keeps her feet on it, dives down and grips it by the gills before killing it. Fish that escape to the surface of the water are caught in nets, while those that escape to the banks are caught barehanded.

Line-fishing is also commonly employed by women. There are many variations of line-fishing, depending on location. In inland areas, short rods are sometimes used. Bait includes worms, fish, octopus, shellfish and hermit crabs (**kasikasi**). Like their counterparts living along coastal areas, women are familiar with the best times, winds and weather for fishing. In inland areas, line-fishing is resorted to after major floods or during rainy weather, when fish leave their abodes and feed in calmer areas of ponds and rivers.

Women often identify fish by how they bite or nibble on the lines. For instance mullets nibble the bait (dough), spotted scad only touch the bait very lightly, while the mangrove jack and tilapia pull strongly or grab the bait. When a fish is hooked, it is then pulled in by constant tightening and slackening of the line until the fish tires. Once the type of fish feeding is identified, the lines, bait and hooks are changed. Thus when line-fishing, women are armed with an assortment of lines and hooks.

Another major resource of inland locations is the freshwater mussel (**kai**), which is usually dived for to depths of two to three metres, using goggles and small wiremesh baskets or pieces of cloth (**sulu**). When diving for **kai** women have a **sulu** tied around their waists, with the other end loosely tied around their necks. The **sulu** then forms a kind of



Surveyors carry out village surveys during the socio-economic study of the freshwater clam (*kai*) fishery in the Ba Province, Fiji

pouch where the **kai** is stored while women fish. If full, the weight of the **sulu** could drag the wearer down. In the course of my research, a young mother died in Nadali village from this practice.

Coastal fishing activities

For coastal locations, gleaning and collecting on the sand flats are women's major fishing activities. In addition to this women also line-fish, set traps and net fish along nearshore areas. Gleaning includes the collection of a wide range of species along reef flats. Women know exactly where to look for certain species and how to dig, prise or pull them out from their abodes.

In outer islands, such as Totoya in the Lau Group, women depend primarily on their skills. Traps are set on fringing reefs to herd fish into shallower areas before they are chased and caught barehanded. Traps set along the shoreline, which are usually circular or oval, are normally checked during neap tides or rainy and stormy weather, when certain species may take refuge in enclosures.

Gleaning basically includes gathering on sand or reef flats, picking, digging or prising off shellfish from sand or rocks. A diverse range of techniques is employed by women when gleaning along reef and sand/mud flat areas. Spider conches, some beche-de-mer species, seaweed, sea hares, jellyfish and other such species are collected on the dry reef flats or shallow lagoon-



A fisherwoman shows the *kai* she has collected while diving

al areas. Recently, however, species of beche-de-mer are increasingly dived for in deeper lagoonal areas or in outer reef areas. Pen shells, ark shells and sea worms are dug up from under 2 cm to 6 cm of sand. Hands or simple rods are utilised for this purpose. Some shellfish, such as the different types of oysters which are cemented onto rocks on the reefs, are removed or cracked open by hitting the shellfish with another rock. *Tridacna*

species, which are now commonly dived for at reef edges or slopes, are removed from rocks they adhere to using diving goggles and steel rods.

There are many variations in the methods of line-fishing employed. Some exceptional ones include **siwa nunu**, **siwa qalo** and **basikeli**. They are all various ways of line-fishing on foot. **Siwa nunu** is also fishing on foot, but in waist-to neck-deep water.

In **basikeli** women are suspended in water and line-fish. In this case the fisher sees the fish before the line is thrown out. Since the water is deep, women stay afloat by treading water while fishing. This is why the fishing style is likened to bicycle riding.

Women also have unique ways of adapting methods and gear to suit the occasion. In Totoya during moonless nights, the huge bay adjacent to the village is covered with lights. Women have discovered that certain mackerel species have a taste for flour dough. Coupled with this is a weakness for bright lights.

Thus on such nights women are out in punts in the bay, with their pressure lamps suspended from sticks firmly lodged in the boat. The lights attract the fish, which come in masses. Women drop their lines over the side of the boat and the fish snap them up. The villager call this type of fishing 'Korea' because it is likened to the method of Korean fishermen who use lights to catch baitfish in Fiji's lagoons.

Net-fishing techniques are numerous, with most of the activities conducted in groups. Small hand-nets or scoop-nets (**taraki**), larger hand-nets (**lawa cua**) and throw-nets (**lawa cola**) are the most common in rural villages. In some of their netting activities women use stupeficients (**duva**). The stem of the plant is usually crushed until fine, then mixed in water and stored in bottles which are broken on shallow lagoon areas, resulting in the poisonous mixture flowing over a larger area and stupefying fish. Although nationally banned, **duva** is still used in some places.

As for net-fishing in inland locations, two or four women stand guard at the nets while the others come from the opposite direction, beating or splashing the water to chase fish into waiting nets. The nets are lifted when there is a lot of movement within them, showing that fish are trapped, or when the other women come up to the edges of the nets.

At other times scoop-nets are placed around rocks while the women feel with their hands into crevices and holes to either catch fish or chase them out. Fish that are not caught are trapped in the waiting nets.

In other method of net-fishing a group of more than ten women form a semi-circle; holding scoop-nets in their hands, they move landward, thus forcing fish to shallower water or forming a human trap and finally catching the fish with their nets or on the dry sand.

Other specific fishing activities vary depending on the location, marine habitat, target species, season and accessibility to markets. There is, however, a marked difference between fishing activities conducted in rural isolated areas and those in rural locations with access to urban centres.

Fishing in more remote areas is more sporadic, with fishing pace and effort only sufficient to cater for consumption needs. In near-urban areas, on the other hand, there is an evident concentrated effort in fishing activities, with techniques and target species influenced more by market demand and opportunities. At the same time, people's distribution priority has changed, with the best part of the catch sold in urban centres and only the surplus consumed.

Because women's fishing activities are simple and do not involve the use of sophisticated technology, they can be termed sustainable in the sense that locations fished occasionally vary. Their target species also vary and are usually seasonal, giving certain species time to regenerate. Because women use simple fishing gear, the impact of their fishing activities is likewise minimal.

There is a need to understand and promote the fishing methods that women are using. Development schemes and conservation strategies should attempt to include women's basic fisheries knowledge. At the same time attempts should be made to enhance women's knowledge and skills. Women's fishing activities, although small-scale and involving simple techniques, could contribute positively to the sustainable utilisation of nearshore marine resources.

