

Traditional fishing methods, *raui* and gender roles in Arorangi village, Rarotonga, Cook Islands

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Introduction

In this paper, we discuss the traditional fishing methods used by the people of Arorangi village in Cook Islands, their management of the fisheries (*raui*) and gender roles in fishing.

The village of Arorangi is located on the main island of Rarotonga in the southern Cook Islands.



Figure 1. Satellite view of Rarotonga, Cook Islands, showing coral reefs and coastal villages (Source: <http://earth.google.com>).



Figure 2. Districts of Rarotonga, and the *raui* areas around the island.

Rarotonga is a high volcanic island and has a round rectangular shape (Figs. 1 and 2). Arorangi is located on the western side of the island.

During the pre-European contact period, the people of Arorangi lived inland near the mountains. But later they moved closer to the coast for easier trading of goods and access to the sea. Arorangi was formerly known as Puaikura, and the current village settlement forms a ribbon-like shape along the coast with only a few people living closer to the mountains.

The central part of the island is mountainous, with a maximum height of 2,000 ft. (approximately 600 metres). Rarotonga lies in the area covered by the southeast trade winds and is also influenced by winds from the east to northeast and to a lesser extent northwesterly winds.

Traditional fishing methods

The three different habitats in which people fish are the lagoons, reef flats and open sea or offshore areas. In the lagoon and reef flats, families tended to fish in groups in the past but now fishers go in pairs or alone.

Kikarau (coconut frond fishing)

This method of fishing is similar to gillnet fishing. Traditionally, the whole village prepared for this communal fishing activity. The coconut frond is prepared by splitting it into halves and tying the ends together until about 10 coconut fronds are tied together in one or two sets.

During fishing, men and women hold the *kikarau* to form a semi-circle in the lagoon. The rest of the fishing group beat the surface of the water with sticks to frighten the fish into the *kikarau*. When schools of fish reach

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the *kikarau*, the fishers move closer together and finally close the circle.

Once the *kikarau* is closed, the men with spears spear the larger fish and throw them into the canoe for storage. Children and women catch the smaller fish by hand and place them in the canoes or fishing baskets. When enough fish have been caught everyone returns to the beach and the catch is shared equally according to the number of people in the fishing households.

Today, this type of fishing is being replaced by gillnetting. Gillnetting is carried out by about four people. This type of communal fishing is normally done during Christmas and New Year holidays when most families have time to fish. Gillnets are usually set overnight or during the day.

Pa ika

Pa ika are also used in the lagoon. Stones are piled high, forming walls that create a trap (fish fence). At high tide, the fish swim over the walls of stone to feed or hide. When the tide recedes, the top of the walls emerges from the water and fish are trapped within the *Pa*. Fishers usually check the *Pa* at low tide. Fish caught are then placed in fishing baskets and taken home.

The building of the *Pa* is done by men, but men, women or children can collect fish from the *Pa*. This method is hardly used now because it is time consuming to build the *Pa*. Overfishing has also caused a reduction of stock in the lagoon and therefore fewer fish are likely to be trapped in the *Pa ika*.

Pokipoki

This is a V-shaped hand net that is dipped into the surge channel so that fish swimming past get entangled. The fish are then scooped up using hand nets. The *pokipoki* is made of wild hibiscus bark or coconut fiber.

Only two people are required to conduct this type of fishing: one has to hold the *pokipoki* and the other has to scoop the fish out. This method is usually used by men because this type of fishing is done near the surge channels where there is a high risk.

Netting

This fishing method is used by men at the deeper side of the reef channels during ebb tide in the morning and at midday. The net is about 100 metres long and 3–4 m deep. Two or three men paddle an outrigger canoe outside the reef. When they reach the breaking waves, they wait patiently until there is a break in the waves crashing onto the reef, then set the net parallel to the reef. Men on the reef then form a semi-circle and begin to beat the water

surface and poke reef crevices with sticks. This is repeated several times until enough fish are caught in the net. This method of fishing has been replaced with scuba diving or spear fishing.

Matau toko

Matau toko is used for deep-sea fishing in about 120 fathoms of water. A stone is used to take the line down and the line is marked to give an indication of the depth to which the hook and bait are dropped. Bait is wrapped around the hook and a leaf is wrapped around the bait and this is held by a copper wire or bark.

When the hook reaches the desired depth, the line is firmly pulled to release the stone and the line is jerked up and down to attract the fish.

Notes on fishing methods and daily fishing

Although some fishers still retain traditional fishing methods and knowledge of fishing, many have welcomed the changes from traditional fishing methods to modern methods. Fishing methods that are common in Aorangi are gillnet fishing, spear fishing, night time lantern fishing and gleaning on the reef. Because of paid employment, very little fishing is occurring in Aorangi. Most villagers will only go out fishing when they want to eat fish or on weekends and holidays when they can fish and also have recreation at the beach. The majority of the people in the village are restricted to fishing from shore and in the lagoon because there are very few canoes available for fishing. Most of the time, fish are bought or received from families who fish as a source of income.

Traditional knowledge

Fishing is usually done according to seasons, phases of the moon, tides, the lightening and darkening of the sky and wind directions. With a good knowledge of these elements, a fisher can predict the type of fish that will be caught and how good the fishing should be.

When it is the season for a certain species of fish, master fishers will survey paths usually followed by this species. Once a school of fish is sighted, a fisher signals a group, which organises the catching of the fish, usually by surrounding them.

Fisheries management – *raui*

In Aorangi, fisheries management is known as *raui*. *Raui* is usually put in place by a person of high birth rank. *Raui* is enforced when an important occasion is planned, especially when anticipating weddings and feasts or when the fish stock is being depleted. When the *raui* is planned, the whole village is informed of the area, the purpose

of the closure and the period of closure. Breaching of *raui* is severely punished.

Today, traditional fisheries management (*raui*) has been revived because of conservation efforts. About 20 years ago, there was limited traditional management taking place because chiefs had very little authority except in land matters. But with the revival of *raui*, chiefs are taking an active role in fisheries management. Fisheries management within the lagoon is vital as these areas are heavily fished for invertebrate and finfish (Ponia et. al 1999; MMR 1998).

Roles of men and women

There is a distinct difference in the types of fishing women and men do and also where they fish. Usually, collecting and gathering are exclusively done by women, while men fish by using handlines, spears and diving at night.

Women tend to use very little gear and mainly have a basket and a sharp stick to poke and kill the catch. Women gather sea cucumber gonads and sea urchins from the lagoon. On the reef top, they usually collect shellfish, crustaceans and octopus.

Women and girls are also actively involved in torch fishing at night. At night, they grab sleeping fish using their hands and also place their hands in holes and crevices to catch octopus. Traditionally, women do not use canoes, hooks, lines or nets. But younger women are participating in fish drives and net fishing more often today.

Men usually go out in canoes for trolling and fishing using nets, spears and handlines. Traditionally, these were exclusively men's fishing methods. Men tend to look down on women's fishing because women glean and their catch is usually just enough for a day's meal (which is a more sustainable way of fishing). Women tend to collect delicacies such as sea cucumber gonads, sea urchins, shell fish and octopus. Men tend to fish in the lagoon and offshore and women fish in the lagoon and on the reef flat.

Today, the types of fishing reserved for men and women are not as distinct as they were 20 years ago because of modernisation. Women use nets, spears and paddle canoes just like men do. Nowadays, men also gather and collect invertebrates just like women do. Most women can now buy modern fishing gear and are not restricted to gleaning and collecting of invertebrates.

Modern fishing methods

The close relationship between the people of New Zealand and Cook Islands and the influence of modern equipment and techniques have made a great impact on traditional fishing methods. Nearly

all traditional fishing methods we describe in this paper are no longer used today in Arorangi. Modern fishing methods are similar to traditional fishing methods in terms of the fishing skills and techniques they require, but they are more efficient and the equipment lasts longer.

An example of modern fishing method is trolling using high-powered outboards. Gillnets are also a good example of modern fishing method and are quite common. They are made of monofilament nylon, lead weights and plastic floats. They are set overnight and can lead to a lot of wastage because if the nets are not retrieved in time, the fish will rot.

Another modern fishing method is spear fishing using scuba. This enables the fishers to stay longer in the deep water. Spear fishers can also dive using torches to fish at night. It is a very efficient method as sleeping fish are easy to catch. Modern fishing techniques are less time consuming and more efficient. But there are problems caused by the introduction of modern technology, including the disappearance of traditional methods and over-exploitation of the limited resources of the lagoon.

Conclusion

As fishing technology advances, traditional methods are being forgotten. In Arorangi, women gather invertebrates while men do spear fishing, rod fishing and netting. Now there is an increasing tendency for both genders to be involved in all fishing methods because of easier access to modern fishing gear.

Nowadays, fewer and fewer people are involved in fishing because paid employment limits the time they can devote to fishing. Therefore, the local catch can't satisfy the marine seafood demand of Arorangi people, nor can it meet the demand of Rarotonga people in general. Marine products are therefore imported from New Zealand and from the outer islands of Cook Islands.

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