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The Subsistence Fishery Productivity and Marine Resource Knowledge of Resettled Polynesians from Tikopia Island, Solomon Islands

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Abstract—This study documents the fishing practices and local knowledge of marine resources of a group of Polynesian Tikopians who were resettled to Nukufero Village in the Russell Islands in the 1950s. Both the exploitation of the marine resources and cultural attitudes associated with the resource utilization in their new location are described. Technological advances like the use of monofilament lines, metal fishhooks, and iron spears have been incorporated into the fishing practices. Marine organisms have provided food, materials for tools and utensils, weapons, ornaments, and medicine for many generations for this society. With the introduction of commercial fishing there has been a gradual change in the perception of the utilization of marine resources. The people of Nukufero are presently reevaluating the values they place on their marine resources and considering ways that traditional approaches to the resource exploitation can be respected and yet development can proceed without damage to either cultural values or fish stocks.

Introduction

This is a study of the local marine knowledge and fishing practices of a resettled group of Polynesians from the island of Tikopia in the southeast Solomon Islands, presently living in Nukufero Village in the Russell Islands in the central province of Solomon Islands. Solomon Islands is an independent country in the South Pacific consisting of a group of more than 300 islands east of Papua New Guinea. It has a predominately rural population of about 300,000 people.

Because of the limited cultivatable land on Tikopia, the sea was an important source of food, medicine, utensils, ornamentation, and many other items. Tikopian's intense dependence on marine resources continued even after resettlement. However, because of the resettlement, they had to adapt to a new locale and different conditions. The proximity of their new home to the capital town of

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Honiara has also increased access to new technologies and pressure to commercialize the exploitation of the marine resources. This study examines their fishing technologies, marine resource use, conservation strategies, and local marine knowledge.

The documentation of subsistence fishing practices in Solomon Island is sparse. The few studies done tend to focus on unusual and ceremonial practices (Takekawa 1996a; b), or marine tenure systems (Hviding 1992; 1992) rather than the typical fishing efforts and their productivity. Furthermore, these studies are usually done by foreigners who bring a perspective from their culture and language. For example, only two sentences in Firth's (1963) book, *We the Tikopians*, mention the predominate source of protein for the island, fishing. Good fishermen are respected people in Tikopean society. Yet a significant study of the Tikopean society focused on kinship with the omission of a major culturally significant activity. Firth's omission was probably the result of a pejorative attitude upper class Europeans held toward fishermen at that time.

Quinn et al. (1984) documented the fishing practices of 15 villages in Papua New Guinea in studies done by local inhabitants exploring their own culture. We suggested that working with people intimate with the society will lead to more accurate work. The fieldwork in this study was conducted by an ethnic Tikopian[1].

Tikopia Island History and Population Control

The island of Tikopia is more than 5 km^2 and lies 380 km southeast of Nendo in southeastern Solomon Islands. The island is extremely lush and extensively cultivated. Nearly all of the land is used to grow crops, but this alone is insufficient to sustain the inhabitants' daily dietary needs. Fishing plays an important role in meeting the needs of the society.

People, who seem to be the direct ancestors of today's Polynesian populations, began arriving on Tikopia around 800 BP and gradually eliminated the previous human inhabitants. According to Tikopian legend, these people were known as the *Fiti-kai-kere,* Fire Eaters of the Earth. *Te Atafu*, is considered the traditional Polynesian founder of Tikopia arriving in the 16th century from Tonga. Tikopians have fair skin and are physically similar to people from Tonga, Samoa, and Wallis Island. They speak a similar Polynesian language (Pawley & Green 1973).

Limitations of the sea's resources and the desire for good land produced tensions between various tribes long before European contact, resulting in wars and cannibalism. The last recorded incident of cannibalism on Tikopia occurred around 1700, when the tribe called Nga Ravenga was slaughtered and the victims eaten. Around 1725 another tribe, called Nga Faea, committed a ritual suicide because of a shortage of land. The entire clan of around 100 people boarded their vessels and ventured out to sea. In a tribute to these two lost tribes, the northwest coast of Tikopia is called Faea and the southwest coast is known as Ravenga.

[1]M. Mataki is an ethnic Tikopian and grew up in Nukufero Village, Russell Islands.

The explorer Quiros was the first European reported to have seen Tikopia in the 1780s. When D'Urville visited in 1828, he estimated that Tikopia's population was between 400 and 500 people (Firth 1963). Subsequently, influenza and gastroenteritis were suspected of claiming 115 people. Owing to the limited cultivatable land, strict population control was imposed, until missionary activity discouraged it at the beginning of the century. The population of 1285 in 1929 increased by 36% in 1952. This overcrowding forced many younger Tikopians to leave. By 1970, 40% of the population had been resettled in other parts of the Solomon Islands: Nukufero in the Russell Islands, Nukukasi in Makira, Muruvai in Vanikolo, Ahabo on Utupua, and at White River Village in Honiara. These migrants had an historical knowledge of the consequences of a population that out grew its resources.

Each of the four Tikopian chiefs (Ariki Kafika, Ariki Tafua, Ariki Taumako, and Ariki Fangarere) traces his decent from his tribe's legendary ancestor. Their system of authority has been left undisturbed, both by the former colonial regime and the post-independence government. Both correctly felt that the people would be loyal as long as the chiefs were loyal. It was under this strong traditional system of governing that a system of marine resource management developed. It has been maintained even after Tikopians resettled at Nukufero.

Methods

Between 2 December 1996 and 20 January 1997, Tikopian fishermen living in Nukufero village were interviewed when they returned from fishing trips. They were asked about their fishing location, methods, and estimated period of time spent fishing. Their catch was identified, counted, and weight of each fish estimated to the nearest kilogram and rounded to the nearest 10 kg for the summary tables. Where smaller fish were caught, the weight to the nearest kilogram was estimated for piles of ten fish. In Tikopian society, it was customary for a fisherman to count the number of individuals of each species in his catch.

Detailed discussions were held with the fishermen regarding their fishing methods and equipment, fish identifications, concepts about marine resource management, and the social implications of fishing. *Fishes of Papua New Guinea* (Munro 1967) and *Coral Reef Fishes* (Leiske & Myers 1994) were used for fish identification. On several occasions there were heated discussions regarding the correct local name or spelling for particular species of fish. When this occurred or when there was agreement that the local names did not differentiate between scientific species, the higher taxonomic level was used.

Results

Fishing Methods

The fishing techniques used are basic but effective and meet the community's food requirement. Consequently, fishermen are reluctant to invest in fiber-

glass boats, motors, and refrigeration equipment. They prefer to simply adopt technologies that make their work easier rather than greatly increase their catch

About 25% of the fishermen commonly use hand lines on dugout canoes with outriggers. Monofilament line is purchased from village shops and wound around a piece of wood or a plastic reel. The length and strength of the line varied depending upon the target species and fishing location. The most commonly used technique is called *fakasorofatu* (stone dropping) which is done with heavy line at night. The monofilament line is attached to a wire attached to a hook. This reduces the line breakage when the fish is caught. The bait consists of strips of cut fish. Just before the line is cast out, a stone is loosely attached to it, which acts as a weight to accelerate the sinking of the line. This prevents surface fish from taking the bat. At the desired depth, the line is shaken and the stone dropped off.

Another hand line method for deep-sea fishing is the *fakararo,* which uses a lead weight purchased from a shop. The line length exceeds 100 m and commonly catches larger fish found in deep water. The method is very arduous and is only done by very fit, younger fishermen and represented 10% of the fishing effort.

Another technique used by about 10% of the fishermen employed a small circular net 50-60 cm in diameter that is made by bending a stick to form a semicircle (*pu'uro*). The semicircular stick is then attached to a 2-3 m bamboo pole. This technique is used to catch *sa'ave* (*Exocoetus* sp.), *kanae* (F. Muglidae), and night, surface feeding fish. These fish are attracted to light and are easy to catch. At Tikopia, fishermen used burning bundles of dried coconut leaves. After the relocation to Nukufero kerosene pressure lamps were used. The method is particularly successful in catching *sa'ave* from June to December.

Spear fishing at night is a specialized fishing method used exclusively by about 10% of the fishermen. This is a contemporary technique that has been adopted since resettlement. The fishermen use a short sharpened iron rod fastened to a 1.5–2 m stick, diving goggles, and a water proof flashlight. Elastic rubber tubing is occasionally attached on one end of the stick to propel the spear. This method works well during the full and first and last quarter lunar phases. *Arongo (Acanthurus xanthopterus)* and *ufu (Leptoscarus vaigensis)* were commonly caught.

Trolling *(a'rotaki)* has been used for many generations. On Tikopia the lines were sennit (cords made from coconut fibers), hooks made from shells, and lures made from bird feathers. Today fishermen use monofilament line, metal hooks, and lures bought from the shops. While some trolling is still done behind sailing vessels, most trolling is done from outboard motor-powered fiberglass boats. About 20% of the fishermen used this method. Trolling targets surface feeding species such as barracuda *(saosao),* tuna *(te atu),* and trevally *(ika tapu).*

Gill nets are used by about 25% of the fishermen. Older men (40–55 years old) are the most frequent users of this technique. At Tikopia, the net was constructed from vines, coconut fronds, and certain plants from the bush. After resettlement monofilament gill nets were purchased from shops. The nets were placed around river mouths, or along reefs. Sometimes a net was placed around a patch reef and the fish were chased into it.

Location and Duration of Fishing

The selection of a fishing location depends upon the target species and weather conditions. During good weather a healthy fisherman will go fishing every two to three days and is likely to travel to distant sites. In poor weather the trips are shorter and fishing sites closer to the village. During the Christmas/New Year holiday period there are fewer fishing trips, but more effort is made to get larger catches. Fishing trips usually last the entire night with the fishermen leaving in the afternoon and returning at dawn. However, people also fish during the day when the tuna are running.

Fishermen have preferred locations within the lagoon for catching fish. There is a site close to the village that several fishermen indicated was the best site to fish for the *vatai (Elagatis bipinnulatus).* The site is a good spot because of the strong currents in the area that concentrate baitfish. In addition, certain weather conditions are considered more favorable for catching some fish than others. More fish are caught when there is a slight breeze than when the water is very calm. Deep-sea handline fishing, *fakararo,* is done when the sea is light.

Distribution of Catch and Commercialism

The clan consumed most of the fish caught. Only an estimated 10% of the catch was sold. This is usually catch that is surplus to the clan's immediate needs and the money was used to pay school fees or other compulsory expenses. Only one of the fishermen interviewed indicated that he went fishing primarily to sell the fish. He was a younger man and hoped to save money for a fiberglass boat and motor.

Fishing Trip Details

A total of 71 fishing trips were recorded: 56 in December 1996 and 15 in January 1997 representing about 780 hours of fishing. This was considered to represent about 80% of the total fishing effort during this period. Because of cyclonic weather this represented fewer fishing trips than would normally occur. However, the trips were longer than usual. Individual fishermen did most fishing (72%). For major traditional and religious ceremonies (e.g., Christmas) large quantities of fish were required. Consequently just prior to the holidays groups would go out fishing. Also during the flying fish *(sa'ave)* season (June–December) groups of two to six fishermen will go to catch large quantities.

Catch Results

The fish were categorized by villagers according to the time the fish were normally caught. We report the catch using that system, Seven species of finfish and one crustacean species (lobster) were caught at night (Table 1). A mean of 260 fish (~120 kg) were caught per trip. During the austral summer the nights were about 10 hours long resulted in a catch per unit effort (CPUE) of 12 kg hr^{-1}. At night *ature (Selar crumenophthalmus)* and *sa'ave (Exocoetus* sp.) were the most

Table 1. Local and scientific names of finfish and lobster caught only at night with frequency of occurrence and weight. Fish are listed in the order of frequency of catch.

Local Name	Latin name	# of fish	% occurrence	weight (kg)
Sa'ave	*Exocoetus* sp.	2730	43.3	1180
Ature	*Selar crumenophthalmus*	2560	40.6	870
Marau	F. Holocentridae	516	8.2	180
Vatai	*Elagatis bipinnulatus*	316	5	380
Ura	*Panulirus* sp.	126	2	200
Tataoma	*Upeneus vittatus*	40	0.6	20
Fangamea	*Lethrinus* spp.	8	0.1	10
Naio	*Ablennes hians*	7	<0.1	10
	Total	6303	99.9	2850

common fish caught, accounting for 84% of the total night catch. They were only caught from June to December. Less common fish include the *vatai (Elagatis bipinnulatus)* and *marau* (F. Holocentridae). *Marau* is caught year round in small quantities.

Villagers commonly fished for shorter periods during the day, an average of seven hours. Consequently, fewer fish were caught, (47 per trip), although the catch per trip was only slightly lower (~115 kg) than during nighttime fishing because the fish were larger. The most abundant fish caught was mackeral tuna *(Euthynnus affins)* representing 98% of the catch. The yellow fin tuna *(Thunnus albacares)* accounted for around 1% of the catch (Table 2). These species were caught using *fakararo*, which only a few fishermen use today. It was used more frequently around Tikopia.

Most fishing extended through the day and night. More small fish were caught (mean ~100 fish trip^{-1}) and the mean catch per trip was ~77 kg. The average time spent fishing was 13 hours yielding a CPUE 6 kg hr^{-1}. There were 42 species that were equally likely to be caught during the day or night (Table 3). The most common species were the *saosao* (F. Sphyraenidae) and the *ufu (Leptoscarus vaigensis)*, which accounted for 23% of the catch. *Saosao* is caught year round with hand lines. Similarly, *ufu* was caught year round using a net or by spear fishing. Schooling fish such as *roma* (F. Acanthuridae) and *kanae* (F. Mugilidae) were caught throughout the year using a net.

Table 2. Names and frequency of fish caught at day time.

Local Name	Latin name	# of fish	% occurrence	weight (kg)
Te atu	*Euthynnus affinis*	556	98.2	1340
Te ka asi	*Thunnus albacares*	8	1.4	30
Sukusukurangitoto	*Rachycentron canadum*	2	<0.1	8
Tuniapu	*Aprion virescens*	1	<0.1	2
	Totals	567	99.8	1380

Table 3. Names and frequency of fish caught during both the day and night.

Local Name	Latin name	# of fish	% occurrence	Catch weight (kg)
Ufu	*Leptoscarus vaigensis*	428	11.5	330
Saosao	F. Sphyraenidae	415	11.2	240
Roma	F. Acanthuridae	402	10.8	180
Ponee	*Acanthurus* sp.	291	7.8	110
Manenga	*Bolbometopon muricatum*	270	7.3	380
Pokapoka	F. Scolopsidae	248	6.7	110
Arongo	*Acanthurus xanthopterus*	182	4.9	60
Varu	*Katsuwonus pelamis*	163	4.4	230
Temaa	*Acanthurus nigaricans*	145	3.9	50
Tanutanu	*Cybium* sp. (medium size)	126	3.4	110
Nefunefu	F. Priacanthidae	117	3.1	30
Roroa	*Hemiramphus far*	110	2.9	40
Ikamero	F. Lutjanidae	94	2.5	50
Tataeruru	*Cybium* sp. (small)	92	2.5	30
Ikatapu	F. Carangidae	88	2.4	90
Sukusukusenga	*Oligophites saurus*	86	2.3	100
Umee	*Naso* sp.	80	2.1	80
Kanae	F. Mugilidae	70	1.9	60
Kiokio	*Albula* sp.	61	1.6	40
Kingfish	*Seriola* sp.	19	1.1	40
Mareirei	F. Balistidae	29	0.8	40
Tetonuu	F. Serranidae	27	0.7	30
Saputu	F. Lethrinidae	25	0.6	30
Mufeko	*Caesio* sp.	20	0.5	10
Tonia	F. Lethrinidae	16	0.4	20
Tukuku	F. Lethrinidae	14	0.4	20
Paravao	*Sphyraena barracuda*	13	0.4	20
Nakiroa	F. Pomadasyidae	12	0.3	10
Tesumu	F. Balistidae	9	0.3	10
Mango	F. Carcharhinidae	7	0.2	80
Koilo	*Scarus perrico*	7	0.2	10
Tafaina	F. Carangidae	7	0.2	10
Tio	F. Lethrinidae	7	0.2	10
Rautokerau	F. Nemipteridae	6	0.2	5
Tafauri	F. Carangidae	6	0.2	10
Tafaina	F. Carangidae	6	0.2	5
Tangafa	*Cheilinus undulatus*	3	0.1	5
Ikafatu	*Plectorhinchus* sp.	2	0.1	5
Paramaori	*Cybium* sp. (large)	2	0.1	3
Parutata	F. Serranidae	1	<0.1	2
Parumanguru	F. Serranidae	1	<0.1	2
Teparu	F. Lutjanidae	1	<0.1	1
	Totals	3708	100	2698

Discussion

For many centuries, the Tikopians utilized resources from the sea. Marine resources were so important to their culture and traditions that there were songs and dances about the sea and its resources. Similar to many other insular Pacific societies (Ruddle 1994) they had devised methods of fishing, protocols of fisheries management, and general knowledge about the exploitation of marine resources to sustain them for many generations. Cannibalism was practiced in the society, but depletion of marine resources was not permitted.

Today, resettled Tikopian people living at Nukufero village remain very dependent upon marine resources. We estimate that 75% of their non-vegetable protein requirements are met from finfish consumption. Other uses of marine resources include the use of seaweed for medicinal purposes. As is the custom in Fiji, the collection of seaweed is done primarily by women (South 1993). Seashells are used for ornaments at both Nukufero and Tikopia, and at Tikopia for cutting tools, fishhooks, and weapons.

Women were excluded in the study because of cultural considerations. It would not be considered proper for a single Tikopian male to be seen discussing things with women. The village women were primarily household keepers who rarely went fishing from boats. Their fishing activities were collecting shellfish and other small animals on the intertidal flats. This contribution was considered to be relatively small. However, the underestimation of the contribution of women's fisheries is a common feature of fisheries studies (Quinn & Davis 1997, Des Rochers 1992, Quinn 1985). Traditionally Pacific island women have harvested aquatic resources more frequently and more regularly than men have (Schoeffel 1995). Gina-Whewell (1995) suggested that in many Solomon Islands communities, women did a major part of the subsistence fishing.

Fish have a cultural significance in social activities such as in marriages, funerals and other events where the host is expected to provide food for guests. In situations where fresh fish was unavailable, canned tuna was always substituted signifying the ceremonial importance of fish. If fish were not served, people would gossip and make derogatory comments about the hosts.

Conservation Methods

Toloa et al. (1994) observed that Pacific area countries have three categories of traditional conservation practices:

1) aspects of traditional systems which indirectly result in reduced amount of fishing effort on a particular species,

2) an elaborate process of skills that has the effect of reducing the need for destructive fishing and,

3) those that are specifically designed for conservation.

Within this society all three categories existed. Conservation is part of the Tikopian culture and is taught to children. Children learn that marine populations have limits and that only so much could be caught within a short period without

seriously depleting the stocks. In Tikopian society one had to ask permission from a chief prior to departing on a fishing trip. Today because the society identifies less with specific areas of the sea this custom is no longer practiced.

The people of Nukufero fish primarily near shore and catch species such as *roroa (Hemiramphus far), kanae,* reef species like the *manenga,* and pelagic species like the *saosao,* and kingfish *(Seriola* sp.). The focus on near shore fishes is a consequence of a number of practical reasons.

First, near shore sites are readily accessible to a community where most of the fishermen still use outrigger canoes. Fuel and outboard motors are expensive and spare parts difficult to obtain. The fishermen were aware that greater expenses required more fishing effort, which could reduce their fish stocks. On Tikopia offshore sites were rarely fished and in effect functioned as marine preserves. Only during special situations and with the chief's permission were these sites fished.

Second, the simple fishing methods they used were most suitable for inshore fishing. In spite of their love of the sea, the village fishermen preferred not to travel far to fish. They looked forward to returning daily to the village with their fresh catch. Travel to more distant sites was unnecessary when productive fisheries were close by.

Third, near shore fish stocks were very diverse (56 different species were recorded being caught in this study [Tables 1, 2, 3]). This allowed fishermen to exploit numerous populations without overfishing a particular species and contributed to their sustainable use.

Other conservation practices were more similar to those recently adopted in commercial fisheries. For centuries the Tikopian society recognized the concept of "closed season". January to June was regarded as a period for the marine resources to recuperate from the catches associated with the previous season. Conveniently the best season to catch fish was from June to December. During this "conservation period", there was less fishing as people spent more time gardening. Since January to May was the rainy season, it was also the best time for gardening.

Other cultural activities had nothing directly to do with conservation, but their activity was in effect a conservation practice. For example, after a death of a villager there was a ban on fishing. The ban period varied according to the social status of the dead person. The death of a commoner usually resulted in a ban for a couple of days, while a ban would be in effect for at least two weeks after the death of a respected leader. When death occurred within the family, family members were not supposed to fish for a period from several days to up to eleven months.

In this indirect conservation category we would also include the acceptance of Christianity within the last 150 years. The villagers were devout Christians who strictly observed the Sabbath. There was no fishing on Sunday. The practice of a day of rest was introduced to Tikopia with the early missionaries and was not associated with resource management principles. There was no agreement with the informants about when the community generally adopted this practice.

The selection of fishing techniques functions to conserve the resource. For instance, the hand line is relatively nondestructive and is selective in the size of the fish caught. In general, villagers preferred to catch larger fish and purposefully used larger hooks. Consequently, smaller fish were left to grow larger. Villagers also selected larger mesh sizes for gill nets to reduce fishing pressure on smaller, juvenile fish.

The utilization of marine resources by Nukufero villagers was based on the accumulated traditional knowledge that they brought with them from Tikopia. This knowledge helped the fishermen to utilize the marine resources of the sea for many generations. However, because their new home is closer to the markets of the capital town, Honiara, there is more pressure to change from a pure subsistence fishery to a semi-commercial fishery. On Tikopia, and until recently at Nukufero, fish were harvested only for immediate consumption since there was nothing to do with the surplus catch. Villagers neither smoked nor preserved fish.

The people believed that they have successfully lived in harmony with their environment, but were now concerned that forces, which they cannot control, were affecting their resources and livelihood. Despite the government's efforts to commercialize artisanal fisheries, this community still primarily regards fishing as a means to acquire food and not as a commercial activity. The fishermen believed that if people wanted to acquire wealth, then they should do that using the practices of the cash economy rather than over exploiting the sea. It was considered that the society's emphasis on sharing the catch from the sea, rather than personally profiting from it, was a fundamental and important part of their identity.

This perception of marine resources may be difficult for some to understand. The fishes were not commodities for sale, but rather part of one's relationship with nature, one's relationship with one's kin, and fundamental to the society's existence and well being. Perhaps the best analogy is with the exchange of sexual favors for money or gifts. While it is generally recognized that women could substantially increase their income by selling personal sexual services, even the most liberal thinking people do not advocate the empowerment of women through this approach. While this example seems ludicrous, it does strike a resonating chord with the traditional Nukufero Village view of selling fish. This is a society that historically experienced cannibalism and recently relocated from their native island because a limitation of resources. An indication of the depth of these convictions is the persistent disinterest most villagers have in commercial fishing considering the encouragement given by the government agencies and the plethora of material needs that could be met with an increased income. Nevertheless, the influence of the money-based society is slowly changing the society's lifestyle.

Villagers were aware of the Solomon Islands government's rural development plans (Skewes 1990) and realized that there was a need for a different management approach. An approach, which would ensure a continued supply of fresh marine resources as well as assisting them with their development goals, was required. The community recognized the need for detailed scientific studies. The consensus

was that in order to insure a sustainable development strategy they need help in identifying species that were under utilized and those that were vulnerable to over fishing. They then would work to establish practices to ensure the sustained use of stocks. Furthermore, they believed that before development commenced, local and national governments must recognize and respect the value of the local knowledge of the Nukufero villagers. This concept was supported at the UN Conference on Environment and Development, the "Earth Summit", which stressed that the development of indigenous people's fisheries must take into account traditional knowledge and interests of local communities (Wright & Hill 1993).

The Nukufero fishermen proposed this set of management guidelines:

a) sustainable fishing methods must be promoted,

b) appropriate government agencies must respect and recognize the rights and knowledge of the local people,

c) advice and support of the village on any issues concerning marine resources must be sought by government agencies,

d) regulation and enforcement of regulations should be handled by the village elders,

e) destructive fishing methods like dynamiting, fish poisoning, and the use of nets with small mesh sizes should be prohibited,

f) training workshops to demonstrate new fishing technologies, post-harvest processing, small business management, and resource management techniques should be conducted in the village.

These guidelines represented the aspiration of villagers who wished to continue to be responsible to the sustained use of their marine resources. They believed that the resource management lessons learned on Tikopia were being applied to the marine resources around their new community. However, there was a fear of governmental authority and its exclusion of the local chief and stakeholders in management discussions. The people were perplexed how a government agency without any protracted knowledge of local resources could be empowered to regulate fishing around Nukufero without the advice or consent of local villagers. The villagers did not believe that government agency personnel saw themselves as servants of the people who respected the local knowledge, local cultural values, and the ability of local people to develop their marine resources in a sustainable manner.

The perceived lack of appreciation of local knowledge by government workers was perhaps a fault of the education system. There is concern that knowledge accumulated over centuries of close interaction with the environment is being lost because of the failure of educators to teach environmental science in developing Pacific societies (Schefter & Lobban 1997). Quinn & Daudau (1999) observed that the absence of information about local marine knowledge in the Solomon Islands has resulted in an education curriculum that stresses foreign habitats and different approaches to resource utilization. Consequently, students lost interest in the subject because implicitly the educators said that local knowledge was not worth studying. Few students are interested enough to pursue higher education in

Biology. Solomon Islander student enrollment in Law Studies at the University of the South Pacific in Fiji was 10 times greater than enrollment in Biology (Daudau & Quinn 1997). It is not surprising that graduates employed by the government were perceived by villagers to lack an understanding and an appreciation the customs and knowledge of many rural communities.

Few people are willing, or able, to divulge all of their knowledge, even to friends, in a short time. More effort is required to completely document the local marine knowledge of the resettled Tikopian community at Nukufero. We hope this study provides a basis for the continued study and appreciation of local marine knowledge in rural communities in Solomon Islands. We encourage the continued documentation of local knowledge and monitoring the incorporation of new equipment, technologies, and management strategies into these fisheries.

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