

An Introductory Study of the Socio-economic Aspects of Household Fisheries in the Small Islands Economies of the South Pacific.

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Abstract

This study focuses on the present socio-economic status of the household fisheries in the Small island economies of the South Pacific in order to gain some understanding of the actual fisheries situation and to help determine the basic philosophy for its development planning.

I. Basic Characteristics of Fisheries in the South Pacific Island Economies.

Almost all of the small island economies of the South Pacific generally share the same social and economic problems such as low per capita incomes, high unemployment, limited exports, high birth rates, heavy reliance on foreign aid, and above all, have limited agricultural products. Industrial development in these islands; with limited land area, unskilled labour, and small populations that are isolated from large export markets holds little promise, the possibilities for benefits and economies of scale in production being limited. Poor and expensive transportation networks within the region restrict trade, even for larger islands like *Papua New Guinea* and *Fiji* that have established export-orientated light industries.

The majority of these South Pacific islands share similar ecologies and have similar political histories as colonies of major suzerian powers.

Within each of the island groups there are two distinctly different types of societies: the one found in all major towns, and the other, which constitutes the majority, is a traditional rural one with a subsistence life-style usually located in the outer islands and rural areas. In all cases there is a tremendous gap between the two societies, characterising the strong effect of social and economic dualism. This problem is unique to the South Pacific in that the traditional subsistence societies are still only partially monetized whereas in other developing countries like in South East Asia, the traditional societies have achieved a complete monetization. From the developmental point of view, existence of such a condition in the South Pacific to some extent could be said as a result of gaining late independence and islands being small and isolated.

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The strong social systems such as kinship relations enable them to maintain extended family ties and work collectively for production for basic means of survival.

Fishing has been one of the major activities sustaining the livelihood of these islanders since the early days. Fishing activities are still seen as an integral part of the social institutions of the coastal population. With the advent of a market economy, these coastal community fisheries now exist alongside with industrial fisheries. The latter is export orientated deep sea fisheries of highly migratory species such as skipjack and tuna which usually operate as joint-ventures with developed countries and the former is household scale production where the fisherman's family is engaged in the fisheries operations.

The household fisheries could further be classified into artisanal-commercial and subsistence fisheries. The artisanal-commercial fisherman works under the influence of a more or less perceived though limited demand for cash whereas the subsistence fisherman's main objective is to satisfy his own consumption needs.

These household fisheries are responsible for providing fish for domestic consumption by use of traditional and simple introduced techniques. There is no organised system of production nor incentives to maximise production by these fishermen.

However, with the notion to develop fisheries resources, various approaches have been adopted relating to increasing production of the household fisheries.

It has been observed that these approaches follow different methodologies; some are based on improvement of technical base of production, the main objective of which is profit orientated, others are based on improvement of the living standards of fishing communities. Considering the general social and economic conditions of these islands, it is important to take into account development strategies which could be more practical under the existing conditions.

However, before any analysis of such strategies it is important to fully understand the existing socio-economic conditions in order to decide on the direction and extent of changes required towards the development of these household fisheries.

The present study concentrates mainly on the status of household fisheries in the *Fiji Islands*, while attempting to take a general view of fisheries of other South Pacific Island economies. It attempts to describe the situation of household fisheries in order to bring to light the socio-economic factors which ought to be taken account of when determining the strategy or options for its development planning.

II. Status of Household Fisheries:

—The case of Fiji Islands—

Large rivers, estuaries and mangrove areas occur on the larger volcanic islands of *Viti Levu* and *Vanua Levu*. Barrier and fringing reefs provide extensive sheltered fishing grounds, the *Great Sea reef* forms an arc approximately 480 km long around north west of the island group and encloses 4800 km² of water. Considering the total fishing grounds, the fisheries resource potential is extensive. The household fisheries; subsistence and artisanal-commercial, are responsible for the production of fish for local consumption.

Subsistence Fishing.

Subsistence fishing is an important aspect of the socio-economics of the Fijian rural coastal communities. Fishing activities are carried out on the reef, lagoon systems, rivers and streams.

From the *Fisheries Division* survey on subsistence fisheries carried out in 1979, the overall subsistence scale fish catch was estimated to be 37 mt/day or 0.34 kg/day/person of the coastal population and the entire subsistence fishery was estimated to be around 13826 tonnes per year.

Prior to the cession of Fiji to the British Crown, fishing in the rivers and sea was ruled by custom. Usually the Mataqali¹ or the Yavusa² which owned coastal land held tenure to the adjacent mangrove, lagoons, and reefs and had ownership of the sea floor, water, shellfish, fish and rights of passage. The chiefs were responsible for the allocation and control of their boundaries. Sea tenure varied according to social, political and, geographical factors due to population changes, marriage, and birth. Fishing within the boundary of another mataqali or yavusa was resented and the intruders were treated as poachers.

These Native customary fishing rights had been defined in the Bird, Game and Fish Protection Ordinance (1923) where it is stated that... "it shall be unlawful for any person to fish on any reef or any kai (cockle) or other shellfish bed in any water forming part of the ancient customary fishing ground of any mataqali unless he shall be a member of such mataqali or shall first have obtained a licence so to do under the hand of the Colonial secretary... All disputes between matagalas as to the limits of their customary rights shall be referred to the Governor in Council whose decision there upon after inquiry shall be final".

This provision was later incorporated in the Fisheries Ordinance (1942) Chapter 135, Clause 12-19 which is still in effect.

This enabled the establishment of the *Native Lands Fisheries Commission* to be responsible for the division of fishing boundaries, enforcing regulations over these fishing rights area, and protecting the native interests.

Fishing rights boundaries are identified by such physical features as patch reefs, reef hole and reef passages and are boarded at their seaward ends by the outer limit of that portion of the barrier reef which is exposed at mean low water.

Each mataqali has its own identity which has been passed through their ancestors. The customary fishing rights are divided into yavusa, which may contain one or more mataqali. The fishing rights are issued in Vanua which represents the ancestral fishing rights. The Vanua would consist of several yavusas.

The *Fisheries Division* does not have any administrative powers relating to Fijian fishing rights. It only carries out surveys to assess damages or makes recommendations relating to changes due to reclamation at the request of the *Native Lands Fisheries Commission*. In practice, if there are problems relating to fishing boundaries, the government appointed provincial administrators are consulted to settle the matter by traditional

1. mataqali-A tribal unit (clan)

2. yavusa-A federation of clans

**Note: For further details see reference 7.

means such as offering yaqona (kava) and Tabua (whale's tooth) to each other.

Artisanal-commercial Fishing.

Commercial fishery legislation is governed by the Fisheries Ordinance, Chapter 135 (1942). It also empowers the minister to make regulations on fishing methods, areas, seasons and so on.

Artisanal-commercial fishery operations are largely concentrated inside the reef and lagoon areas due to the limited capacity of boats and to some extent as a practice of tradition. This area which extends from the coast to the reef is known as (IDA) inside demarcated area. Under the authority of section 12 of Fisheries Ordinance, Chapter 135 of Laws of Fiji, this area has customary fishing rights over the fishing grounds.

If a fisherman wants to operate inside this area (IDA), he has to seek approval of the owner of the customary fishing rights. He has to approach the village chief (*turaga-ni-mataqali*) or (*turaga-ni-yavusa*) in a traditional manner usually by offering yaqona (kava), money and food items. If the villagers approve, a letter is presented by the chief on behalf of the villagers giving their consent to their use of their fishing grounds by the particular person. The letter is then presented to the Roko¹⁾ at the respective District Administration Office, who would then check that the agreed area in the letter actually belongs to the signatories of the letter. Upon confirmation by authority of section 8, Part II 4(1) of the Fisheries Regulations, chapter 135, the request is put forward to the District Commissioner in which the fishing area is located. The District Commissioner has the power to veto any arrangements between villagers and individuals seeking permission to fish. This enables the District Commissioner to act on the advice of the *Fisheries Division* in order to regulate the level of fishing in any particular area.

If a permit is granted by the District Commissioner the fisherman then pays his yearly licence fee at the *Fisheries Division*. Table I. shows the number of licenced local fishermen from 1979 to 1982. Outside the demarcated area (beyond the reef) does not have any customary fishing rights. Fishermen have to apply to the *Fisheries Division* for licences to fish in this area. As can be seen in table I., the number of licences issued inside the demarcated areas are higher than outside.

The domestic market production in 1982 was 4358.2 tonnes, of which 3384.49 tonnes were aquatic non-fish products. The total value of the marketed products was F\$8,330,000. Table II. gives the domestic market production figures for 1980-1982.

The domestic market production includes all fish and non-fish products marketed with no distinction between the contribution by the artisanal-commercial and the

Table I. Licenced Local Fishermen Inside and Outside Demarcated Areas.

| Year : 1979 | | 1980 | | 1981 | | 1982 | |
|-------------|---------|--------|---------|--------|---------|--------|---------|
| Inside | Outside | Inside | Outside | Inside | Outside | Inside | Outside |
| 674 | 343 | 767 | 387 | 852 | 431 | 892 | 608 |

Source : *Fisheries Division Annual Reports 1979-1982*.

1) Roko-District head of Fijian Affairs.

Table II. Domestic Market Production in metric tonnes

| Year : | 1980 | 1981 | 1982 |
|--|-----------------|-----------|-----------|
| Municipal market fish sales | 843.9 | 1132.91 | 973.71 |
| Municipal market non-fish sales | 956.4 | 1093.51 | 1443.16 |
| NMA & other outlets (fish & non-fish sales) | 1712.9 | 1472.31 | 1941.33 |
| Domestic market production | 3513.2 | 3698.73 | 4358.20 |
| Value : | In Fiji Dollars | | |
| Market & NMA & other outlets (fish) | 3,918,000 | 5,480,560 | 5,337,330 |
| Market & NMA & other outlets (non-fish) | 852,000 | 863,990 | 2,993,010 |
| | 4,770,000 | 6,344,550 | 8,330,340 |

Source : *Fisheries Division Annual Reports, 1980-1982.*

NMA : *National Marketing Authority.*

subsistence fishermen. However, the non-fish sales including shell fish, crabs, molluscs, seaweeds, and other crustaceans are largely produced by subsistence fisheries. About 90% of these products are sold by women.

III. Organisation of fishing activities

Both subsistence and artisanal-commercial fishermen concentrate on fishing within the reef and lagoon areas. Subsistence fishermen fish within their own fishing boundary, primarily for self consumption and to meet their social obligations. They only sell fish to meet their cash requirements for such things as religious donations, payment of school fees, purchase of other food items, clothing, etc.

The artisanal-commercial fishermen, as mentioned earlier, obtain the permission from the customary fishing right owners to fish in their area. More than 50% of the fishermen holding licences operate as part-time fishermen. A Fijian part-time fisherman would normally work in his garden cultivating such crops as cassava, taro, yams, bananas, and sweet potatoes whereas an Indian part-time fishermen would engage in cultivating sugar cane or rice and would only fish over weekends or when not actively engaged in planting or harvesting. Fishing activities for both groups of fishermen are self-regulated.

Daily fishing activities are carried out by women, which include such things as collecting crabs, molluscs, seaweeds, and sometimes fish. In fine weather women from coastal villages spend at least a half a day on the reef and sometimes a whole day if they plan to cover a larger distance. Women carry out their fishing activities only during the day time hours.

The women from the village gather together to plan for their expedition. For them, going out on the reefs and mangrove swamps is also a social activity and the

fishing equipment is used collectively and the catch is distributed among the members of the group.

The artisanal-commercial fishermen mostly fish over the week days and market their catch on Fridays and Saturdays. These fishermen usually hire labourers from their own villages and pay them cash or a portion of the catch. Usually a crew of 2 or 3 members is desired by these fishermen.

The subsistence fishermen also organise themselves in groups depending upon the capacity of the boat. There are usually 2-5 members. The voluntary and temporary nature of the group enables for free interchange of views relating to where to fish and for how long, usually the owner of the fishing boat or an elder member of the group directs the fishing expeditions. Subsistence fishermen mostly operate during the day time whereas the artisanal-commercial fishermen usually stay out at sea overnight.

After arriving on shore, the head of the fishing expedition distributes the catch. The criteria for distribution is made on the return journey, depending upon the amount of catch. The portion which has to be marketed is tied into strings or put in bundles (baskets made of coconut leaves), before transporting it to the market.

In a group fish sale by subsistence fishermen, the returns from sale is distributed equally after deducting the fuel expenses. The artisanal-commercial fisherman pays his hired labourers with either cash or in fish depending upon the catch. If the catch is low, the fisherman would distribute a share of catch equivalent to about a meal for the labourer's family. If there is a good catch, usually the labourer would be paid in cash ranging from \$ 5-10 per fishing trip.

IV. Operation & Management

Gear & technology

Both traditional, as well as, simple introduced techniques are utilized at the household level of production. A fishing boat is the major asset owned by the fishermen. Boats range from simple punts, outrigger canoes to outboard motor boats.

Fishermen living near the *Fisheries Division* centres purchase their gear and equipment from these centres, but the majority purchase their gear and equipment from retail stores or second hand dealers. At the village level, simple punts are constructed with village labour, or sometimes bought.

Modern fishing gear has been introduced during early European contact and by the Indian Indentured labourers. Use of synthetic nylon nets, line and steel hooks have replaced traditional hardwood and stone hooks and nets made of fibres from bark of creepers. Use of gill nets and hand lines are widely used modern techniques followed by blocking nets, cast nets, verendah nets, and spear fishing. However, traditional techniques are still widely practiced and are of great importance at the village level. Use of bare hands is one of the first techniques used by early islanders to exploit the marine resources and is still widely used for collecting shells and crabs on the mangrove flats and reef areas. Labour intensive techniques of scare line and fish drives are also practiced for traditional and ceremonial gatherings. This technique

together with the operation of larger nets require cooperation of the whole village community. These traditional operations are usually directed by the village master fisherman called the "gonedau". The *gonedau* possesses knowledge about the sea, fish species, tides and so on acquired through his ancestors. Stupefying fish with pounded roots of *duva gaga* (*derris uliginosa*) and *duva ni viu kini* (*derris malaccensis*) is also quite common. The poison is put into the holes or crevices in the reefs where the fish usually shelter. Various types of fish fences or corrals, traps and traditional nets are also used mostly on the outer islands.

There is no formal education or training acquired by majority of the fishermen. The knowledge about the sea is passed on to the young fishermen by the village elders.

In most cases, fish is not iced until landed on shore. The fishing boats do not have any storage facilities and only fishermen near the *Fisheries Division* centres have access to ice for storage.

Income & expenditure

The fish catch varies according to season, the type of gear used, and the amount of effort put in and therefore the income of the artisanal-commercial fishermen also varies accordingly. According to a survey carried out on artisanal-commercial fishermen's income in November 1983 at *Narere Nasinu* (7^{1/2} miles) and the *Navakavu Yavusa*, the income from fish sales ranged from \$ 50-\$ 200 per month.

The major expenditure relating to production is the fuel expenses for the boat. Transport costs, fishing gear and boat maintenance costs are the other variable costs for the fishermen. The household expenditure includes food items like flour, sugar, rice, tea, cigarettes, and *yagona* (kava). Non-food items include clothing and kerosene for fuel and lighting. Besides the weekly expenditure on household consumption a fisherman has to meet his other obligations such as payment of school expenses for children, contributions to relatives on such occasions as marriage or death and for religious offerings.

The subsistence fishermen also attempt to sell their catch in order to meet their cash demands. These cash demands have been partly due to the adoption of modern fishing gear and technology (eg. use of outboard motor boats which require fuel, use of nets, and hook and line). Like the artisanal-commercial fishermen, the subsistence fishermen also need cash to purchase essential food items such as sugar, flour, tea, and so on and to meet other obligations such as school expenses and transport costs. It is difficult to estimate the cash demand or income of the subsistence fishermen from sale of fish because the demand for cash varies from individual to individual relating to his immediate consumption and obligation needs.

No records are kept about the income and expenditure either because they are illiterate or do not see the need for keeping such records. The fishermen thus do not use their overhead costs to directly calculate their selling price.

Credit & financing

With the dominance of the reciprocity system, credit and financial institutional

facilities are insignificant at the household level of production.

Attempts to establish fishing co-operatives have been not so successful in Fiji for several reasons. The strong social systems at the village level where the chief in most cases makes decision rather than people with appropriate knowledge and skills. It would be against their customary norms if any other people with views different from the chief takes part in the decision making process. Resources are poorly managed because of the social obligations which ought to be fulfilled to keep the village customary and social ties intact. Other problems include lack of technical skills for administration and management of co-operatives as well as lack of funds.

Fishermen's access to credit is only possible through the *Fisheries Division* as an intermediary to the *Fiji Development Bank*. However, fishermen prefer not to borrow money from banks because of difficulty in re-payment because of the variable income. A fisherman, therefore borrows money from a friend or relative where the terms could be flexible and usually no interest is required.

Marketing & distribution

The decision relating to which part of the catch is to be sold and which is to be used for self-consumption or given away to friends and relatives is made by the individual fisherman. For the subsistence fishermen, this choice is influenced by the immediate and future household consumption needs. This future consumption need is seen as an obligation which in turn functions as an assurance for future security provided by the kinship relations. An artisanal-commercial fisherman's choice is influenced by his demand for cash and his immediate household consumption needs.

There is no organised form of marketing of fish and other marine products. In most cases, the fishermen sell their own catch directly to the consumers. Fish and other marine species are sold alongside agricultural produce at the municipal markets.

Fish is brought to the market in carriers, vans, taxis, and by boats. Transportation costs are higher for fishermen living away from the market centres. Marketing facilities at the market centres are small and usually crowded. A fisherman is forced to sell his catch as soon as possible to avoid losing his stock through spoilage as there are no storage facilities available at the market. For this reason he mixes the inferior and superior species in one string so that all gets sold.

Fish and other aquatic products are displayed at the counter in strings, bundles, and heaps. A fisherman generally decides on a price by discussing with the group if it is a group undertaking, otherwise he determines the price himself depending upon the mixture of fish species in a string or bundle. Smaller species such as ponyfish, mullet, mackerel, and rabbit fish are sold separately in strings of one particular kind. Sea shells are usually displayed in heaps or put in coconut leaf baskets. The size of the fish and composition of species on a string or bundle influence the fisherman's decision on pricing.

There are no government regulations on pricing of fish and other aquatic products. Taking into account the motive of the fishermen; the supply is not related to the demand nor does it change to the extent to affect prices at the market. The establishment of a *National Marketing Authority (NMA)* for marketing of fish has been of

limited benefit due to the ineffective market forces which resulted in poor pricing. The demand for fish from NMA has also been limited. The main consumers include government institutions like boarding schools, hospitals, prisons, and individual consumers with transport facilities to NMA.

Peddling is also common for fishermen living away from major marketing centres. Fish is sold at the landing sites as well as along the roadsides. Retail supermarkets and butcher shops also sell frozen fish and aquatic products.

The fishermen's actual involvement in the market occurs with the distribution of fish and not as part of the production process. The fishermen work on a self-regulated basis; for the demand for cash is not seen as a demand for profit but rather for other subsistence requirements and social obligations. His market participation is limited to the allocation of catch, the portion for sale, and that for other obligations.

This type of marketing structure is one where the fishermen can continue to operate even if he is not able to meet his loan payments and other expenses. His survival depends upon his access to means of production and subsistence.

SUPPLEMENT : A case study of the Navakavu Yavusa-(November 1983).

The Navakavu Yavusa.

The *Navakavu Yavusa* belongs to the *Burebasaga Vanua*¹⁾ of the *Rewa Province*. *Waingganaki*, *Nabaka*, and *Muaivuso* villages belong to the *Navakavu Yavusa*. The villages are situated about 30 kilometers south west of *Suva* along the coast and about 6 kilometers from the *Queens Road*. The only means of access to the main road is by use of tracks through the bush and shrubs. The villages are within 20-30 minutes walking distance from each other.

The population of *Muaivuso village* is about 150. There are about 25 houses which are either thatched with bamboo and grass or wooden with corrugated iron roofs. Houses which have been built after *Cyclone Oscar* in 1983 are made of concrete with corrugated iron roofs. The village consists of two *Mataqalis*, *Nabaramai* and *Na Ta Buivalu*. The village has a church, a primary school, and a co-operative store.

The people of *Nabaka village* belong to a clan known as the *Laselase Matagali*. The population is about 100 people with 17 households. The village children attend the *Muaivuso District School* in the neighbouring village. The village has a co-operative store operated under the supervision of the *Village turaga-ni-koro*²⁾.

Waingganaki village is situated along the coast on a cliff. There are about 30 houses in the village ranging from grass thatched, wooden to concrete. The population is about 160, consisting of 4 *mataqalis*; *Wai Tubua*, *Nasei*, *Natodre* and *Nakaubeqa*. The village has its own school, church, and a co-operative store.

The villages share a common fishing area issued as a *yavusa* fishing right. The area extends from the coast to the reef from the main *Suva Passage* to *Namuka Passage*. People from the three villages occasionally gather together for church service and on such occasions as marriage, traditional feasts, and for administrative purposes.

¹⁾ Vanua-Military alliance

²⁾ Turaga-ni-koro-chief of the village.

All village land is cultivated communally, divided into mataqali units. The villagers practice shifting cultivation and plant mainly root crops like cassava, dalo, yams, sweet potatoes, breadfruit, and bananas. These food crops are the staple for villagers and are also occasionally sold for cash.

Activities of fishermen.

Fish and other marine species are the major source of protein for the villagers as well as the major means of earning cash.

Fishing is seen as an integral part of the village social activities as considerable time is spent on these activities by men, women and children. About 80% of the families own either a punt or an outboard motor boat. There is no considerable difference between the operation of a subsistence and artisanal-commercial fishermen. The latter own outboard motor boats and spend more time at sea than in their garden. The artisanal-commercial fishermen usually hire labourers whereas the subsistence fishermen voluntarily join a group if they are not engaged in other village activities.

Fishing expeditions are always organised in groups. The village members usually gather in the evenings at the village meeting house to drink yaqona (kava), play cards, and discuss issues related to village activities. The planning for fishing trips are also made at these meetings. Decisions are made on the number of members participating, time, gear to be used, and other necessary preparations such as fuel and food. If a fishing trip is organised by an artisanal-commercial fisherman, he would also lead the fishing trip and would usually choose a crew of 2-4 members. In other cases, the eldest members of the crew would lead the fishing expedition. Decisions related to where to fish and for how long are made by mutual agreement among the members on board.

Most of the daily fishing is, however, carried out by the women from the village. Women prefer to work in groups collectively. The women's groups are usually larger than men's, ranging about 4-16 members or more. They collect sea shells, crabs, seaweeds, and other species along the coastal mangrove areas and on the reef flats at low tides.

The distribution of the catch is done by the fishermen upon arrival on shore. Artisanal-commercial fishermen would normally transport his catch straight away for selling and would use the unsold fish for his own consumption and distribution to the hired labourers. However, depending upon the immediate consumption demands he may sometimes distribute before marketing. A subsistence fisherman's decision on distribution is affected by his own consumption needs, his demand for cash, and his village social obligations. Women use the same mode of distribution as the subsistence fishermen.

Sometimes fishing is also carried out by men and women collectively for ceremonial feasts and gathering by use of traditional techniques. The *Navakavu Yavusa* uses fish fences for traditional purpose fishing.

Fishing operations.

Weather permitting, a fisherman may go to sea at least 2 or 3 times a week. Day-light fishing is preferred, but sometimes fishermen stay overnight at sea. The fishermen

do not stay out for more than 1 or 2 nights because of limited capacity of fishing boats and lack of storage facilities. About 8-10 hours is spent at sea in a days fishing trip. In an overnight fishing trip by the artisanal-commercial fishermen, a distance of approximately 60 km from the village is the upper range limit, whereas in a daylight fishing trip, a distance of about 15 to 20 kilometers is carried. The distance covered by subsistence fishermen is usually within 10-20 km as they concentrate mostly on daylight fishing and within the reef area boundary. At the time of the interview there were 17 fishermen who operated under licence from the *Fisheries Division*, 7 from *Muaivuso*, 4 from *Waingganaki* and 6 from *Nabaka village*. The rest of the village household carried out fishing on a subsistence basis.

The villagers use both traditional and introduced techniques. Outboard motor boats, punts, nets (nylon), spear and hooks and line are widely used. The people of *Nabaka village* also use traditional fish fences. Sometimes poison or derris is used, although such practice is prohibited by the government.

Women mostly hand collect sea foods and use hand nets in shallow water whereas men use gill nets, spears and hooks and line and usually fish from the boats.

Fishermen sometimes observe the wind direction, movement of the moon and tides to determine the time for fishing and the possible locations for fish. Knowledge of sea, fishing expeditions and use of gear for young fishermen are learnt from the elder fishermen of the village.

Livelihood of fishermen.

It is rather difficult to get details of catch by quantity and value because fish are sold in strings, bundles, heaps or as individuals. There is no scale to determine the weight of fish and other marine species. The catch varies according to the season and effort, however in fine weather the artisanal-commercial fishermen indicated that they usually catch about 20-30 strings of fish in a day; in other days he may get 10-12 strings or even less. The price for each string or bundle varies from \$ 1.50 to \$ 6.00 depending upon the type of species and size. On the other hand the subsistence fisherman's catch varies in relation to his demand for cash, but it is much less than the quantity caught by artisanal-commercial fishermen.

In the case of subsistence fishermen's distribution of catch, preference is given to satisfy home consumption. Sometimes fish is also distributed among the friends and relatives within the village. The choice between the non-marketed and the marketed portion is influenced by the household consumption needs, the social obligations and the demand for cash to meet other subsistence needs.

Marketing days for catch is usually Fridays and Saturdays. All fishermen sell their catch directly to the consumers from their fishing boats. Fish is rarely sold at the market. Fishermen prefer to sell their catch behind the *Metropole Hotel* along the *Nabukalau Creek* because of ease of transport and there is no fee. The women sell their catch at the *Suva Municipal Market*. It is also convenient for them to do their household purchasing for the week before returning home.

The *Navakavu Yavusa's* main source of income is from sale of fish and other marine species. Fish income however varied from \$ 20-140 per week whereas a sub-

subsistence fisherman's return from sale of fish varied from \$ 10-40 per week. Both groups of fishermen indicated that 80% of the time, the returns are around the lower range and also in bad weather there are weeks of no fishing at all.

Fuel costs were the major expenditure for each household followed by food. Food items include such things as flour, sugar, tea, cigarettes, kava, and canned meat. Major non-food items include kerosene and benzine for lighting. The average estimated fuel cost for an artisanal-commercial fishermen was around \$ 30 per week and that for a subsistence fisherman fuel expenses ranged from \$ 3-\$ 10 per week. The household expenditure for both groups of fishermen varied from \$ 15-\$ 40 per week.

V. Conclusion.

From the preceding study it is evident that fishing is one of the basic means of survival for the coastal population.

By adopting a modern fishery mode of production or improving the technical base of production to develop fisheries resources means producing towards achieving profit. It therefore implies the need for change which involves the separation of the fishermen from their means of production and means of subsistence, the breakdown of social relationships that secure their access to such means of production and subsistence, and the destruction of a mode of production whereby the fisherman have control over their livelihood. By taking into account the general socio-economic situation of these small island economies, it still remains a question as to what extent these social changes would be effective towards the development of the household fisheries and the general economy.

The adoption of the modern fishery mode of production would eventually cause the breakdown of household fisheries into two classes, that of owners of production and the labourers. With limited opportunities for employment in other sectors, the majority of the fishermen would be left with no means of survival.

Under the existing conditions, establishment of markets as a basic tool for development would have very limited effects. From the analysis, it is seen that fishermen only participate in the market to meet their cash needs, thus the supply of fish is not related to the demand by consumers. Prices are not formed under competitive conditions and prices do not respond to either supply or demand. A fisherman determines his price on his own discretion and if it is a group fishing then the group members decide for a common price. Considering the responsiveness of demand for fish to prices, it could be said that there is limited demand as a result it does not have a significant influence on the price.

Thus the basic tools for market operations does not exist. Planning in this direction would therefore not only create limited effect on development but may even create further social and economic problems.

The existence of such traditional societies in the small island economies could be said as an inherent condition relating to its historical situation as well as its limited resources. It is therefore important to understand these conditions of the household

fisheries in order to determine the approach to be taken to develop a strategy for its planning.

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