

Types and Activities of Small Fishing Economies in the South Pacific — A Case Study of Fiji —

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Abstract

This study emphasises the special character of small-scale fisheries within the complex economic structure. It is seen that household production for subsistence still predominates the domestic fisheries within a communal society. While within this traditional framework, artisanal-commercial fisheries has developed with introduced simple techniques and gear, distinguished by low productivity and inferior marketing and distribution systems. These coastal fisheries and communal tenure system has led towards a reasonable exploitation, conservation and management of resources and has enabled the coastal fisheries to provide for the domestic demand. The study further tries to point out the limitations of its progress and its near stagnation under the present circumstances.

The rural socio-economics of the peasant farmer has been adopted for the analysis on small scale household fishermen and fisheries production. The fishing and agricultural community studies has been based on sociological analysis in terms of the structure and organisation of the community and the social and cultural relations of production and distribution. Furthermore an economic approach has been used to visualise within the definitions of the capitalistic process.

1. Small Fishing Economies - Definition

1 (a). Classification

“Classification of fishing activities into small-scale or large-scale, inshore or offshore, artisanal or commercial have been made by numerous national bodies in an attempt to define the target group for development purposes and for collection of statistics. Most often, the separation into groups has been made by vessel size or power unit, by type of gear, by distance from shore, or by some combination of these” (SMITH ; 1979 : p. 3).

These distinctions are useful within a national framework depending upon the circumstances of the situation of fisheries and its development. For example, a small scale for one

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country may be considered as a large scale for another. On the other hand, a broader perspective of fisheries could be achieved using the socio-economic characteristics of the fishing activities, where fisheries could be classified into three categories ; industrial, artisanal and subsistence. Industrial and artisanal fishermen are considered to be commercially orientated while the subsistence fishermen fish for self consumption and do not enter the market economy. Figure 1. gives a comparison of the basic socio-economic characteristics of the industrial, artisanal, and subsistence fisheries.

(b). Small Fishing Economies

For the purpose of this study, a socio-economic classification has been used.

The South Pacific Islands fishery exhibits clearly these three categories of fisheries. To look at these categories in the context of small fishing economies, it is important to look at the micro aspect of the sector which is largely characterized by household as a unit of production and management. This household production comprises of artisanal, expressed as artisanal-commercial, and subsistence fisheries.

Small fishing economies is also represented by the fact that the small scale household fisheries are existing independently alongside the capital intensive, export - orientated

Figure 1. Socio-economic Characteristics of Industrial, Artisanal-Commercial and Subsistence Fisheries

	Industrial	Artisanal- Commercial	Subsistence
1) Fishing Unit	specialised division of labour	small, group or household labour, may employ labour	individual, family, community group
2) Ownership of means of production (boat & gear)	concentrated in small group, often non-operators	individual ownership, a joint or group owned	communal, individual ownership
3) Time Frame	full-time	part-time / full-time	part-time
4) Gear & technology	capital-intensive, mechanised	simple introduced, partly mechanised ie use of power boats, ice boxes, etc.	simple traditional some introduced ie. nylon nets, power boats, etc.
4) Motivation	high-affected prize, demand, competition	need for cash, subsistence consumption, obligatory purposes	immediate consumption of family, traditional ceremonial consumption
5) Marketing & distribution of catch	organised marketing systems	self-consumption, local market & unofficial markets; distribution affected access to means of production, kinship relations, household consumption needs	self-consumption, family, friends; distribution affected by kinship patterns, consumption needs of family
6) Capital accumulation	necessity for profit, high competition	may need profit to overcome competition, can continue without profit	no profit needed

industrial pelagic fisheries. The progress of the latter is not the result of the former, instead these are two isolated fisheries systems.

Moreover, the small fishing economies could be seen in the general setting of the small island economies ; characterized by lack of basic capital and expertise, limited economies of scale, limited scope for high technology industry, distances from major markets, social and economic dualism, natural catastrophies and so on ; thus giving an idea in terms of scale and mode of production.

c. Household Fisheries

Household fisheries is one where the production and management of fisheries is carried out by the members of the household. Yengoyan (1977) defines the household as ... "...the major link which embeds economic tasks and cultural practices into a semi-collective unit whose structure may be constant over time, but whose composition is highly variable depending upon endogenous and exogenous forces which govern how populations are regulated by socio-economic conditions" (YENGOYAN ; 1977 : p.13).

To have a clear comprehension on the relations that prevail in the household fisheries, it is important to look at the fishery within the theoretical framework of the rural economy of the household production. That is to say that the household production are weighed down most heavily by traditions of the past and the traditions of the patriarchal life. Therefore it is important to understand the consequences either of a pre- capitalistic stagnation or of a situation where the transformative effects of capitalism (development of the productive forces, and the change of all social relations, etc.) are taking place in the most slow manner.

Historically, fishing in the South Pacific has been a major socio-economic activity towards sustaining the livelihood of the coastal population. Fish provided a major source of protein supplemented by food gathering and shifting cultivation to provide towards self-sufficiency in food.

The western influence by missionaries, traders and later colonial administrators brought about the first major move towards socio-political and economic changes. These changes have worked towards a process of transition from production for subsistence only, to various degrees of involvement towards market economy. The artisanal-commercial fishermen as a group of production agents have also become integrated into this economic system by way of participating in the market to satisfy their subsistence needs. However, the structure of production unit in the rural fisheries is still dominated by village type household production both for commercial purposes and for subsistence.

Although the society may be referred to as one in transition, but a large part of the household is characterised by subsistence production. The subsistence fishery comprises of a large part of the production volume which is difficult to account for in value because of lack of statistics. It is undertaken by the members of the household where the labour and productivity vary according to the consumption requirements of the household and their social obligations. The artisanal-commercial fishermen are also dominated by household production with employment of family labour, relatives and friends.

The organization of production for the household fisheries is based on a non-capitalistic production process. It is influenced largely by two basic factors as indicated by Halapua, (1982.)

“The socio-economic relations under which production, hence distribution, takes place have two corresponding aspects ; the co-operative relations, in relation to their direct access to their means of production and subsistence which shape the organization of production and ; the kinship relations which influence the distribution of the social production hence the household consumption patterns.” (HALAPUA ; 1982 : p.3)

The fishermen operate on a self-regulated basis, either full-time or part-time. In most cases they own their means of production such as fishing gear and boat and some have ownership of fishing rights over their fishing grounds. Halapua(1982 : p.3) further describes the social situation as one where. . . “the fishermen own the product of their labour or fishing effort ; the fish they harvest” to illustrate as a feature of non-capitalistic production system. These characteristics of the household production system therefore are not based under competitive approach towards market participation. A fishermen does not have to accumulate capital by way of profit towards improving his productive capacity or for his market survival. His participation in the market is for some means of cash to meet his other subsistence requirements. This is a common feature of the household rural economy where market participation is towards providing a means of some cash.

“As in the case of all low-income rural producers, it is likely that the small fishermen’s greatest need is primarily for a guaranteed subsistence level of income. This is a fundamental and very common motivation both in small-scale fisheries and traditional small-scale farming throughout the world” (LAWSON; 1977 : p.49, HALAPUA ; 1982 ; p.3.).

In the South Pacific, the household fisheries play an important socio-economic role in terms of providing employment and as a source of food supply for the rural population.

2) Fiji’s Fisheries

Fiji’s fisheries could be divided into three categories, industrial, artisanal-commercial and subsistence. Industrial fisheries consists of a joint-venture fish processing factory and a state established fishing fleet to supply fish to the factory. Detailed analysis of this sector is discussed in section three.

The artisanal-commercial and the subsistence fisheries consisting of household production caters for the domestic consumption. Artisanal-commercial fishermen are those who have to obtain licence for fishing and have to register their fishing vessels. In Fiji, artisanal-commercial fisheries is dominated by two ethnic groups of fishermen from the two major communities, Indians and Fijians. Indian fishermen operate as individuals usually on a part-time basis when not engaged in planting or harvesting of crops. The Fijian fishermen operate on a full-time or part-time basis either as individuals or in a group. Subsistence fisheries is carried out on the reef and lagoon areas by the Fijian community.

To understand the significance and the role of household fisheries in the national economy, it is important to analyse the structure and operations of the household fishing

activities in its social and economic setting and the conditions under which fishing activities take place. This section attempts to look at the fishing operations of the artisanal-commercial and subsistence fishermen in terms of ownership systems, fishing grounds, social relations to production and distribution, licensing and fisheries management systems.

2. Social Situation of Small-Scale Fisheries

1) Marine Tenure and "Mataqali" Ownership System

Fisheries modernisation or capitalistic development is associated with breakdown of the old mode of production, modification, and replacement of it by a new type. To what extent the new system brings about a dissolution of the old mode of production depends on its solidity and internal structure. In what direction this process of dissolution will lead, in other words, what new mode of production will replace the old, does not depend on commerce, but on the character of the old mode of production itself.

Ownership and rights to use of fishing grounds have always been controversial issues throughout history as sea boundaries are difficult to identify and manage compared to land. Evidences of customary fishing regulations show that customary rights and ownership of fishing grounds existed in early coastal societies where fishing was largely for subsistence and in where production and utilization were ruled by custom. The purpose of such regulations were mainly to keep harmony within the neighbouring settlements by identifying some physical features as limits to one's boundaries so that each settlement had access to means of subsistence from the seas adjacent to their settlement.

However, through passage of time, increase in population, and improvement in technology together with shift towards competitive market-orientated fisheries necessitated for stringent changes in regulations towards management and control of resources by codifying and legislating the sea boundaries. For example, in Japan during the Feudal Era exclusive customary fishing rights were observed on foreshore and shallow waters adjacent to the settlements, but with the shift towards modern fishery and increase in population there was increased pressure on the resources. The traditional tenure system needed codified legislation and regulations, therefore the government used extensive and elaborate systems of dividing up coastal fishing rights based on the principles of the traditional fishing grounds. In the Meiji Reform, the feudal property was legislated by the state under a new fisheries law. With the development of coastal fisheries and aquaculture systems, the state divided the coastal areas into common fishing right areas and issued exclusive rights to these areas to fisheries co-operatives (under a new fisheries co-operative law). The fisheries co-operatives are now responsible for the management and control of their common fishing rights area. Thus, the coastal community operates its traditional fishing grounds as members of a co-operative.

Marine civil engineering techniques are used for measuring the baseline and limits of the boundaries of each common fishing rights area of a co-operative and the demarcated areas of each member of the co-operative. Boundaries are sometimes marked by placing stone poles for baselines and other focal points. In this manner the co-operative is able to regulate and

manage the use of coastal resources.

Marine tenure in Fiji is based on customary fishing rights on the reef, lagoon and forshore areas. The present fisheries legislation makes provision for the recognition of these customary fishing rights towards protection of the native subsistence fisheries and the native social and cultural systems. Ownership of fishing rights and access to fishing grounds are based on the system of kinship relations. To understand these customary fishing rights based on kinship patterns and its status of legislation, it is important first to look at its social organization in which the socio-economic activities including fishing take place and secondly to look at the system of land ownership which is crucial to the understanding of the ownership of the sea or the sea tenure.

a. Social Organization

Basis of traditional social organization in the Fijian community illustrated in (BIGAY. et al. ; 1981 : p. 52), shows six levels of organization from the household to the largest level of military alliance.

A village may sometimes consist of one or more ('Yavusa') which would consist of more than one 'mataqali'. Sometimes members of one 'Yavusa' may be found in more than one village. The 'Mataqali' are regarded as a hereditary unit with certain rights and functions within the 'Yavusa'.

"The Mataqali are first concerned with the more formal aspects of everyday living, such as the owning and cultivating of land. In this context, they sometimes divide into smaller units, 'itokatoka', consisting of a group of closely related households acknowledging the head of one as head of the whole group, living in a defined area of the village and organizing subsistence activities on a cooperative basis. 'Mataqali' also have a ritual and ceremonial function of which 'itokatoka' partake only as elements of the larger unit. For purpose of ceremony and religion and for the functioning of the 'Yavusa' beyond the village - which in traditional times usually meant in war-each 'Mataqali' was responsible for a ritual function concerned with food-bearing or weapon-bearing" (ROUTLEDGE ; 1985 : p. 28).

Therefore 'Mataqali' tended to assume specialized roles within the community in terms of defence, building, farming, fishing and so on.

b. Mataqali Ownership of Land

There is no individual title of ownership for village land. Land is held by a traditional land-holding unit called a 'mataqali' or 'itokatoka' and is used communally.

"There are more than 6,600 recognized land-owning units" (KERR & DONNELLY ; 1969 : p. 156).

Any member of the unit is entitled to use part of the land which is determined by rules of local custom. Farming is not done communally, that is, individual village members work separate plots within their 'matagali' land.

When Fiji became a British Colony in 1874, Fijians were assured by the Queen that their lands would not be taken away from them.

"They were also told that they would be governed in accordance with their ancient customs

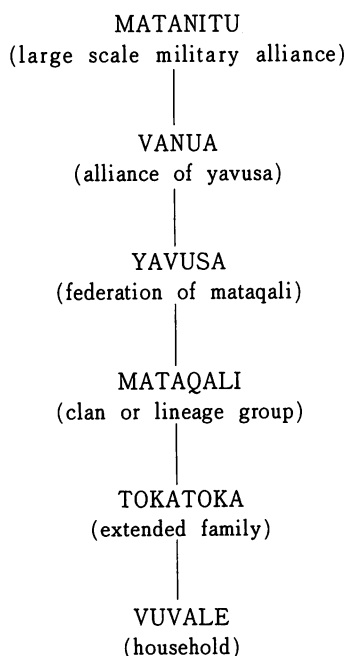
and traditions. The framework developed for the control of Fijian Affairs, closely followed the principle of indirect rule, and a Native Lands Commission investigated Fijian land titles, confirming the Fijian owners in possession, under customary law, of the lands they were using. As this usage rested upon membership of reputedly patrilineal social groups known as 'Mataqali' the legally recognized system of land tenure now acted as bulwark for the preservation of these groups and the 'Fijian way of life'" (NAYACAKALOU ; 1979 : p. 3).

Land is registered in terms of patrilineally organized social units which form lineages of the classical segmentary type of the one shown in Figure 2. The Native Lands Commission is a government body which looks after native land ownership affairs and disputes while the Native Land Trust Board is an independent statutory body which operates on behalf of the owners in concern with native lands. Legally recognized tenure of the native lands is based on the Native Lands Commission register of native lands which contains description of the boundaries of all blocks of land, their area and the owning units, and a reference to maps upon which the boundaries are marked.

The present law makes provision for ownership of native lands according to native custom as evidenced by usage and tradition, where ; . . .

"... "Native Lands" means lands which are neither Crown land nor the subject of a Crown

Figure 2. Fijian Traditional Social Organization



Source : (BIGAY, et al ; 1981 : p.52).

grant (36 of 1921, s.2.) "Native Owners" means the 'mataqali' or other division or subdivision of the Natives having customary rights to occupy and use any Native Lands ;.."(sec.2 Native Lands Ordinance 1902, cpt.114 of Laws of Fiji (1967 ed.).

"Native lands shall be held by Native Fijians according to Native Custom as evidenced by usage and tradition, subject to the provisions herein after contained such lands may by cultivated, allotted and dealt with by Native Fijians as amongst themselves according to their Native Customs and subject to any regulations made by the Fijian Affairs Board and approved by the Legislative Council, and in the event of any dispute arising for legal decision on which the question of the tenure of land amongst Native Fijian Courts of Law shall decide such dispute according to such regulation or Native Custom and usage....(sec.3 Native Lands Ordinance 1902, cpt.114 of Laws of Fiji (1967 ed.)" (CROCOMBE ; 1971 : p.207).

The purpose here has been to show the codification of the communal system based on traditional custom, as the British Colonial Administrators did not want to have conflict with the native customs and practices. With the development of agriculture, that is capitalistic plantation systems, the government felt the necessity of codifying the land boundaries ; thus giving communal and individual titles for land.

c. Customary Fishing Right on the Reef, Lagoon and Foreshore Areas

In the pre-contact time, the 'mataqali' owning coastal lands also held tenure to the adjacent mangroves, lagoon and reef, and had exclusive ownership of the sea floor, water, shellfish, fish and rights of passage. The ownership of land was seen to form the basis of the ownership of sea. This is seen to be defined in the word 'Vanua' which is also the word for land. However the word 'Vanua' is used not only for the physical dimension, but also the social and cultural dimensions of a particular social unit.

"The physical dimension of the 'vanua' consists of all the 'gele' (soil or dry land) and 'wai' (water) which the members of a particular tribe have claimed and substantiated to the Native Land Commission to be their rightful forageing, hunting and gardening areas since their great ancestors first occupied the place.

It includes all areas now registered under each 'mataqali' (sub-clan of agnatically related people). Although land registration has since established the legal rights of ownership to the 'mataqali', all the land areas under the control of the various 'mataqali' which still recognize, the ritual leadership of the 'Turaga-ni-Vanua' (tribal paramount chief) are still to some extent considered as 'vanua' land. The land and water areas belonging to a 'vanua' (tribe or Yavusa[clan]) are generally of four main classes. They are the 'gele ni teitei' (gardening land), the 'veikau' (forest land), the 'yavutu' (founding ancestor's house sites) and the 'qoliquoli' (fishing area). [RAVUVU ; 1983 : p.71]

"The qoliquoli (fishing area) includes all rivers, creeks, lakes and stretches of sea which a particular 'vanua' or its component 'yavusa' and 'mataqali' claimed as their traditional fishing grounds. Although other classes of land have been registered under the 'mataqali', the 'qoliquoli' is still open to the wider community of related kinsmen to exploit as their most important source of protein food". (... ditto, p.75).

Sea tenure of the 'qoliqoli' area varied according to geographic, social and political factors like population pressure, marriage, adoption, shift of power and influence through warfare and alliances. As a result, the allocation of marine resources have been uneven between villages and territories. Further, Baines (1982) in his study on marine tenure in the Vanua Balavu Island of the Lau Group added that . . .

"... the order of establishment of the village has also contributed towards unequal marine resource territories. Moreover, that resource gains made by those communities whose chiefs gained enhanced power and influence through early adoption of Christianity in the nineteenth century had further complicated the pattern of fishing rights areas" (BAINES ; 1982 : p.193).

To formalize land tenure for agricultural development, the colonial government codified land boundaries existing during 1874 by adopting the 'mataqali' as the land-owning unit based on the traditional system of ownership. Sea tenure on the reef, lagoon and foreshore areas was treated a little different in that Native Customary Rights were recognized based on the native custom without codifying the boundaries, thus the traditional system continued as it was ; according to its own forces of social tradition and custom.

A Native Fisheries Commission was established in 1923 to administer these customary boundaries but did not make moves to clarify the legal problems of ownership as it avoided to have clash with Native Custom. Furthermore, the colonial government and colonial capitalist were not in any extent interested in fisheries development as there was not enough market for fish and fisheries products, thus the traditional pattern was allowed to continue on its own.

Hornell (1940) in his report on 'Fisheries of Fiji' includes the following clarification on the fishing rights of 'mataqali' in reef and foreshore areas. . . "Prior to the voluntary cession of Fiji to the British Crown, fishing in the rivers and in the sea was ruled by custom. The rights of the chiefs were paramount, and in practice the chiefs were the distributing agency in the areas which each controlled. Each tribal unit, the Matanggali (Mataqali) had its fishing area accurately defined ; fishing within this area by people of another Mataqali was resented, and the intruders treated as poachers. (HORNEILL ; 1940 : p.45.)

1881 : At a meeting of a Native Council held at Nailanga(Nailaga) 5th November, 1881, the Governer Sir George William de Vouex, in his opening address said : -
 "Chiefs of Fiji. . . . I now return to the Queen's letter, and as I have to tell you, with regard to your representation on the subject of the reefs, that the matter will be carefully investigated and that it is Her Majesty's desire that neither you nor your people should be deprived of any rights in those reefs which you have enjoyed under your own laws and customs ; and I may tell you, on my own part, that measures will be taken for securing to each Mataggali, the reefs that properly belong to it exactly in the same way as the rest of their land will be secured to them." (. . . ditto ; p.45).

'Native Customary Fishing Right' was first defined in the Birds, Game and Fish Protection Ordinance of 1923. It stated the following. . . .

"... 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 license so to do under the hand of the Colonial Secretary. . . . All dispute between mataqalis 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. . .". (... ditto ; p. 34).

This clause has been incorporated in the Fisheries Ordinance (1942) as the "Protection of Native" (section 12) which is still in effect.

Hornell (1940) in presenting the state of fisheries regulations made the following comment on the mataqali rights, . . .

"The customary fishing rights of native Fijian in the reefs and shell fish beds being thus recognized, the present is an appropriate time to clarify the position further, and to have the limits of the reefs and shell fish beds belonging to the different mataqalis defined and properly recorded" (... ditto ; p. 35).

Section 13 to Section 19 of the present Fisheries Legislation (Fisheries Ordinance (1942) chapter 135 of Laws of Fiji) state that the Native Fisheries Commission established under the Ministry of Fijian Affairs is to be responsible for issues relating to customary fishing rights and boundaries. Section 18 and Section 19 of the Ordinance relate to the register of the customary fishing rights boundaries. Section 18(2) makes provision that the register of native customary fishing rights would be kept by the Register of Titles in the same manner as Register of Lands. Section 19 finally indicates that the register would be for public use. . . .

"... when the boundaries of the fishing rights of such mataqali or subdivision have been finally fixed and determined."

From the foregoing extracts it is evident that the basis for sea tenure was determined in the same manner as the land according to the native custom. However, land has been codified for the purpose of agricultural development but the sea has not been codified yet.

Under the present system, the customary fishing rights boundaries tend to be distinct geomorphological features observable from the surface.

"Thus a boundary may begin from the tip of a rocky promontory, bear along a straight line to a patch reef, perhaps a kilometer off-shore, change direction at this reef to continue several hundred meters to a pass in the main reef then to follow the seaward edge of the main reef to a conspicuous reef hole before re-crossing reef and lagoon to intersect the coast" (BAINES ; 1982 : p. 191).

Baines(1982) used the above description for giving the identification of the fishing boundary of a fishing mataqali in the island of Lau.

In other words, the fishing rights boundaries are identifiable marine physical features like patch reefs, reef holes and reef passages which are bounded with the outer limit of barrier reef which is exposed at mean low water.

The customary fishing rights are divided into yavusa or vanua, depending upon the historical status of the social group and its existence through time. These vanua and yavusa would consist of more than one village, therefore several mataqalis would have a common fishing ground where as the vanua and yavusa land is divided into actual mataqali plots.

There are no written regulations for mataqali fishing practices because of differences in

culture and tradition. Each mataqali or sub-division has its own identity and localized set of customary fishing practices which are passed on from their ancestors.

According to a fisheries officer interviewed at the Native Fisheries Commission, surveys have been carried out by the Commission to identify the boundaries of particular mataqalis as part of a yavusa or vanua fishing rights. The villagers until such time were only aware of their ancestral boundaries which usually overlapped with the neighbouring boundaries. Thus, with the increase in pressure on resources, for the purposes of management, and to clarify the legality of the boundaries, the Native Fisheries Commission is making progress to map the boundaries for all coastal communities. This identification of boundaries has been based upon discussion with various villages with overlapping ancestral customary boundaries to come with terms with a common boundary by the Fijian Administrators, chiefs and the Native Fisheries Commission. Thus, these customary rights boundaries have been mapped by distinguishing the boundaries of marine physical features and seas adjacent to the settlement and the land of the particular group. These physical features are still used to distinguish boundary limits in settling disputes and in negotiations with coastal developers, etc. These mapping patterns for determination of boundary for each 'yavusa' or 'vanua', thus do not take account of the ecological factors or the size of population of the particular group, etc. but is based on the traditional boundaries claimed by the chiefs of the particular area in the similar manner as the land codification took place.

On a separate issue, based on socio-political reasons such as the growing cash economy, increase in commercial fishing operations, widening racial imbalance and increase in coastal development activities, the Fijian chiefs have sought to clarify the legal aspects of the present regulations. Much of the survey activities on boundary limits carried out by the Native Fisheries Commission has been as a result of the efforts made by the Great Council of Chiefs.

The Great Council of Chiefs have criticised the British Policy on the sea tenure and have restated 'Queen Victoria's' original intent to govern according to customary practices. They have further claimed that the existing laws are unclear and that they need clarification, as by the customary practice they are the owners of the fishing grounds including the reef and lagoon areas.

At the meeting of the Great Council of Chiefs in Bau in November 1982, the Council discussed issues relating to ownership of fishing grounds following the report prepared by the committee appointed at the 1978 (Lakeba, Lau) Council Meeting. The report made the following request: "Laws should be enacted to make the situation clear so that there would be no arguments in future on the ownership of the land beneath the seas bordering Fijian land". (The Fiji Times ; November 4, 1982 : p.1).

The present study limits analysis on the legal aspects relating to clarification of the legislation. However it must be pointed out that if the present customary rights are turned into exclusive property ownership like the land ; the whole scene of coastal fisheries or the traditional patterns of coastal subsistence utilization would change into a completely new direction. Unlike the agricultural resources, the fisheries and sea resources are difficult to manage, and if ownership titles were granted, it would create problems of overexploitation.

Furthermore, in the context of Fiji's multiracial economy, the coastal communities who possess the ownership of the fishing grounds would be in a position to "lease" their fishing grounds like the land to those with entrepreneurial capabilities and capital for exploitation. Thus, not only will there be problems of resource management, but also social problems relating to the breakdown of traditional subsistence of protein and a further lack of social and economic progress of the fishing communities.

2) Fishing Licensing System

Fisheries legislation in Fiji is governed by the the Fisheries Ordinance (1942) and the Marine Spaces Act (1977). Section 8 of the Fisheries Ordinance empowers the Minister to make regulations on fishing methods, areas and seasons, minimum size limits of fish, net regulations, etc. The Marine Spaces Act has been enacted as a result of the declaration of the 200 mile Exclusive Economic Zone to regulate the activities including fisheries within the 200 mile zone.

Coastal fishing licence are of two categories, inside and outside the demarcated areas. Demarcated areas are areas which have customary fishing rights. All commercial fisheries require application to the Fisheries Division and require payment of fee and registration of fishing vessels. In the case of licence inside the demarcated area, fisheries regulations require permission from the customary right owners by the authority of section 12 of the Fisheries Ordinance. To seek permission, the fisherman has to follow certain customary norm, in that he has to make presentation of 'yaqona' (kava), money and food items to the head of the fishing rights area in which he seeks to carry out his fishing operations. If the chief, usually (Turaga-ni-Yavusa) or (Tui-Vanua) approves on behalf of the right holders, he would issue a written permission which would then be presented to the 'Roko' at the District Administration Office. The 'Roko' would check that the area agreed in the letter actually belongs to the signatories of the letter. Upon confirmation by section 8, Part II 4(1) of the Fisheries Ordinance, the request is put forward to the District Commissioner in which the fishing area is located. The District Commissioner has discrete powers to refuse any arrangements between villagers and individuals seeking permit to fish. The District Commissioner acts on the advice of the Fisheries Division and if a permit is granted by the District Commissioner, the fisherman then pays his yearly licence fee at the Fisheries Division.

Fishing outside demarcated area by artisanal-commercial fishermen do not require any customary permit but fishermen have to apply for licence from the Fisheries Division. Foreign fishing vessels and other pelagic fisheries registration is covered by the Marine Spaces Act (1977).

3) Structure of Fishing Communities

The small scale fishing operations are organized on individual basis, formal, and informal group operations. Informal groups include members of a particular mataqali, groups of friends, relatives, and women fishing groups. Formal fishing groups are those initiated by the Fisheries Division as a new approach towards rural fisheries development. Group operations have been emphasized on the outer islands of Fiji and only recently,

groups from the rural areas of the main islands have participated in this type of fishery.

There are some groups, which operate independently in the village community towards the Fisheries Division Scheme where as in some villages the Fisheries Division Scheme involves most members of the village. Records on group formation, procedures of operation, etc. and statistics on group fishing have been limited. However, during the interview on village fishing activities ; group operations under the Fisheries Scheme operated in Vatutavui Village in Ba where the group was limited to three members of one mataqali. The villagers claimed that the group operation was an independent venture of a particular household in one mataqali of the village. Since the group belonged to the same yavusa it had equal rights to carry on activities at its own efforts which was approved by the chief. Thus, the group was utilizing its rights of customary access to the fishing grounds. On the other hand, Nokowaqa village on the Mali Island operated a group fishery under the Fisheries Division Scheme with equal participation of all members of the village in terms of contribution of funds and participation in the fishing operations.

Another type of group operation is the Co-operative organization registered under the Co-operative Law. In general, co-operative development in Fiji has largely been concentrated on village level consumer and marketing operations. That is Co-operatives operate as retail stores for supply of goods. As a result co-operative development has been limited to these areas which has further limited the scope for growth of any infrastructure to raise the co-operative system into higher levels of activity. Moreover, attempts to establish co-operative for a wider role in the society have been unsuccessful due to lack of capital, expertise, managerial skills, and conflict of ideas with the social systems of these traditional societies.

In 1981 there were eleven fishing co-operatives operating under the Ministry of Co-operatives. Activities of fishing co-operatives involve fishing operations and marketing of catch. Membership and operational procedures are of a rather static nature where a group of people organize and operate like a joint-activity. Most fishing co-operatives failed to continue operations partly because of the lack of capital and expertise on management of the business but moreover because of the variable fishing income. Co-operative principles incorporate that any surplus should be distributed equally, however this rarely happened in the fishing co-operative operations within the rural communities as a result of poor pricing of fish, the rural fishermen's motive to production, and with a further influence by the traditional customs and obligations. The fishing co-operatives therefore do not operate with the motive or intention of generating large surpluses but some means of cash to meet their subsistence needs. It must also be pointed out that co-operative extension services for fishermen have been limited towards providing the necessary impetus for commercial operations and taking advantages of joint working and selling.

Village fishing activities of subsistence and artisanal-commercial fisheries are still based on traditional social relations between groups and kinship members either formal groups as under the Fishing Scheme or informal groups. Fishing is carried out to meet immediate consumption need and for some demand for cash.

Fishing vessels range from wooden punts to outboard motor boats which may be

individually or group owned. Sometimes mutual borrowing of vessel and gear takes place in return for fish, or other payment in kind. According to the Fisheries Division Survey in 1979, there were about 850 coastal fishing villages.

Non-Fijian fishermen, majority of whom comprise of Indian artisanal-commercial fishermen operate as individuals usually on a part-time basis. These fishermen operate fishing because they are unable to lease or rent land to operate farming, and/or their position in their families require other sources of income to meet basic needs, and some enter into fishing operations because they are not engaged actively in farming or harvesting, thus seeking other sources of income to better their economic positions.

Family or hired labour is usually used. These fishermen favour shallow-water gill netting using one motorized (25-35ft) vessel and one or two punts or skiffs. Some fishermen use launches but majority use outboard motor boats. Income from farming and children or relative working on paid employment supply the main source of capital for these fishermen. Therefore there is no basic accumulation, instead capital is transferred from non-fishing income with which the fishermen are able to purchase necessary gear and equipment and are able to operate independently and some are able to hire labour whenever required.

Within this category of artisanal-commercial operations over the last ten years or so, there has been development of a few enterprise operations which operate on a full-time basis with comparatively large scale activities, owning more than one vessel and use improved gear and technology and employ hired labour. These fishermen usually operate part of their operations on some secured market i. e. supply on a contract basis to hotels, restaurants and supermarkets and sell part of their catch at the local market or to the National Marketing Authority.

The small scale fishing society exhibits various types of fishing organizations much of which exists under the traditional social relations of production. Some modified and to a lesser extent some new developments emerging in a contradictory manner or otherwise are all a result of economic process ; much of the activities exhibit a pre-capitalist fishery or production mode, where as on the other hand some activities indicate the development or direction of adherence towards a capitalistic fishery.

To understand these various types of fishery operations within a society at a particular point in time as components of the development process, and to comprehend the significance of each type, and the direction in which each would lead and hence its planning needs some systematic details on actual organization, management and operations of each of the types of fishing activities.

4) Organization, Management and Operation of Fishing Activities

a. Subsistence Fishery

Subsistence fishing is still an important activity towards self supply of protein for the coastal population. This non-monetary activity poses several practical barriers to estimate production and record details on its operation as it takes place in a complex set of environment.

The Fisheries Division has attempted to carry out a survey on the subsistence activities

during 1978-1979. Results from the survey indicated that the entire subsistence fishery was estimated to be 13,826.1 mt/year. The subsistence scale-fish catch was estimated to be 37 mt/day or 0.34 kg/day/head of coastal population. The survey further indicated that subsistence activities varied according to the location of the coastal village, for example, in the Rewa Province it was estimated to be 129 kg/village where as in Lau it was 3,455 kg/per village per year. Table 1 indicates below the results of the survey.

Table 2 gives an indication of the total production by small scale fisheries. It is seen that the subsistence fishery contributes a significant part towards the total production which is used for rural consumption.

Subsistence estimates given by the Fisheries Division show a constant increase which is supposed to be indicative of increase in effort. Major fishing techniques include collection by hands of intertidal shellfish and crustaceans, fishing in shallow waters, diving and

Table 1. Subsistence Fishery Parameters Derived from the Survey Results: (Fisheries Division)

Province	Total No. of Villages	Estimated Total Annual Catch (mt)
Kadavu	66	221
Lomaiviti	72	553.8
Rewa	48	74.5
Serua	25	190.5
Bua	41	397.3
Cakaudrove	128	276.6
Macuata	57	650.5
Lau	67	2,777.8
Tailevu	105	2,570.8
Nadroga	88	1,911.6
Ba	60	1,004.4
Ra	93	3,197.3
TOTAL	850	13,826.1

Source: Fisheries Division Annual Report. 1979; p.36-37.

Table 2. Small-scale Fisheries Production (mt)

Year:	1979	1980	1981	1982	1983	1984
Total Artisanal - commercial (fish & nonfish products)	2,987.3	3,527.2	3,797.3	4,505.8	5,662.5	5,987.3
Subsistence	13,800	14,000	14,200	14,400	14,600	14,800

Source: Fisheries Division Annual Reports. (1979-1983).

spearfishing as well as gill netting from punts, fish drives, and traditional traps.

With the introduction of cash economy and increase in demand for goods and services, the fisheries sector like other agricultural sectors is also gradually changing although a larger part is still under subsistence production. It is seen that coastal villages near to urban centres often attempt to sell their extra catch to earn some cash to meet their other subsistence needs. Also with the adoption of introduced techniques by fishermen, such as those who use motor boats also attempt to sell their excess catch in order to meet their fuel expenses. Thus, these group of fishermen could be referred as semi-subsistence.

Much of the subsistence catch (under non-licensed production) is sold along the road side or near the jetties or landing spots as these fishermen cannot enter the official market ; besides their activities are too small to afford transportation costs, .

Women contribute a large portion of subsistence catch for the daily consumption and also for sale. Much of the subsistence catch for sale includes non-fish production of crustacean, molluscs, and seaweeds sold by women along the outskirts of the municipal markets and along the roadsides.

Women engaged in these semi-subsistence activities provide an alternative source of cash for their families immediate needs. During the field survey, it was found that in Draunivi village in the Ra Province, women were actively engaged in collecting of crab and selling when there was a shortage of cash. During the observation period, on one occasion the women organized into a group for collecting crabs to sell for cash to pay for the expenses to attend a church gathering in Nadroga. On a second occasion, two high school girls caught crabs for sale to buy new school uniforms. In both cases, the crabs were sold along the road side in front of the village.

However, subsistence fisheries at large still provides the most important source of protein for the coastal population ; involving the women and children who glean on the reef at low tide to provide for one or two meals. Men usually use boats for fishing either in groups or as individuals to provide for their household's subsistence requirements.

Both categories of fisheries show increasing trends in production, and the fact that both fisheries have a common fishing grounds, and further that the subsistence fishery is gradually changing towards commercialization, therefore it is necessary that subsistence fisheries as part of fisheries planning cannot be ignored or left unnoticed as the subsistence component of the sector is considerably large in its contribution towards resource exploitation. Moreover, both categories of sharing the same fishing grounds provide high competition for resources, thus would pose problems of resource depletion if left unnoticed.

Although estimating of the non-monetary sector is difficult, it still needs great care in its methodology of estimates for planning. Some degree of detail would enable for better forecast, give the status of resource exploitation, the degree of self-sufficiency, and the direction of surplus contribution, if any, towards commercialization.

b. Artisanal-Commercial Fisheries

Artisanal-commercial fishermen operate either inside the demarcated areas, that is areas which extends from the low water mark to outer boundary on the fringing reefs ; or outside the demarcated areas.

Table 3 shows the number of licensed fishermen in both the areas. From the figures it is seen that fishing has largely been concentrated inside the demarcated areas (areas having customary fishing rights) or the coastal areas because of the use of simple introduced and traditional techniques of gear and equipment which restricted deep water fishing. With development of storage facilities such as use of ice boxes, fishing techniques of trolling, and use of cabin launches, fishermen are able to operate outside the demarcated areas. Licence issued outside the demarcated areas shows a rapid increase, however, much of the activities is still restricted to inshore waters with only some deep sea fishing.

Some fishermen are hesitant to invest into larger vessels with cold storage facilities because of the part-time fishing operations as well as fear of the uncertainty of renewal of fishing permits from the customary owners.

According to the fisheries regulations, fish salesman has to obtain a fishing licence of either inside or outside demarcated area. It is seen that some licence holders in fact do not involve in actual fishing operations but engage as agents or middlemen in selling of fish only. Majority of these group of fishermen hold outside demarcated area licence since there are no customary permits required. Although this is only a minority group practice in the larger urban centres, it has several socio-economic implications on the direction of development of the fisheries sector. Firstly, it shows a reflection on the poor licensing system and secondly, it indicates the development of middlemen system as with high transportation cost and lack of storage facilities, the fishermen are unable to transport in time and carry out the selling themselves as a result they are forced to sell to the middlemen.

Fisheries regulations also require artisanal-commercial fishermen to register their fishing vessels. Open canoes and traditional punts are now being replaced by out board motor boats and launches. Table 4 gives the number of registered local fishing vessels from 1980-1983. It is seen that the number of vessels registered in the Eastern Division is lower than Central or Northern Division. Most of the small islands fall in the Eastern Division where the fishermen are largely engaged in subsistence or group fishery, where vessels are usually

Table 3. Total Local Licensed Fishermen Inside and Outside the Demarcated Areas

Division	1980		1981		1982		1983		1984	
	inside	outside	inside	outside	inside	outside	inside	outside	inside	outside
WESTERN	216	150	296	129	355	169	294	154	232	190
NORTHERN	310	60	288	67	287	148	309	117	431	63
EASTERN	35	2	28	1	40	4	58	2	41	4
CENTRAL	206	176	240	234	210	287	205	320	315	262
TOTAL	767	387	852	431	892	608	866	593	1,019	519

Source: Fisheries Division Annual Reports. (1980-1982),
Ministry of Primary Industries. Commodity Profile: Fish. 1985: p. 3.

Note -The number of licensed fishermen does not relate to the total number of fishermen involved, as members of fishermen's scheme and fishing group's do not have separate license.

borrowed or shared. Thus the number of fishermen registered and vessels registered from the outer islands are comparatively less. The highest number of outboard punts and launches and the highest number of registered crew are from the Central and Northern Division, which indicates the areas of greater artisanal-commercial activities.

c. Rural Fishing Groups

Rural fishing groups include village groups, co-operative, church groups, social and kinship groups. Group activities could either be for subsistence or for commercial purposes.

Groups are organized and managed either by equal cooperation of members in terms of participation in fishing activities and contribution of funds, investment, and so on ; or a fishermen owning the means of production (boat & gear) would operate a group fishery on a share basis with the largest share to the owner and a certain proportion to the other members depending to the extent of their contribution for labour and equipment. A fisherman may also operate a group fishery by employment of labour and pay them wages or pay in kind.

Table 4. Registered Local Fishing Vessels

	Punts	Outboard Punts	Launches	H.C.Launches	Sail Boats	Skiffs	TOTAL	No. of Crew
(1980)								
CENTRAL	185	243	102	19	0	4	553	1,032
WESTERN	0	133	19	220	5	8	385	849
NORTHERN	6	206	29	0	0	7	248	570
EASTERN	9	25	4	0	0	0	38	101
TOTAL	200	607	154	239	5	19	1,224	2,552
(1981)								
CENTRAL	205	304	117	24	0	12	662	1,471
WESTERN	0	159	13	200	2	10	384	822
NORTHERN	77	189	50	0	0	0	316	543
EASTERN	3	21	5	0	0	0	29	78
TOTAL	285	673	185	224	2	22	1,391	2,914
(1982)								
CENTRAL	163	259	122	39	0	0	583	1,534
WESTERN	4	217	17	270	1	0	509	1,101
NORTHERN	92	267	77	0	0	0	436	965
EASTERN	9	25	10	0	0	0	44	99
TOTAL	268	768	226	309	1	0	1,572	3,699
(1983)								
CENTRAL	211	241	134	122	0	8	716	1,638
WESTERN	0	165	16	250	0	2	433	922
NORTHERN	43	213	106	0	0	0	362	928
EASTERN	7	39	13	0	0	2	61	151
TOTAL	261	658	269	372	0	12	1,214	3,639

Source: Fisheries Division Annual Reports. (1980-1983).

This operates as a group fishery because it needs certain amount of cooperation on the part of the owner and the labour towards the continuity of the same members and towards increasing the fishing effort.

According to the theory of economic progress, the latter group clearly illustrate the beginnings or foundations of a capitalistic process where as the former group operating with joint-working and selling signify of a co-operative or towards co-operative development process.

The Fisheries Division Rural Fisheries Development Programme on rural fishing groups facilitates for technical assistance on group operations. Membership within a group and group administration and management have not been given attention. Thus, group formation is based on several types of formal and informal socio-cultural relationships.

A rural fishermen's training program is established which attempts to provide training to the nominees of fishing schemes, village groups, co-operatives and other organizations. This is a six month program on fisheries related subjects and upon completion the trainees can buy a fishing vessel and gear if desired, through loan facilitated by the Fisheries Division from the Fiji Development Bank.

The Fisheries Division has yet to define its main objectives of rural fisheries development and accordingly try to determine the types of rural groups desired and hence its operation and management. Under the present circumstances of rural development programme, sooner or later economic inequalities within the fishing communities would arise if the second group type of fishery becomes the dominant type of fishing operation. Table 5 indicates the rural fishing group operations. These are the fishing groups and schemes operating under the Fisheries Division Programme.

Besides fishing group development, the Fisheries Division also has a program to assist the rural fishing communities on fish processing. This is facilitated through the rural food processing unit of the Fisheries Division. This involves extension advise to rural communities on preparation and preservation of mullet and beche-de-mer. Table 6 shows the details on the quantity of fish processed.

Fluctuations are due to lack of constant supervision by reason of lack of staff, together with natural disasters like cyclone and unfavourable weather.

Although the scheme provides a reasonable base for development of the outer islands rural fisheries where transportation costs are high for a reliable transportation network ; the

Table 5. Rural Fishing Group Operations

Year	No. of schemes	Catch (mt.)	Catch (S)
1978	24	37.5	25,537
1979	27	35.8	32,935
1980	26	39.6	40,725
1981	24	79.04	104,933
1982	34	99.31	133,321
1983	56	143.82	192,033

Source: Fisheries Division Annual Reports.(1978-1983).

Table 6. Food Processing Unit Activities
Quantity of fish and fish products processed

Year	Beche-de-mer	Salted Fish	Smoked Fish
1978	6.3	3.7	—
1979	3.3	1.02	—
1980	7.7	0.7	—
1981	7.2	9.65	9.85
1982	3.14	1.58	—

Source: Fisheries Division Annual Reports. (1978–1982).

program has yet to be established with involvement of greater part of the island community and with the necessary motivation by the Fisheries Division.

3. Production Structure of Small Scale Fisheries

1) Fisheries Production

Small scale fisheries production is composed of fin fish and a variety of non-fish aquatic products. Table 7 gives a list of common species sold in the local markets. Non-fishery products including crustaceans, molluscs and holothurians are largely collected by the subsistence fisherwomen who usually sell their own catch in the local markets.

Fin fishery is mostly carried out by men who operate within the reef and lagoon areas with some deep sea fishing. Certain species like the rabbit fish, sardines, surgeonfishes and so on are seasonal. Table 8 gives the artisanal-commercial production including the subsistence estimates to illustrate the domestic production by small-scale fishery. Statistical information is limited on the proportion of contribution by the different types of fishermen. Table 9 indicates the distribution of domestic production by the various channels.

2) Organization of Production

Subsistence activities are carried out mostly by women and children for the daily consumption requirements. There is an increasing tendency of the subsistence fisherwomen and men to sell their catch to meet their cash needs.

During low tide after completing the daily household activities women organize into groups for fishing. Several types of groups exists ; it may consist of a few neighbouring households, or women members of a particular mataqali or the whole village women who at the particular time are not engaged in other activities like gardening or weaving. The women either hand collect or use hand wading nets on the reef flats and mangroves and fish in the lagoon at low tide. Much of the actual catching and gathering is done on a self-basis for each household, but sometimes combined group effort is required eg. when encircling a school of fish or when operating larger nets. Fishing operations for these women are seen as important social activities. It creates a system of social motivation for the village women to

Table 7. Species of Fish and Non-fish Aquatic products
Commonly Caught by Small-scale Fishermen

FISH		
LOCAL NAME	SCIENTIFIC NAME	ENGLISH NAME
Tilapia	<i>Tilapia mossambica</i>	Tilapia
Yawa	<i>Chanos chanos</i>	Milkfish
Kawakawa	Fam. Serranidae	Rock cods
Kake	<i>Lutjanus spp.</i>	Small snappers
Kaikai	<i>Leiognathus equulus</i>	Pony fish
Mama	<i>Monotaxis grandoculis</i>	Large-eyed bream
Kawago / Kabatia	<i>Lethrinus spp.</i>	Emperors
Ase, Ki, Mataroko	Fam. Mullidae	Goatfishes
Kalia / Ulavi	Fam. Scaridae	Parrotfishes
Matu	Fam. Gerreidae	Mojarras
Nuqa	<i>Siganus vermiculatus</i>	Rabbitfish
Balagi / Ta	Fam. Acanthuridae	Surgeonfishes
Cumu	Fam. Balistide	Triggerfishes
Busa	<i>Hemiramphus far</i>	Halfbeak
Oqo	<i>Sphyræna barracuda</i>	Barracuda
Kanace / Kava	<i>Mugil cephalus</i>	Mullet
—	Fam. Atherinidae	Silversides
Saqa	<i>Caranx spp.</i>	Trevallies
—	<i>Sardinella spp.</i>	Sardinellas
—	<i>Spratelloides spp.</i>	Round herrings
Daniva	<i>Herklotsichthys punctatus</i>	Spotted herrings
—	<i>Stolephorus spp.</i>	Anchovies
Walu	<i>Scomberomorus commerson</i>	Spanish mackerel
Salala	<i>Rastrelliger kanagurta</i>	Indian mackerel
—	—	Mackerel*
—	Series Percomorpha	Demersal fishes*

* Not elsewhere included (others).

CRUSTACEANS, MOLLUSCS AND OTHERS

Ura moci	<i>Macrobrachium spp.</i>	Prawns
Ura moci	<i>Penaeus spp.</i>	Prawns
Urau	<i>Panulirus spp.</i>	Rock lobsters
Qari	<i>Scylla serrata.</i>	Mangrove crab
Kuka	<i>Sesarma spp.</i>	Mangrove crab
Mana	<i>Thalassina anomola</i>	Mud lobster
Lairo	<i>Cardisoma carnifex</i>	Land crab
Vasua	<i>Tridacna spp.</i>	Giant clams
—	<i>Conus spp.</i>	Cone shells
Kaikoso	<i>Anadara spp.</i>	Cockles
Kai	<i>Cristaria plicata</i>	Fresh water mussel
Kuita	—	Octopus
Dairo	<i>Microthele nobilis</i>	Teat fish*
Nama, Lumi	<i>Caulerpa racemosa</i>	Mangrove algae
Vonu	<i>Chelonia mydas</i>	Green turtle

* Beche —de mer (sea cucumber)

Source: Crossland, J. & R. GRANDPERRIN. 1979: p.5 & 6.

Table 8. Artisanal-Commercial Production

Year	1980		1981		1982		1983	
	mt.	(\$000)	mt.	(\$000)	mt.	(\$000)	mt.	(\$000)
Fish	2,571.41	4.34	2,632.42	5.80	2,928.14	5.63	3,549.34	6.73
Non-fish	1,255.1	1.20	1,352.53	1.21	1,775.32	3.76	2,330.34	2.68
Rural fishing scheme	14.0	0.15	79.04	0.11	99.4	0.13	143.82	0.19
TOTAL	3,810.51	5.69	4,063.99	7.12	4,802.86	9.52	6,023.5	9.6
Subsistence	14,000		14,400		14,600		14,800	

Source: Fisheries Division Annual Reports. (1980-1983).

Table 9. Summary of Local Fisheries Production and Distribution
(Excluding Tuna & Subsistence Fisheries)

	1979		1980		1981		1982		1983	
	mt.	(\$000)	mt.	(\$000)	mt.	(\$000)	mt.	(\$000)	mt.	(\$000)
<i>Fish</i>										
Markets	837.4	1,281.0	843.9	1,348.0	1,132.9	2,022.2	973.7	1,832.7	818.3	1,538.2
NMA	195.9	177.5	133.3	193.0	127.9	206.4	128.5	239.0	290.6	365.6
Other outlets	1,040.3	1,572.0	1,537.6	2,377.0	1,305.2	3,252.0	1,755.8	3,265.7	2,360.6	4,484.3
<i>Fish Products</i>										
Shark fin	n. a	n. a	53.7	403.0	41.6	207.7	14.5	108.8	n. a	n. a
Smoked fish	—	—	—	—	9.9	36.9	21.5	64.5	35.8	123.1
Salted fish	—	—	—	—	9.7	41.7	26.7	80.1	33.8	141.7
Frozen fish	n. a	n. a	2.9	14.0	5.4	24.4	7.5	37.5	n. a	n. a
TOTAL	2,075.6	3,020.5	2,571.4	4,341.0	2,632.4	5,791.3	2,928.1	5,628.2	3,539.2	6,652.9
<i>Non-fish</i>										
Markets	885.0	322.2	956.4	662.0	1,093.5	719.0	1,443.2	2,879.1	1,450.3	881.0
NMA & Other										
Outlets	26.7	45.7	42.0	190.0	39.3	145.0	57.1	113.9	849.2	732.3
Trochus shells	n. a	n. a	180.0	104.0	182.7	109.6	219.1	328.7	n. a	n. a
Mother of Pearls	n. a	n. a	29.8	66.0	17.1	26.4	17.1	51.5	n. a	n. a
Beche-de-mer	n. a	n. a	16.9	169.0	15.8	190.1	34.6	346.0	n. a	n. a
Frozen crab	n. a	n. a	—	—	4.1	20.5	4.3	34.1		
TOTAL	911.7	367.9	1,255.1	1,191	1,352.5	1,210.6	1,775.3	3,752.9	1,939.5	1,613.2
Rural fishing scheme	—	—	14.0	150.0	79.0	105.0	99.4	133.3	143.8	192.0

Source: Fisheries Division Annual Reports. (1982, 1983).

participate and cooperate in the group for their greater relationship outside the fishing circle.

In the outer islands women are engaged in processing of mullet and beche-de-mer to provide as a source of income. Women therefore contribute towards the domestic subsistence consumption, providing for the family nutrition as well as getting involved in commercialization of catch. When one looks at the statistics on the total production, subsistence estimates show the highest proportion of production, indicating the significant role of women in the fisheries sector. However as SCHOEFFEL (1983) in her report on "Women's role in Fisheries in the South Pacific" states the... "despite the active role of women, the women do not own the means of production besides simple hand nets". (SCHOEFFEL ; 1983 : p.160).

The artisanal-commercial fishermen in the village usually belong to the mataqali of traditional fishermen called the 'Gonedau'. The Gonedau are recognized as the skilled fishermen who have acquired skills from their ancestors. However, with progress in time and influence of western culture other village members are also entitled to engage in fisheries, although fishing for traditional and ceremonial purposes is still directed by the Gonedau clan.

Villages close to the fisheries Division Centres which have access to ice may engage in fishing for more than one night. Majority of the village fishermen engage in day fishery, however some operate night fishery. The fishing grounds are chosen according to the gear available, the engine speed, and hold capacity of the boats used ; and the availability of storage facilities. Artisanal-commercial fishermen mainly concentrate fishing in the inshore and offshore banks where as the subsistence fishermen's catch consists of varied range of resources include some deep water bottom fishes, but mainly reef, lagoon, and mangrove fishes. For a fishing trip, the previous catch affects the decision of the fishermen for the choice of the fishing spots as well as the seasonal availability of the certain species. Experienced fishermen ie. those who have been using the same fishing ground for a long time, usually have knowledge as to which areas of the reef or lagoon may have a higher yield of certain species at certain times. Table 10 gives an idea of the trip length, boat type and fishing methods.

In a one day fishing trip, fishermen usually leave early morning and return by afternoon in time to sell their catch. In the case of night fishery, the fishermen usually return early morning and sell their catch during the day. Fishermen operating part-time fishery and those living further away from the urban centers usually fish on Fridays in order to sell their

Table 10. Boat-type, Trip Length & Fishing Methods

Boat-Type	Length (m)	Crew	Trip Length (d)	Fishing Methods
Motor launch	7.4-12.3	6	3-12	Netting, Handlining
Open motor boat	4.9- 6.2	4	1	Netting, Handlining
Large canoe	4.9- 6.2	4	1	Handlining, Spearing diving

Source: CROSSLAND, J. & R. GRANDPERRIN. 1979; p. 5.

catch on Saturday at the market. A fisherman with a small outboard punt would hire 3 or 4 members usually from the same household or 'mataqali' as his crew. Forms of payment depends upon the social relations between the boat owner and the crew. In the case of immediate relatives (brothers, brothers and sisters sons and cousins) ; there are usually informal sharing of proceeds, or payment in kind including exchange of services, and in times of good catch, payment is made in cash. There are no formal agreement between boat owner and the crew. However, in the full-time artisanal-commercial activities, the crew members do not usually change to enable for experience in order to gain higher fishing efforts. In village fisheries, the owner of the fishing boat or in a commercial activity usually the elder member would decide the area or fishing grounds and the length of the fishing trip. Co-operative relationship between the members is important for group cohesion, for those members who do not own a boat or the means of production and for the owner of the boat to obtain higher fishing efforts. Fishermen however, do not specialize in any particular species. Netting is usually done for schools of smaller fish like mullet, rabbit fish or small cods.

3) Gear and Technology

Both traditional as well as simple introduced techniques are utilized at the household level of production.

Fishing boat is the major asset owned by the fishermen. Most of the traditional canoes are now extinct except for the 'Camakau' (sailing outrigger) and 'Takia' (open dugout) which is still used in the outer islands of the Lau Group and parts of Viti Levu but at a declining rate. Boats range from simple punts to outboard motors and launches. Launches include flat-bottom punt design with diesel or petrol in board motor, and round-bilged or hard-chined v-bottom types. Part of the reason for loss of traditional skills and sea fareing has been the shift from fisheries to agricultural production. In most of the islands of Pacific, with the introduction of colonial plantation, the labour shifted from traditional fisheries to agricultural production, thus in the process lost the ancient skills.

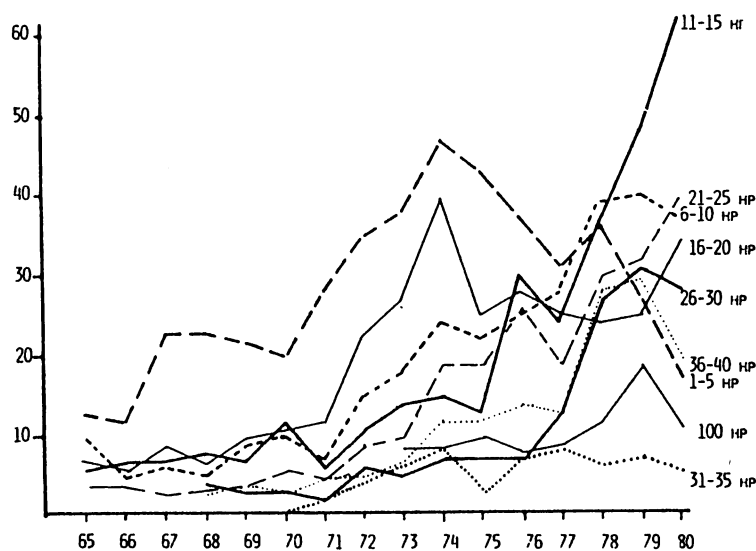
Outboards had been introduced into Fiji before the Second World War by the Indian indentured labourers, as the designs are similiar to those used in the Ganges. These punts are increasingly used with the introduction of Japanese technology motors. The use of outboard now dominates the small-scale fishery and communication in Fiji as well as the South Pacific. A fleet of outboard powered engine used on punts are seen in almost every village in Fiji for fishing and as a means of transport. Figure 3 illustrates the motor sizes of fishing boats used in Fiji.

Punts may be constructed by village labour or in the urban centres like Suva, however boat building skills are still limited. Zann (1980) in his report on Fisheries in Fiji makes an evaluation on the punts for fishing as follows...

"Punts are excellent calm-water craft but poor rough water fishing vessel. Their flat bottom, box sides, long and narrow shape, and high centre of gravity when loaded makes them unstable in rough seas". (ZANN, L. P. ; 1980 : p.17).

Punts therefore limit open-sea fishing. Majority of fishermen have had no formal

Figure 3. Moter Sizes of Registered Fishing Boats



Source: ZANN, L. P. 1982: p. 22.

education. Their knowledge on routine maintenance and basic repairs are limited. Although fishermen still possess most of the traditional fishing skills and have adopted some introduced techniques like deep water drop-lining and trolling for pelagic fish, are limited.

During fishing operations, only few fishermen carry basic equipment such as charts, compass, fuel reserve, spare-parts and other emergency equipment.

Fishing gear used by fishermen include various types of nets ; the most popular type of net is gill nets followed by set net, blocking nets, cast nets and verendah nets. Nets are used for smaller species for surrounding schools of fish at high tide or on the outer-reef. Subsistence fisherwomen use smaller hand nets operated by an individual or two people.

Spearing from boats is also common among village fishermen. Various kinds of fish drives and traps are still important traditional techniques widely practised in the village fisheries. Hand collecting of crustaceans and molluscs is the most common technique used by women in subsistence fisheries. Labour intensive technique of scare line and fish drives are also practised for traditional and ceremonial gatherings. This technique together with the operations of larger nets require cooperation of the whole village community. Traditional fishing for ceremonial purposes is usually directed by the village master fishermen called the 'Gonedau'. The Gonedau possesses knowledge about the sea, fish species, tides and so on acquired through his ancestors.

Majority of the fishing boats do not have any storage facilities, therefore in most cases fish is not iced until landed on shore. Only fishermen close to Fisheries Division Centres have access to ice for storage.

Gear and technology shows the adoption of simple introduced techniques which has enabled exploitation within the reef and outer reef areas ; however the fishermen lack skills and expertise on more advanced techniques for deep sea fishing as well as show a lack of basic management skills on maintenance of the gear and equipment.

4) Distribution and Marketing

The marketing infrastructure comprises of the municipal markets ; landing sites and unofficial roadside stalls, retail shops and supermarkets (referred to as other outlets) ; and the National Marketing Authority. Total weight of fish sold through these channels is given in Table 11 which illustrates the total artisanal market production.

Major markets for fish and fish products are the urban municipal markets where fish is sold alongside other agricultural products. Figure 4 shows trends in municipal market fish sales. On the other hand there is an increasing trend of sales by other outlets including roadside stalls, landing sites and jetties, retail shops, and supermarkets. Detailed record on these peddling activities are unavailable. Figure 5 shows the trend on fish sales through these outlets. Retail shops and supermarket sales include domestic fish purchased from local fishermen as well as imported frozen fish. National Marketing Authority(NMA) is a statutory body established to market agricultural produce including fish products.

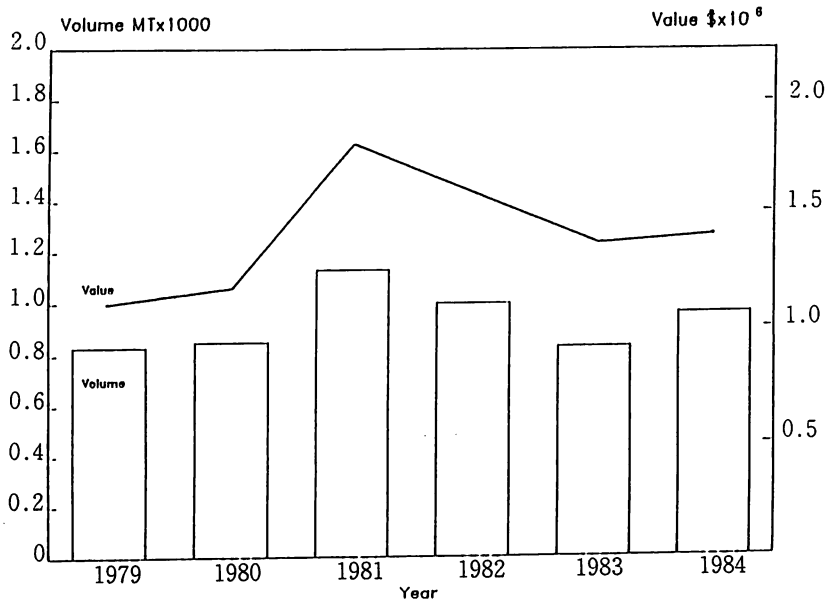
"Its objectives appear to be somewhat confused, lying somewhere between a non-profit organization to a government subsidy organization purchasing market surplus. NMA also takes a role which defers competition with the private sector". (LAL ; 1982 : p.15). Sales by NMA account for only 3 to 6 % of the total domestic fish produce. It operates through 3 retail outlets at its fish wholesale terminals in Lami, Lautoka and Labasa. These

Table 11. Domestic Artisanal Market Production (tonnes)

	1978	1979	1980	1981	1982	1983	1984
Municipal market fish sales	845.6	839.9	843.9	1,130.0	973.7	813.3	925.3
NMA fish sales	137.2	195.9	125.5	190.0	136.1	290.6	276.0
Other outlet fish sales	925.0	1,040.0	1,537.7	1,632.1	1,755.8	2,360.6	2,728.0
Small unit fisheries scheme	37.5	35.8	39.6	79.0	99.4	143.8	121.8
Municipal market aquatic non-fish	1,012.0	885.0	956.4	1,094.0	1,443.1	1,450.3	1,588.0
Other outlet aquatic non-fish	—	26.7	42.0	39.3	57.1	502.9	233.4
Miscellaneous (smoked fish)	—	—	—	19.5	21.5	69.6	31.0
TOTAL	2,957.3	3,022.8	3,545.1	4,183.9	4,486.7	5,631.1	5,903.5

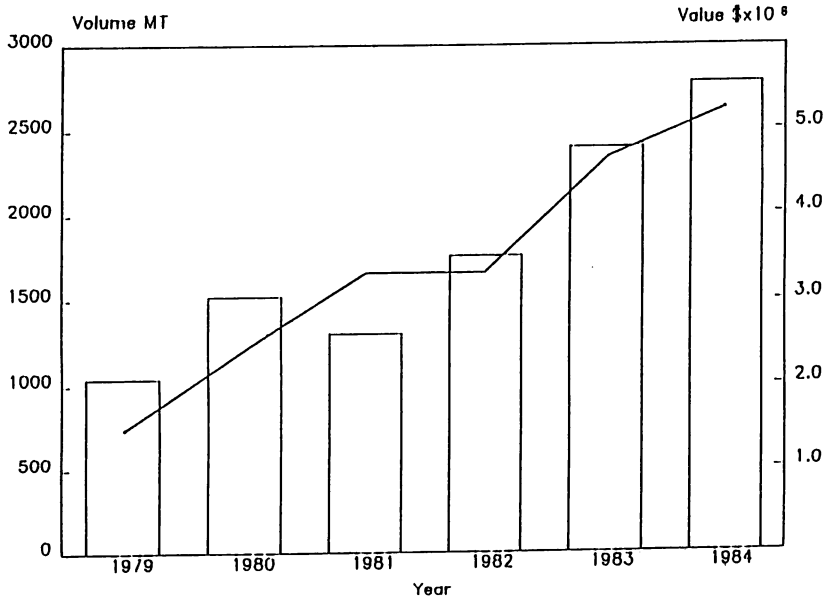
Source: Ministry of Primary Industries. Commodity Profile : Fish. 1985. p.4.

Figure 4. Trends in Municipal Market Fish Sales



Source: Ministry of Primary Industries. Commodity Profile: Fish. 1985. p. 43

Figure 5. Trends in Other Outlet Fish Sales



Source: Ministry of Primary Industries. Commodity Profile: Fish. 1985. p. 39

terminals are located away from major shopping areas and are not conveniently accessible to the larger consumer population. NMA is often referred to as a market of last resort for fishermen ; therefore sometimes the purchase includes poor quality fish that the fishermen cannot sell elsewhere. The NMA operations does not allow for control over its supply of fish as it does not buy fish at source. Fishermen usually bring their own catch to NMA with the exception of the outer islands where it receives supply directly from the rural fishing groups or purchased on behalf by the Fisheries Division vessels. NMA as a central marketing infrastructure with modern handling and storage facilities is unable to promote for change to become the major wholesaling and retailing system because the basic conditions for market operations does not exist, i.e. the supply and demand does not effectively take place.

These existing marketing structures and practices have essentially been shaped by the artisanal fishing operations which are relatively low in volume with low efficiency operations and with no specialized product or species. Figure 6 gives the various species composition of fish and fish products landed at the municipal market and other outlets. Although there may be dominance of particular species, but a fisherman does not specialize in any particular type of species. His catch composition relates to his fishing grounds and season. Furthermore, the consumer demand for fish is largely limited to whole fresh fish rather than frozen or filleted ; and demand for other aquatic products are also limited to a few species of shell fish and crustaceans.

Consumers also generally possess limited knowledge on fish quality as fish prices are related to species rather than quality.

Looking at the pattern of consumption for fish and fish products, it is seen that a large component of the consumption consists of imported canned mackerel.

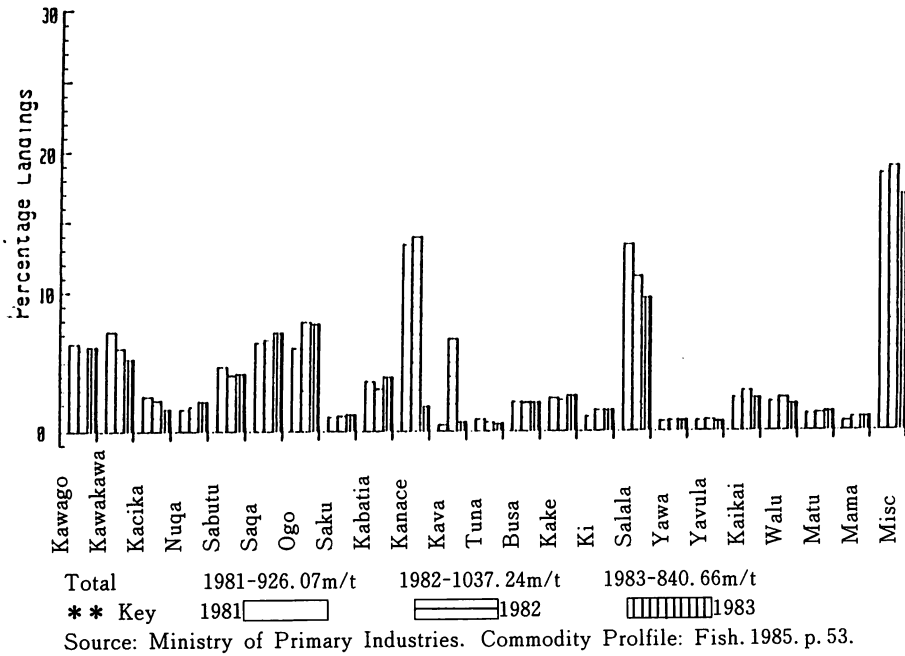
Factors which influence the domestic production consumption statistics are the subsistence estimates of the fisheries. These figures are crude estimates and do not give the true picture of the subsistence utilization. Taking into account that a large percentage of the fisheries is under subsistence production and the difficulty to estimate the sector thus to rely on this estimate may be misleading. Secondly it is seen that the consumer preference for fish protein varies greatly between locations and in the different ethnic groups.

However, the consumption per capita of fish is comparatively high, but the real consumption is not evenly distributed. High fish protein consumption is limited to the rural society within access to fishing grounds. The Central Division including Suva, Nausori, and Navua areas constitute the largest potential market but according to the statistics, its per capita consumption is lower than other centres.

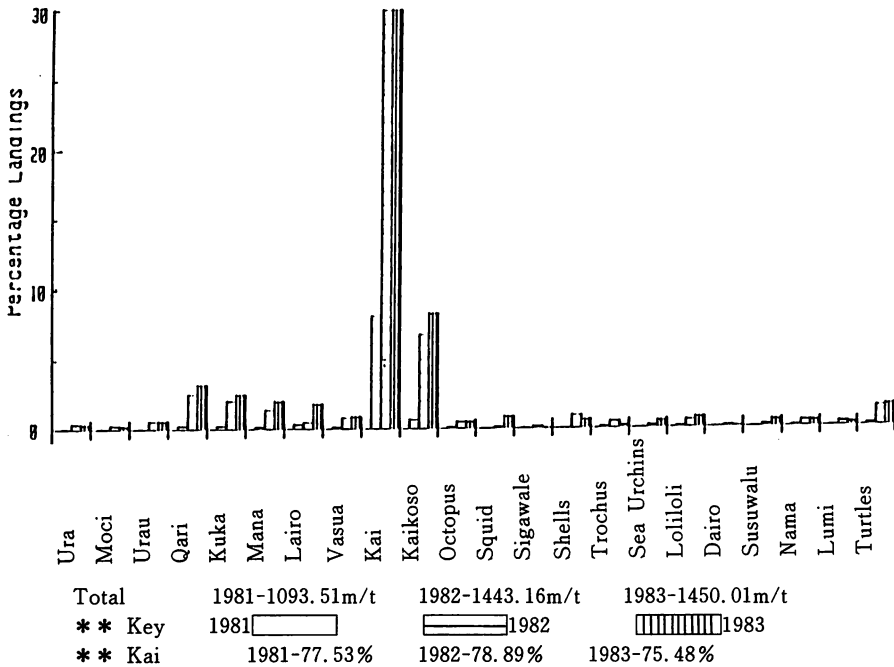
Marketing is done on a self regulated basis ; where fishermen sell their own catch. Decision on distribution is affected by the nature of the social circumstances and relations under which the production has been carried out. This social circumstances, in other words the social relations of the production unit are important to analyse their attitude to their involvement in the market.

The fisherman's decision on distribution is affected by his demand for cash to meet his subsistence needs and his social obligations towards his kinship ties and friends. A fisherman may also be obligated for payment of fuel or other expenses and if the boat and

APPENDIX 2 : Figure 6(a) Fish Species Composition Municipal Market Landings 1981-1983



APPENDIX 2 : Figure 6(b). Non-Fish Species composition Municipal Market Landings 1981-1983



gear is hired or rented then he may have to pay in cash or kind (which is usually in fish). Thus his decision on distribution is affected by his access to the means of production.

The marketing structure is one where the fishermen's involvement in the market occurs with the distribution of fish and not as part of the production process, exhibiting a non-capitalist marketing system. That is, a fisherman's participation in the market is limited to the allocation of the portion of catch he decides to sell. 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 or other expenses. His survival depends upon his access to means of production and subsistence.

Fishermen have to provide own transport to get the catch to the market, usually they hire taxi, carrier van, or use bus for transporting their catch. The quantity of catch also affects the mode of marketing and the actual place of sale. If the quantity for marketing is too small, a fisherman would prefer to sell along the road side instead of transporting to the market to avoid transportation cost and the market fee. Other rural fishermen also prefer to sell along the roadsides and unofficial markets to avoid time delays when there is no ice used and also to avoid the high transport costs. High transport cost has been one of the limiting factors to supply the catch to the urban centres.

Markets provide only basic traditional facilities for fishermen to sell their catch. Storage facilities are therefore limited. In most cases fishermen's unsold catch at the end of the day has to be taken back because of no cold storage facilities, and the next morning the fishermen have to pay fee again for the unsold catch of the previous days plus any new catch. Such a system creates a disincentive for the fishermen to bring in larger quantities of catch to the markets. Besides limited storage facilities, the fish market space is usually small and overcrowded as each individual fisherman brings along his small quantity of fish. In most cases fish is not sold by weight but by heaps, bundles and strings. Smaller fishes like mullet, rabbit fish, and pony fishes are tied into bundles and the larger snappers and groupers into strings. Other aquatic non-fish products are usually displayed in heaps such as shells, kai, and prawns.

In a group fishery price is determined by the group and in an individual operated fishery, the owner of the boat and gear would decide the price. Price is decided by taking into account the type of species and its size. Fishermen also take into consideration their demand for cash to meet for their other subsistence needs including the fuel expenses. A fisherman's attitude to market is not based on his demand for profit but some subsistence level of income. Price formation under this type of production is not based under competitive market conditions.

Major urban markets including Suva, Labasa, Lautoka and Ba involve some middlemen who purchase fish from fishermen from the rural areas and sell in the markets. However, there is no middlemen system in the sale of non-fish aquatic products at the markets. The non-fish products are sold by the 'subsistence' fisherwomen.

The supply of fish does not respond to the demand in the market as which is indicated by the wide fluctuations in price. Fishermen have to sell as quickly as possible to avoid spoilage and therefore have to reduce prices at the end of the day to get rid of their catch.

The increase in supply of fish entering through the official markets is seen to be far less than the supply through unofficial outlets. This further indicates the poor pricing of fish which does not enter the market at all and is therefore not based on any demand response. On the demand side, the wide fluctuations in prices indicates of the 'limited' demand for fish. It is also seen that consumption of canned fish is higher than fresh fish, moreover a large part of fish is consumed under subsistence production.

Thus under the present circumstances with the small domestic market the increase in artisanal-commercial production would soon lead to stagnation unless new markets or demand is created.

The marketing and distribution structure of the artisanal fisheries may be said as one where the fishermens attitude to production is determined by their access to means of production and the demand for subsistence and other needs. With progress in time and move towards cash economy, the position of fishermen is also increasingly changing in their demand for monetary goods, therefore more fishermen are engaging in sale of fish, although for limited purpose. On the other hand infrastructural and technical facilities are also limited in terms of providing cold storage facilities, space area, transportation, quality control and so on. The municipal authorities on the other hand lack effort and initiative to check the quality standards, preservation and handling procedures.

Therefore in what way one needs to analyse this type of fisheries which is self regulated by fishermen themselves. What mode of planning and development may be appropriate in terms of greater fishermens' community involvement and for the national fisheries development. It is therefore important to look at the problems of the present situation ; the type of blockages or constraints which exist in the production, distribution and the consumption sectors.

5) Income and Expenditure

In household fisheries, fishermen operate in order to provide a means of sustenance by supply of fish for their household's consumption, for reciprocity exchanges within the kinship members, friends and relatives ; and a means of earning cash to satisfy their other subsistence requirements. This objective relates to a production system which aims to provide a certain level of subsistence requirements of the household towards their 'self-sufficiency' rather than one for achieving profits or maximising income from sale of fish.

Labour for production are self-employed members of the household, who do not take account of their wages. Production is regulated by the requirements of the household. Furthermore, it includes most members of the household including young children and old members who engage in production, and who would otherwise be considered as economically inactive or inefficient labour under the modern economic system.

Cash income relates to the degree of market participation ie. to that part of distribution of catch which is sold in the commodity market. This degree of linkage between the household or the village and the market sector can be seen by the amount of cash income per consumption unit or the money income in the total income.

In the village household in Fiji as in most other South Pacific Islands, the non-monetary

component of income is still significant. This reflects the high degree of subsistence consumption and exchange of goods and services under traditional customs.

The total income consists of the subsistence food including fish consumed, cash received from sale of fish and goods and services received as gifts from another household or individual. The social relations also play an important role in determining the pattern of income and expenditure, like in the distribution of catch. For example fish received would carry with it an obligation on the part of the receiver to reciprocate at some time in future.

Artisanal-commercial fishermen, operating part-time or on an individual basis or those with other sources of income are those group of fishermen who have become more involved in the monetized sector ie. their receipts and payments indicate greater monetary components compared to the village fishermen who participate in the market for a limited demand for cash. This can be seen in table 12. The figures indicate that the settlement expenses relating to consumption show a high cash transaction compared to the village cash expenditure as the village consumption consists of a high degree of subsistence consumption.

Cash expenditure for 'non-village' fishermen relate to permission for access to fishing grounds, access to means of production, lack of land for subsistence cultivation and so on, which forces them to depend on the commodity market. However, both groups of fishermen's position within the the household is to provide for some subsistence level of income. Their overall socio-economic position or the quality of life does not show wide variations even though one depends on the market more than the other.

Household expenditure can be divided into two types, that for consumption and for obligatory purposes. Consumption expenditure relates to that part of income which is consumed by the household, and the obligatory expenditure is the unconsumed portion of

Table 12. Average Household Weekly Consumption Expenditure (\$) by Area and by group of Items

Group	Average Household Weekly Consumption Expenditure (\$)			
	Urban	Settlement	Village	All areas
Food, beverages and tobacco	35.49	43.13	30.28	37.06
Rents, fuel and power	12.47	7.19	1.88	8.34
Clothing and footwear	7.82	9.73	0.95	7.02
Household equipment and operations	7.80	8.99	3.99	7.40
Medical care and health services	1.78	2.27	0.26	1.62
Transport and communication	11.58	12.89	2.76	10.14
Recreation and entertainment	3.80	2.14	0.43	2.50
Education	1.57	1.30	1.36	1.44
Miscellaneous goods and services	6.61	5.42	2.32	5.27
All groups	88.92	93.06	44.23	80.79

Source: Bureau of Statistics. Household Income and Expenditure Survey: Household Expenditure (1977). 1982: p.21.

the income which is transferred to another household or individual without any direct exchange. Consumption expenditure includes the cash consumption on food and non-food items, which may be regarded as consumer necessities like food, clothing, medical expenses, and other consumer durables.

The Bureau of Statistics Survey on the Household Expenditure (1977) in the village area (location of most fishing village communities) shows that the average household weekly expenditure in the village consisted of \$19.16 per week which accounted for 43.32% of the total consumption. This is represented in Table 13 which give the average household weekly consumption expenditure in villages by group of items.

Other obligatory expenditure included gifts of food and other items which was given away to the kinship members, for example the offering of fish was a social gesture considered as somewhat a necessary condition for maintaining good relations among the members of the community. In a fishing household, the cash income from sale of fish was used to buy other basic necessities.

Non consumed cash normally provides for other expenditure relating to fishing operations such as repair and maintenance of gear and equipment, renewal of fishing licence, fuel expenses and so on. The type of production system is one where there is no need or attempt for accumulation, a basic necessity for the fishing enterprises. The fishermen's social attitude to production is to provide for a subsistence living or subsistence level of income. Furthermore, the household income and expenditure does not distinguish between the household consumption and the managerial operation. Fishing is not seen as a separate

Table 13. Average Household Weekly Consumption Expenditure
in Villages by Group of Items

Group	Average Weekly Consumption Expenditure							
	Cash		Subsistence		Gifts		Total	
	\$	Percent	\$	Percent	\$	Percent	\$	Percent
Food, Beverages and Tobacco	11.80	38.97	16.77	55.38	1.71	5.65	30.28	100.00
Rents, Fuel and Power	1.54	81.91	0.25	13.30	0.09	4.79	1.88	100.00
Clothing and Footwear	0.78	82.11	0.00	0.00	0.17	17.89	0.95	100.00
Household Equipment and Operations	1.81	45.36	2.02	50.63	0.16	4.01	3.99	100.00
Medical Care and Health Services	0.26	100.00	0.00	0.00	0.00	0.00	0.26	100.00
Transport and Communication	2.71	98.19	0.05	1.81	0.00	0.00	2.76	100.00
Recreation and Entertainment	0.42	97.67	0.00	0.00	0.01	2.33	0.43	100.00
Education	1.36	100.00	0.00	0.00	0.00	0.00	1.36	100.00
Miscellaneous Goods and Services	1.85	79.74	0.07	3.02	0.40	17.24	2.32	100.00
All Groups	22.53	50.94	19.16	43.32	2.54	5.74	44.23	100.00
Number of Households								
Fijian	546		Source: Bureau of Statistics. Household Income and Expenditure Survey: Household Expenditure (1977). 1982 : p. 70.					
Indian	2							
Other	0							
Total	548							

entity, in other words, there are no separate accounting as fishing activities form part of the social custom and a means of livelihood.

6) Financing and Credit

Besides tuna fishery, almost all other fisheries production is based on small-scale household production. The attitude of household fisheries to production is based on demand for a certain level of subsistence income to supplement towards their living. Unconsumed income is used to meet the expenses on repair and maintenance of boat and gear, buy fuel or other commodities in the market. Thus, there are no overall savings towards investment or improvement in production.

In this type of production system fishermen do not see the need to or are not in a position to get loans from financial institutions. They do not possess enough capital investments towards security of loans. On the other hand, their income is also very unstable and varies according to their immediate consumption requirements and other external factors like access to means of production, weather conditions, and so on.

The reciprocity and kinship obligations within the community still play an important role and act as a source of support and security in bad times. Through monetization, the institution of money has been accepted into this system of production, however the related institutions of banking or credit and loans and so on has just begun to take effect.

In most cases, informal borrowings occur within the kinship group, friends and relatives where the terms of payment are flexible and usually require no interest.

At the national level, fishermen's access to credit is facilitated by the Fisheries Division as an intermediary to the Fiji Development Bank. The Fisheries Division assess the loan applications from the fishermen and advises the Fiji Development Bank accordingly on the potential valid applications and requests.

In practice, most loans approved are for the trainees who undergo through the rural training programme. The loan from the Fiji Development Bank are used by these trainee fishermen to buy the fishing boat, gear and equipment from the Fisheries Division.

Attempts to establish fishing co-operatives for financing has not been successful for various reasons. Firstly, the traditional social systems which exercise strong controls on people's attitudes and beliefs, make them conform to stereotyped behaviour that does not easily give way to modern business and management principles, i.e. towards entrepreneurship. Secondly, resources are poorly managed because of lack of technical skills for administration and management as well as the basic fact of lack of capital.

DISCUSSION AND SUMMARY

Advancement in fisheries development like in any other development issue needs a clear understanding of the situation of fisheries, its environment, and activities in a historical perspective in order to provide an accurate comprehension of the social facts and their evolution. The question of development, under-development, the comprehension of its origins and the evaluation of its place in today's international relations can only be gained

from such a perspective. The core of this understanding in any economic activity or fishery is the socio-economic relations of production and reproduction. Thus, fisheries development or marine resource management in light of production, distribution and conservation are insufficient without an adequate knowledge of the socio-economic relations and conditions which influence and determine these production, distribution and conservation patterns.

The present study has tried to present the socio-economic structure of fisheries in the small island economies within its greater setting including the external and internal forces which affect the fishery. The socio-economic structure has been analysed within its evolutionary process, the conditions of the past, and those which are reflected in the present, and the new relations which are beginning to develop and which may be seen to present the need for future development.

The task has not been directed towards fisheries planning or defining development strategies but to merely present the situation of fisheries within the reality in order to provide a base for formulation of the development strategies.

The total fisheries system has been analysed firstly by looking at the general characteristics of island economies which may either directly or indirectly affect the situation of fisheries.

The small and scattered islands with lack of basic mineral and capitalistic industrial raw materials place emphasis on the need for primary production. Much of agricultural development has been a result of colonial plantation system with monocultural dominance in the agricultural economy.

Land management and laws by the colonists have been reflected by the interests in plantation development whereas sea and coastal resources were of least importance, as a result the sea areas remained uncodedified with largest part of fisheries production still under traditional subsistence. The Pacific Islanders before the European contacts were recognized as sea farers with several types of specialised canoes having migrated to small isolated islands from larger continents. Fishing and inter-island trading played an important socio-economic role within these pre-contact island societies. With the colonial influence towards plantation agricultural development, labour was drawn from fisheries and other coastal activities which also explain in part the gradual loss of traditional skills and fishing techniques. Effects of colonialism are further felt by the dominance of Australia and New Zealand influence on the industrial and economic activities. The light industrial manufacturing sector under Australia and New Zealand capital is seen to be directed away from the ocean and marine resource development. Furthermore, these countries protein consumption patterns show a high percentage of utilization of beef and mutton rather than sea foods which also indicate their limited interest in foreign fisheries.

The development progress of the islands is characterised by cross integration and stagnation rather than one with a progressive pace. Unlike in other developing countries such as S. E. Asia, the subsistence economies in the Pacific are still present whereas there is also considerable progress of modernized capitalistic industries. The socio-political institutions reflected by colonial influence have maintained the traditional ownership

patterns alongside the industrial progress. The economies are however still dominated by a few commercial agricultural crops. It is therefore important to understand the characteristics of fisheries within this complex economic structure.

In Fiji, fisheries is divided into three categories ; industrial, artisanal-commercial, and subsistence. The second and third sections of the study have looked at the activities and operations of the fisheries sector into these categories.

The coastal fisheries consists of the subsistence and the artisanal-commercial operations and is characterized by household production. The artisanal-commercial fisheries has developed with introduced simple techniques and gear, and is distinguished by low productivity, poor distribution and marketing system.

Customary fishing rights are observed on the reef and lagoon areas. Resource utilization within this area is based on rules of native custom which define sea as an extension of land boundary. The traditional land owning unit also has ownership of the use of coastal areas. Coastal fishing operations are organized by various types of groups including social and kinship groups, co-operatives, and organized labour groups. Their activities range from household subsistence to small but limited entrepreneurial development. The household as a production unit shows a non-capitalistic production structure where family members are engaged to provide for a subsistence level of income. Fishing activities including production and distribution are self-regulated by fishermen. The objective of such a production system is to provide towards 'self sufficiency' rather than to achieve profits or maximise income from sale of fish.

Cash income relates to the degree of participation in the commodity market. Non consumed cash is used to meet the expenses of repair and maintenance of boat and gear, fuel, renewal of fishing licence and to purchase other commodities in the market. Thus, there are no overall savings towards investment or improvement in production.

With regard to subsistence fisheries, women comprise a large percentage of subsistence labour and are responsible for providing food for their household needs. With the influence of cash economy, women are also increasingly engaging in sale of their products to provide for their families immediate cash needs. It is therefore important that subsistence fisheries as part of fisheries planning should not be ignored as the subsistence component of the sector is considerably large in its contribution towards resource exploitation. Furthermore, it is carried out on the same fishing grounds as the artisanal-commercial fisheries.

Analyses on rural fishing group operations illustrate two basic types of groups as production units : one organized under a communal or joint-working system and the other as individual owner/operator system. Thus, in traditional communal societies, the former group (that of joint operations) indicates the principles of a co-operative mode of development whereas the individual ownership indicates the capitalistic approach.

If the latter approach prevails, the fishing communities would ultimately be divided into two classes : that of owners of means of production and the labour class. Through the historical process, the individual owner/operator system ultimately progressed towards entrepreneurial development characterised by bigger boats, improved gear and technology and hiring of labour.

However, in the process of disintegration, the small domestic market of the island economy would not be able to hold the total coastal community, therefore some labour or part of the fishing community would have to seek employment elsewhere.

Group organization, administration and management should be carefully planned depending upon the desired mode of development whether to use traditional communal structures as a base to provide for a co-operative development or to have the breakdown of traditional structure into fishing labour and owners of means of production.

Planning in either direction, particularly of a modern fishery must take into account the alternative options for the coastal community keeping in mind the high unemployment rates and limited opportunities in the small industrial and urban sectors.

The marketing structure and practices of the small scale fishery have been shaped by the artisanal-commercial operations which are relatively low in volume, with low efficiency operations, and with no specialized product or species.

Consumers generally possess limited knowledge on fish quality as fish prices are related to species rather than quality. The social relations of the production unit are important to analyse their attitude to their involvement in the market. In the household fishery, the fisherman's decision on distribution is affected by his demand for cash to meet his subsistence needs and his social obligations towards his kinship ties and friends.

The supply of fish does not directly respond to the demand in the market as indicated by wide fluctuations in price. Fishermen try to sell as quickly as possible to avoid spoilage, therefore they are forced to sell at reduced prices. Price is not determined by taking into account the production cost or the market forces but on some demand for cash to meet certain subsistence needs.

With progress of time and move towards cash economy, the position of fishermen is also increasingly changing in their demand for monetary goods, therefore more fishermen are engaging in sale of fish, although for a limited purpose. On the other hand, infrastructural and technical facilities are also limited in terms of providing cold storage facilities, space area, transportation, quality control, and so on. The increase in supply of fish entering through and collection services would greatly facilitate fishermen's activities and the supply of fish to urban centres. Improvement in marketing and storage facilities are also essential in order to have larger portion of fisheries commodities entering through the proper marketing channels and price formation. Development in marketing system also includes improvement in fish quality which could be facilitated by supply of ice to the rural fishermen through fish collection vessels as majority of the fishermen's activities are limited due to lack of ice and storage facilities.

Consumer Education - Expansion of market through consumer education on nutrition and utilization of fresh fish protein would provide an alternative means to increase demand in domestic market and help towards achieving higher nutritional levels for the local population. Already, it is seen that the consumption of fish protein is high but a larger part of it consists of poor quality imported canned mackerel.

Government Support Systems - Government support systems are essential towards promotion of domestic entrepreneurship into the fisheries sector because of lack of basic

capital. Government financial assistance through aid and subsidies for purchase of gear and equipment and low interest rate on long and short term loans should be made available to individual as well as group fishermen.

Technical assistance and extension programmes are also essential to all types of fishermen who lack basic knowledge on gear repair and maintenance, new fishing techniques, fish handling and business administration. Due to competitive situation of marine products in the international market, government assistance is also essential in seeking foreign market outlets and in instituting preferential trade arrangements as the domestic market is too small.

Physical Infrastructure Facilities - Physical infrastructure including port and landing facilities, ice making and storage facilities, boat building, net making, and other ancillary facilities are also prerequisites for fisheries development. Construction of small jetties at major fishing villages along the coast would facilitate fish landing by the surrounding villages and also help fishermen to use bigger boats.

Development of adequate transportation system and proper infrastructural facilities for marketing and distribution would also help towards rural development by providing a greater rural-urban linkage.

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