Mem. Fac. Fish., Kagoshima Univ.
Vol. 36, No. 1, pp. 97～135 (1987)

Industrial Progress of Pelagic Fisheries in the South Pacific
—— A Case Study of Fiji ——

Shigero IWAKIRI[*1] and Vina RAM[*2]

Abstract

According to the ancient history of the Polynesians, Melanesians and Micronesians, the islanders were referred to as "ocean farers" who possed good navigational and fishing skills. However, the colonial powers were not interested in exploitation of ocean resources because of the lack of market then for fisheries products. Much of the interest lied in agricultural plantation development to provide raw materials for the metropolitan markets. As a consequence, within the primary industries of the islands it is seen that fisheries is still at a considerable stage of subsistence compared to other agricultural activities. Thus, it is important that while the traditional structures are still present within these island societies, the possibilities for reconstructing or reviving the traditional skills of ocean people be considered towards the coastal and open sea fisheries development.

It is also seen that within the last decade two international political events have further sought to change the perspects of the fishing industry which was initially limited to household production. Firstly, the political independence has given the islands new incentives and commitment to develop their own few resources and secondly, the declaration of the 200 mile extended jurisdiction under the International Marine Policy has initiated the islands of the possibilities of exploiting and managing the highly migratory tuna resources which form the main stock of the deep ocean within these island countries jurisdiction. The effects of these are already evidenced by the development of the industrial pelagic fisheries under the strong national and regional support.

Presently each of the Pacific Islands have National Fisheries Development Plans, where the main objectives relate to increase foreign exchange, creating employment and providing protein food.

In the case of Fiji, the export-orientated industrial pelagic fisheries has been developed independently under national capital for production, and foreign joint-venture for processing and marketing. This development shows a modernised course of industrial progress and mode of accumulation in contrast with the theoratical process. Furthermore, this development perspect has been a result and under the guidance of the emerging regional marine and fisheries policy under the International Law of the Sea regime.

In this study on industrial fisheries, the methodology adopted based on the economic

*1 Laboratory of International Marine Policy, Faculty of Fisheries, Kagoshima University, 50-20 Shimoarata 4, Kagoshima, 890 Japan
*2 Institute of Marine Resources, The University of the South Pacific, Suva, Fiji

analysis of capital accumulation, labour force and composition, national intervention, international relations and so on.

1) *Regional Policies and Target of Pelagic Fisheries*

(i) Regional Fisheries Policy

Fishing in the South Pacific has largely been concentrated within the coastal areas, partly because of fishing for small quantities for subsistence, but more importantly because of lack of technology, skills, and appropriate gear to exploit beyond the outer reef areas. Use of traditional technology of the coastal waters or trawling has been restricted because of the difficult physical characteristics of the ocean environment which (KEARNEY ; 1979 : p. 1) describes as ···

"··· Land masses of Tropical Pacific are in general comparatively isolated islands or archipelagic which are surrounded by clear extremely deep ocean. In most cases the transition in depth from shallow, inshore or lagoon waters is precipitous, dropping to depths which often exceeds 1,000 fathoms in distances from shore of a few miles or even less. Throughout the region there are very few areas of true continental shelf, and in those areas where a shelf does exist it does not generally extend beyond the 12 miles currently accepted as territorial sea."

As a result of lack of technical capabilities of the islands for access to the deep ocean, much of their ocean or pelagic fisheries which consists of largely highly migratory species has been exploited by foreign fishing fleets, from Japan, Korea, Taiwan and USA while the islands generally received license fees and tax revenue from these fishing fleets.

Japanese longlining fisheries developed in the 1950s which was later joined by Korea in 1958 and Taiwan in the mid 1960s. These foreign vessels operated within the South West Pacific operating through 4 major bases in American Samoa, New Hebrides (Vanuatu), French Polynesia and Fiji.

With political independence and commitment towards self-reliance, the islands sort to develop commercial tuna industry to increase exports by way of getting a greater share of benefits and involvement with the foreign operations.

Also around the same period (1960s-1970s) the tuna prices in American and Japanese markets increased and indicated a future potential towards industrial fisheries development. This flourishing business of the foreign operations on the other side aroused fear and concern for the island nations that they were not receiving fair benefits by malpractices and that inadequate information was available from these uncontrolled operations.

A further and most important turning point which has infact taken effect for development of industrial fisheries has been the new order of the oceans which emerged in the late 1970s by the declaration of the 200 mile Exclusive Economic Zone (EEZ) by the coastal states. This new order on the extension of the sea boundary has necessitated the islands to develop and manage the resources within their extended jurisdictions according to the International Law of the Sea.

(KEARNEY ; 1979 : p. 2) ··· states the direct impact of this new EEZ Order on the National Fisheries Policies of the islands as follows :

"(1) The rights of coastal states to increase their control over the harvesting of the living resources within their respective exclusive economic zone.

(2) The obligation of coastal states to promote optimum resource utilization from these areas.

(3) The obligations of Nationals fishing in an exclusive economic zone other than their own to comply with the conservation measures and with the other terms and conditions established in the regulations of the coastal states such as licensing fishermen, fishing vessels, disclosing information on catch effort and other statistics, fixing prices and quotas, and so on.

(4) The need to conserve the fishery resource base.

The above terms indicate of the increased rights and obligations of the coastal states to protect the resources for the benefit of mankind and to actively promote attainment of maximum sustainable yields".

Since the major economic species of tuna and bill fishes are of highly migratory nature whose population travel freely from the waters of one coastal state to another, a regional and international co-operation is needed for the management of these resources. Several biological reasons further enforce the need for a regional and international co-operation for management, conservation and rational use, such as those relating to the variable distribution of resources during their life cycle at different times within a common ocean and that disturbance at one point would affect the whole population cycle.

The need for regional and international co-operation of the highly migratory species was endorsed by Article 64, Part V of the Informal Composite Negotiating Text RSNT (1979 (later adopted in the Law of the Sea Convention, 1982) which states ·····

"The Coastal States and other States whose Nationals fish in the region for the highly migratory species ··· shall co-operate directly or through appropriate international organisations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the EEZ. In regions for which no appropriate international organisation exists, the coastal state and other states whose nationals harvest these species in the region shall co-operate to establish such an organisation and participate in its work."

In accordance with this article of the Law of the Sea, a regional fisheries agency was established by the South Pacific Forum in 1979 to co-ordinate regional fishery concerns. Co-operation for fisheries management at the regional level was aroused by the island states towards maintenance of the highly migratory resources of the region, to maximise socio-economic benefits for the island people, to present a common front for negotiation with distant water fishing nations and in other international issues and to co-operate for research and statistics and surveillance. Part V of the Law of the Sea Convention explicitly recognises the coastal nations sovereign rights over all living marine resources, including the highly migratory species, within their 200 mile exclusive economic zones.

"This provision rejects the arguments made by the United States and other nations that

individual coastal nations' exclusive jurisdiction over highly migratory species conflicts with effective management control over such species which requires greater regional and international co-operation." (DYKE & HEFTEL ; 1981 : p. 4).

According to the prevailing "Fishery Conservation & Management Act" of 1976 (FCMA) ; USA does not recognise exclusive jurisdiction by coastal nations over migratory fish.

At the 1978 and 1979 South Pacific Forum, great debate led the islands of the region to exclude distant water fishing nations to full members of the Agency. Article II of the Forum, Convention (1979) states that the South Pacific Forum Fisheries Agency (FFA) membership consists of members of the SPF and other states or territories in the region on the recommendation of the Committee and with the approval of the Forum. (FFA Convention 1979 ; p. 2). This provision therefore excludes distant water fishing nations, but allows nations with island dependencies to participate indirectly through their dipendencies.

However, despite many unsolved political issues on tuna management, the South Pacific Forum Fisheries Agency (FFA) stands as an important step towards regional co-operation and creation of regional fisheries agency. The objective of the FFA is to promote the conservation and rational utilization of the fish stocks of the region. Functions basically include collecting, interchanging and disseminating information on the fisheries issues, management procedures of the region, price, shipping, processing and marketing surveys, providing technical assistance on fisheries and development policies, and negotiating at the regional and international level.

The Agency has acted as a regional information center to supply information on catches, marketing, legal and economic analysis of fishing access, joint-venture arrangement, statistical information, and so on.

The Agency also aims to supply and assist at the national level upon the request of individual countries. In 1980/81, the Fiji project included assisting the Government of Fiji in its involvement in tuna price negotiation between PAFCO and IKA Corporation. (FFA : Director's Report 1980/81 : p. 4).

Although the FFA's initial instituting had been based on international and regional politics, hence its effects and limitations on the present operations ; it is nevertheless seen by regional islands as the mechanism for development and management of the fisheries resources at the national, regional and international level ; the activities which otherwise cannot be performed by each island country independently.

(ii) Fiji's Industrial Fisheries Policy

Fiji's industrial fisheries is largely export based in order to provide foreign exchange and employment. According to the Development Plan Eight (1981-1985), industrial fisheries was seen to represent the major economic potential of the sector. Various programmes were put forward to increase production and processing with and emphasis on foreign involvement in areas of manufacturing, technical assistance and aid financing.

Two major projects were involved, first the tuna development project which aimed to

facilitate IKA Corporation activities by vessel construction and training and other means to increase fishing effort. The second project related to tuna processing and marketing which involved finding access to foreign markets and seeking preferential marketing terms.

During the DP9 period, the low world-tuna prices made pole and line fishery uneconomical, therefore reducing the fleet to 3 in 1985. With the inadequate supply of fish the cannery has been operating at nearly half its capacity.

The current Development Plan (DP9) [1986-1990] which has just taken effect recognises the industrial fisheries sub-sector as one under a state of flux in light of the continued low world tuna price and further the constraints in the operation and management at the production and processing level. It states the following comment with regard to industrial fisheries :

"The industrial pelagic fisheries will remain the backbone of the fisheries sector despite unwelcome decline in production and foreign exchange earnings at the beginning of the plan period. Efforts should be directed however towards improved management measures for both IKA and the cannery and rooms made available to accommodate private participation through joint ventures or managemet contracts if it brings about the necessary expertise and competence. Regional awareness of the need to support the development of national fishing and processing ventures will impose further challenges". (Central Plannig Office ; 1985).

The objective of the current development plan therefore includes the following :

a) To consolidate and expand skipjack tuna fisheries by assisting in the development of IKA Corporation.

b) To further encourage processing of tuna products for exports and diversification.

c) To encourage alternative fishing methods such as purse seining, Long-lining or a combination of such methods applicable in Fiji waters.

d) To investigate the possible involvement of neighbouring island countries in the local industry.

(Central Planning Office ; 1985).

The development strategies to achieve the above objectives include improving effeciency of local skippers, crew, engineering, shore management staff and labour through special training ; infrastructural development such as port facilities and freezer storage plants ; use of purse-seine fishing to increase the efficiency of the capital plant ; and increase private participation of local and foreign in terms of joint-ventures, bilateral or licensing fishing agreements for tuna fishery within the EEZ, and use of Fish Aggregation Devices (FADs) to facilitate fishing activities. The industrial fisheries is seen to be one aimed at increasing foreign earnings by way of reliance on foreign transfer of capital and technology in production and processing. Furthermore, direct government control and assistance has been essential in this industrial progress. Regional co-operation is also seen to be an important factor in the development of the small islands industrial fisheries.

2). *National Capitalistic Organisation and Functions of State Enterprise* (IKA Corporation)

(i) Historical Progress of IKA Corporation

In 1968, at the South Pacific Commission-sponsored fisheries technical meeting in Noumea, the island Governments and United Nations Development Programme/Food and Agriculture Organisation (UNDP/FAO) expressed interest and agreed on the development of regional fisheries. By the early 1970s skipjack and tuna fisheries had developed in Papua New Guinea and Solomon Islands under the Japanese capital. The UNDP/FAO set up a mission for investigation of the feasibility of exploitation of the possible island states waters. The mission recommended for a local tuna fishery project for Fiji which started in 1971 and included activities such as bait fish survey, ecploratory fishing, training, fish handling, marketing and processing. The project concluded work in 1973 which indicated existence of skipjack tuna and baitfish resources in commercial quantities and recommended the development of a skipjack tuna fishery based on 8 to 10 medium size vessels landing up to 5,000 tonnes of fish by 1979.

Following the servey result, in 1974 government entered into a joint-venture with PAFCO for canning of tuna, and consequently also decided that capture of all fish within the territorial waters of Fiji should be reserved for Fiji nationals.

"In 1975 the Land Development Ordinance Cap. 124 was amended to allow the formation of corporations dealing with fishing matters, thus giving way to the formation of wholly government owned fishing corporation to be managed by Fisheries Division" (Anon ; 1975 : p. 5).

Thus IKA Corporation was formed by the government as a step towards establishing an individual fishery focusing mainly on the exploitation of skipjack tuna resources to supply to the cannery for processing.

In 1976 IKA chartered its first vessel and also decided to hire foreign fishing vessels to fish in Fiji waters to meet government's obligation to PAFCO. By 1982 it had 5 vessels of its own and chartered 7. Table 2 gives the fleet size of IKA vessels and those chartered by IKA from 1976 to 1984. In 1982 IKA had a major turning point in deciding to reduce its pole & line fleet. Table 1 below gives details on the IKA fleet in 1982.

Table 1. IKA Corporation Fleet in 1982

IKA No. 1	—	(details not available)
IKA No. 2	—	9 years : second hand from Japanese
IKA No. 3	—	7 years : second hand from Japanese
IKA No. 5	—	2 years : new from Japan (aid)
IKA No. 7	—	New : built in Fiji in 1982
Tui–Ni–Wasaliwa	—	8 years : built in Fiji
(IKA No. 8)	—	(under construction)

Source : Central Planning Office. 1983 : p. 32.

However, with the decline in catch and the international tuna recession, the Corporation decided to reduce its pole and line fleet from 1983 because of the high cost of operation, as pole and line has a low catch efficiency and high labour cost and consequently, increase medium-size purse seiners in order to meet PAFCO's requirements.

Table 2. Fleet size and Composition Fiji Tuna Fleet

Vessel Type	Pole & Line Vessels			Purse Seine		Total Vessels
				Small	Medium & Large	
Ownership	IKA Corporation	Vessels Chartered by IKA	Private	Foreign NZ	Foreign Chartered by IKA	
YEAR						
1976	1	1	—	—	—	2
1977	2	4	—	—	—	6
1978	2	6	—	—	—	8
1979	4	3	1	—	—	8
1980	5	5	1	1	—	12
1981	5	6	1	2	—	14
1982	6	7	2	2	—	17
1983	6	7	2	1	—	16
1984	4	3	2	1	3	13

Source : Central Planning Office. 1983 : p. 32

The Government requested South Pacific Forum Fisheries Agency (FFA) to carry out a feasibility study on purse seining for IKA Corporation. IKA Corporation has already been chartering purse seine vessels from New Zealand and is planning to increase its purse seine fleet by further chartering, possibly from USA and constructing its own medium sized purse seine vessels.

Since its establishment, IKA Corporation has faced several managemental and operational difficulties in terms of financial, technical, production fluctuations, lack of skilled labour, and so on. The administrative organisation structure of the Corporation was re-organised in 1983 defining exact responsibilities at each level of management organisation. Figure 1 gives an outline of the new organisation chart made by the present General Manager of IKA Corporation. The government has continuously assisted IKA with grant and aid to facilitate its operations. Table 3 gives an indication of grant and aid to IKA Corporations for purchasing and constructing fishing vessels.

IKA Corporation has also relied on foreign technology and expertise by way of relying on Japanese fishing masters and engineers for the necessary operational and training assistance. It has further sort foreign assistance mainly from Taiwanese, Korean and Japanese vessels in order to meet towards its catch requirements for PAFCO.

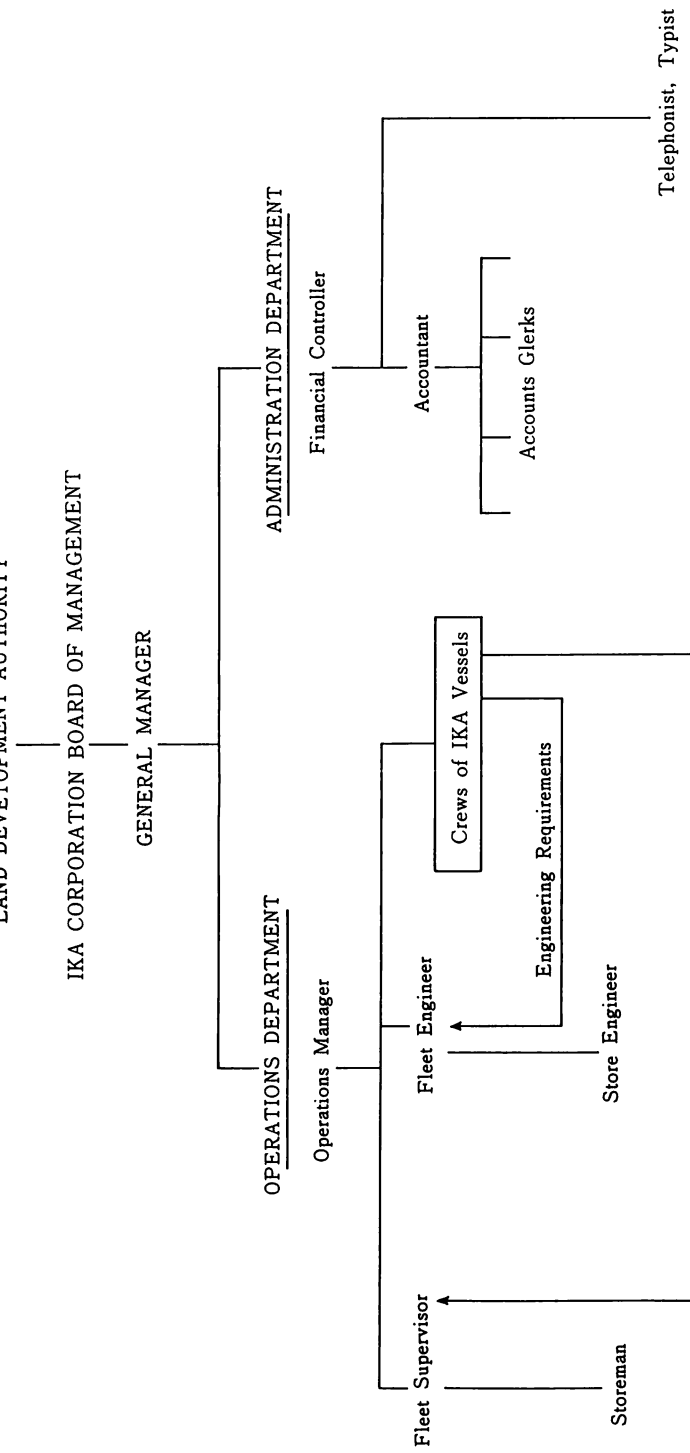


Fig. 1. Organisational Chart for IKA Corporation (October 1983)

Source: Central Planning Office. 1983: p. 12.

Table 3. Government Grants and Aid to IKA Corporation

		$
31.12.1976	Cash	55,000
31.12.1977	Cash	60,000
30. 6.1978	Cash	100,000
30. 6.1979	Cash	150,000
30. 6.1980	Cash (IKA No. 3)	250,000
30. 6.1980	Tui-ni-Wasaliwa	70,000
30. 6.1980	NZ Aid (IKA No. 3)	176,780
30. 6.1980	Cash	150,000
30. 6.1981	Japanese Aid (IKA No. 5)	834,754
30. 6.1982	Fiji Government (IKA No. 7)	300,000
30. 9.1983	Working capital cash grant	100,000
30.12.1983	Capital grant for construction of IKA vessels	700,000
Total		2,946,534

Source : Central Planning Office. 1983 : p. 30.

(ii) Purpose and Target of IKA Corporation

The main purpose of IKA relates to the establishment of domestic entreprenurship such that the government policy states that fishing within Fiji waters would be confined to local people. Assistance from abroad for specialised experts, gear and equipment, and technology has been sought to help to plan and implement the development programs. IKA has also been contracting with foreign vessels to help towards meeting its commitment to PAFCO. Table 4 gives a representation of IKA's commitment to PAFCO.

Table 4. IKA's Commitment to Supply Skipjack Tuna to PAFCO

Year	Scheduled Quantity (t)	Quantity Supplied (t)	% Performance
1975	400	80	20
1976	1,150	681	49
1977	2,300	1,800	78
1978	3,100	2,525	81
1979	4,150	3,496	84
1980		2,547	
1981		6,530	
1982		5,671	
1983		4,535	

Source : Central Planning Office 1984.

Upon the establishment of IKA, Development Plan Seven (DP7) : [1976-80] stated the following functions of IKA Corporation.

a) To contract with foreign vessels catching in Fiji Waters in the initial stages.

b) To engage in commercial skipjack tuna fishing operations in order to supply fish for the domestic market and for the processing and marketing operations of the joint-venture with the PAFCO.

c) To promote the development of locally owned fisheries enterprise and experience in the types of vessels and fishing methods best suited to local conditions.

Table 5 indicates the initial target of IKA set for the DP7 period.

Table 5. Skipjack Vessels, Costs and Personnel Required, 1975–1980

	1975	1976	1977	1978	1979	1980
Number of vessels	1	1	2	5	8	9
Costs ($1000)	–	75	255	615	605	315
Personnel–fishermen	15	35	35	55	70	85
officers	3	3	7	20	30	35
others	–	2	4	10	12	12

Source : Central Planning Office.
Seventh Development Plan 1976–1980. p. 95.

The initial plan stated in Development Plan Seven for IKA Corporation development project indicated that the number of vessels were to increase from one in 1975 to nine by 1980. In the actual operations in 1980 IKA had achieved five pole and line of its own and five chartered pole and line and one private pole and line and one purse seine vessel.

Top management expertise including fleet engineers have been recruited from Japan to develop the fishery and to maintain effective operation of vessels. IKA also aimed to benefit from this employment of foreign experts by way of providing training on board for the local labour.

Government's plan for IKA Corporation during the Development Plan Eight (1981-1985) period stated that Government was still to continue to rely on foreign management skills to ensure for the continuity of operations of IKA. Taking into consideration IKA's commitment to supply to the cannery the projected plan had aimed to increase its fleet by four vessels under aid and expand employment to over 250 and aimed for a projected catch of skipjack of 7,000 mt. by 1985. The Government consequently was to provide support to IKA through finance and technical assistance. During the DP8 period government was to further extend operation into fishing zones of adjacent states to extend the effective fishing season and facilitate the use of capital equipment.

In the actual implementation of the plan, government had given grant to IKA for construction of IKA 7 and 8. However, the low world prices for tuna during the period made the pole and line fishery uneconomical. At the end of the Plan period IKA requested the Government for additional funds for the construction of a purse seine vessel.

The current Development Plan DP9 (1986-1990) states that despite the decline in production, the industrial pelagic fisheries would still remain the backbone of the fisheries sector. The Government aims to direct efforts. for improvement of the IKA management and to utilize the possible benefit from regional corporation.

The current objectives state that alternative fishing methods such as purse seining would be encouraged and the possibilities of involving the neighbouring island countries into the industrial sector would be sought. Other objectives involves training of local labour, increasing private and foreign participation in fishing and use of Fish Aggregation Devices (FAD) to facilitate fishing operations.

The operational scope of IKA defined in the constitution are broad ranging from … "fish culture and harvesting of all forms of aquatic life to purchasing of marketable produce from other fishermen and to store, process, transport and market such produce." (Central Planning Office ; 1983 : p. 9).

Main emphasis is placed on involvement of local nationals through training and technical assistance by foreign expertise and to operate IKA as an independent commercial enterprise.

Since the inception of IKA, it is seen that major aim and target of IKA has been to fulfill its catch commitments to PAFCO and to provide technical training to local labour towards development of domestic entreprenurship.

(iii) Present Activities

IKA Corporation is organised into 2 departments, the administration and management, and the operations department. The latter includes shore management and business accounting whereas the operational activities involve catching of fish by pole and line IKA vessels and chartered foreign and private pole and line and purse seiners.

The size of the fleet is given in Table 2 on Page 7. Pole and Line vessels are between 60t - 100t where as purse seine vessels are 220-350t. IKA plans to build new purse seine vessels of 220 gross tonnage.

In 1985 only IKA 5, 7, and 8 were in operation. Two older pole and line vessels have been disposed and the number of chartered vessels reduced because of the difficulty of continuing pole and line fishery under the low world tuna prices. Total catch by IKA vessels is given for the period 1979-1983 in Table 6.

Table 6 . Catch Statistics of IKA Vessels (1979–1983) by Tonnes

	1979	1980	1981	1982	1983
IKA No. 2	195.0	164.6	252	212	49
IKA No. 3	—	156	340	365	47
Tui–Ni–Wasaliwa	259	76	227.6	154.2	117.5
IKA No. 5	—	—	858	543	67
(average for season)					
Average of Year (six months)	227	132	419	318	70

Source : Central Planning Office ; 1983 : p. 33.

Figure 2 further indicates the total catch by vessel group, chartered and owned by IKA. It is seen that annual catches of Japanese chartered vessels are far higher than IKA vessels.

"Average catch on IKA vessels over the past years have been approximately 260 tonnes per season whereas the chartered Japanese Hokuku vessels have recorded average catches of 530 tonnes per vessels per month". (Central Planning Office ; 1983 : p. 33).

Figure 3 gives details on skipjack and yellowfin landings by IKA vessels and the corresponding price per tonne.

Fig. 2. Total Catch by Vessel Groups (1979-1982)

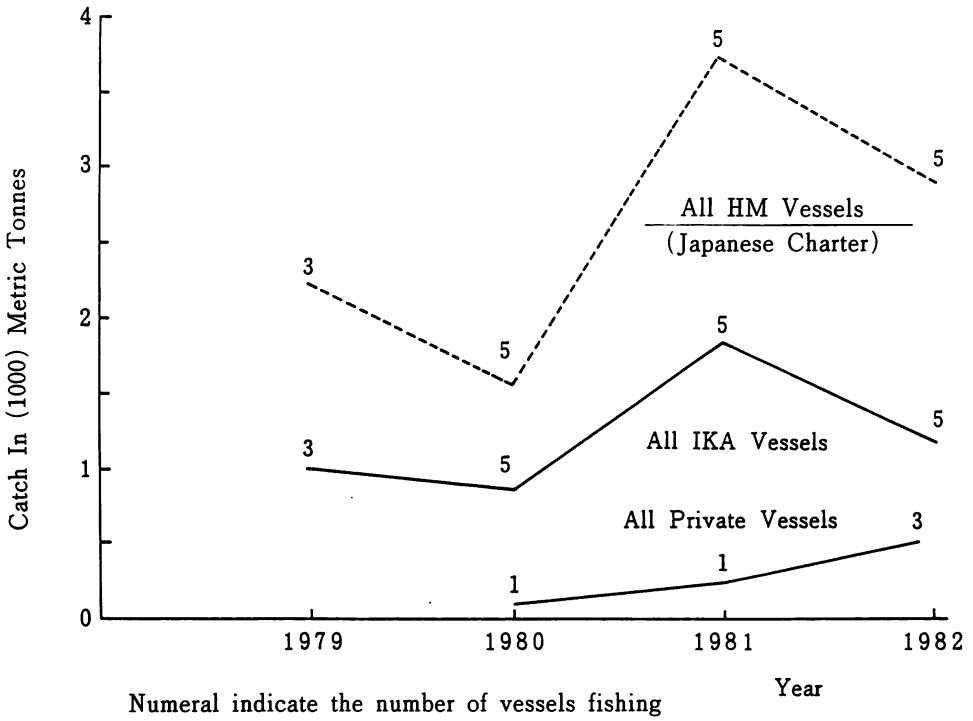
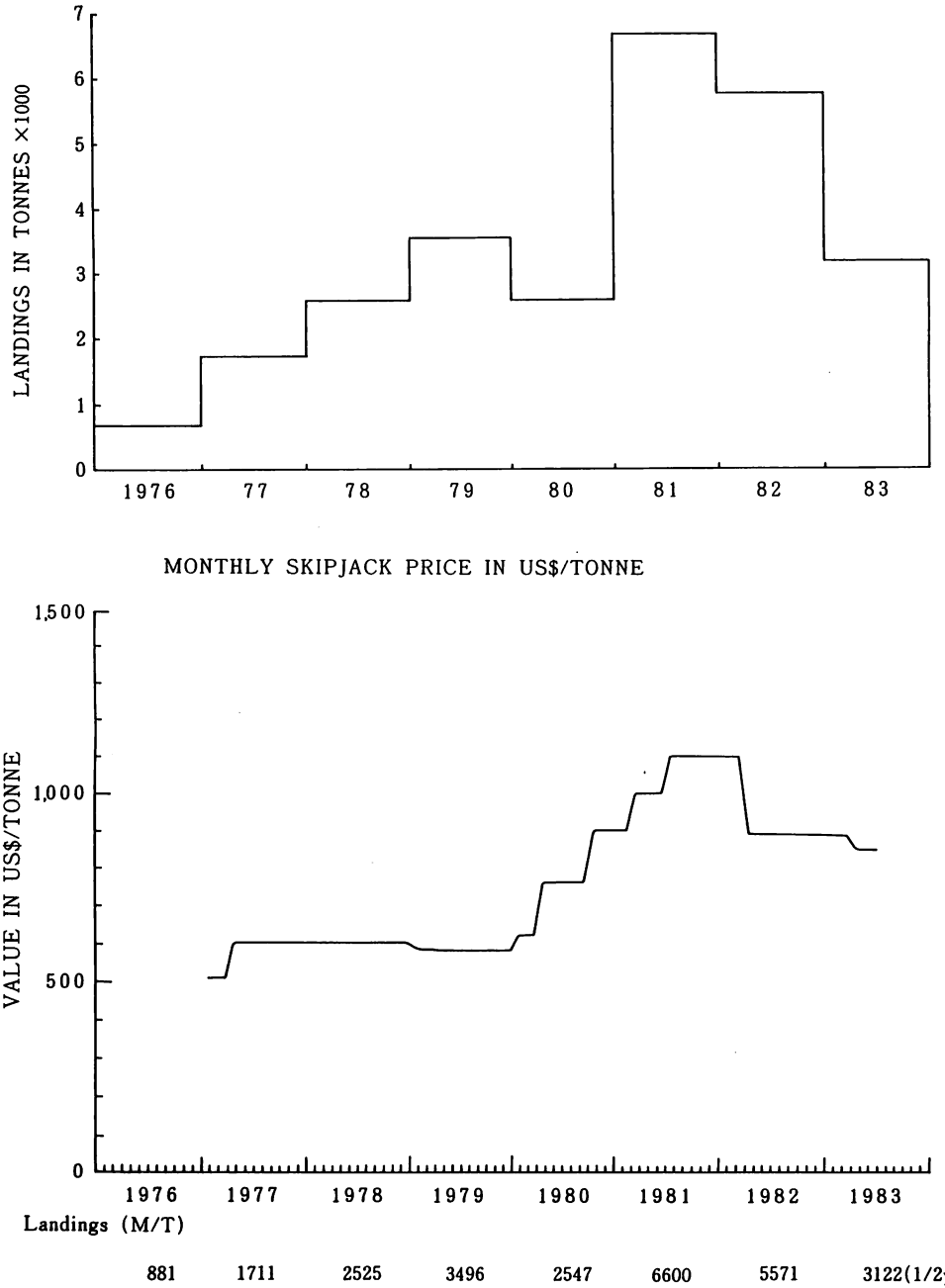


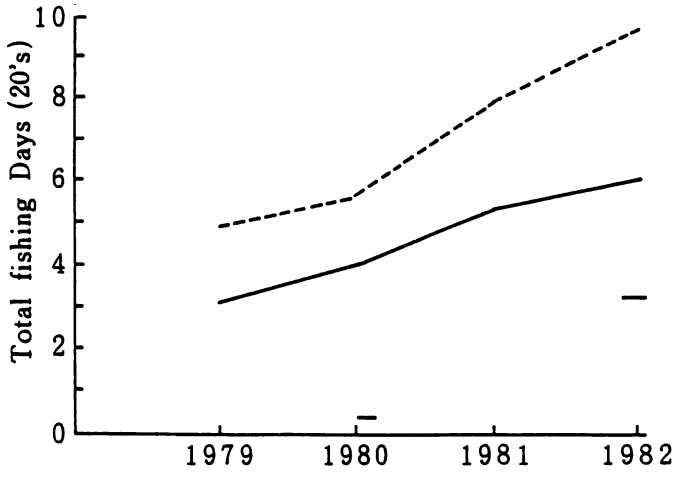
Figure. 4. indicates the total fishing days by the vessel group where as Figure. 5. gives the catch per day by vessel group. Figure. 6. gives further details on average tuna catch per vessel per month from 1979-1982. The graph clearly illustrates the seasonal fluctuations in catches with the peak of cycle in February and March and a low season from July to October. It is also seen that average catch per vessel of the HM vessels is higher than IKA vessels.

Fig. 3. IKA Corporation Skipjack & Yellowfin Landings 1976-1983



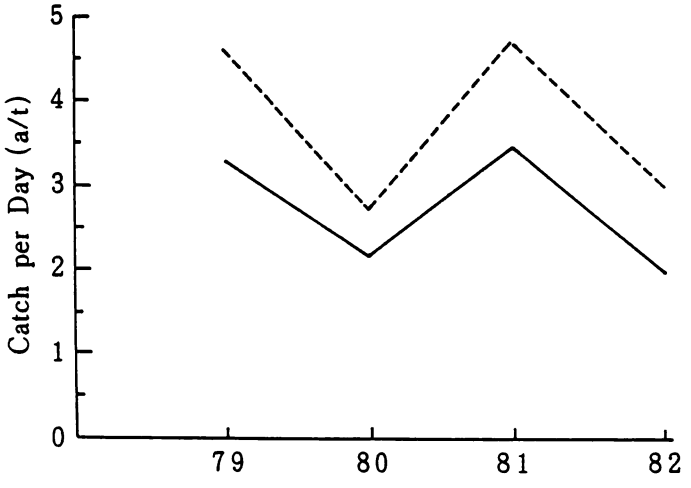
Source : Central Planning Office. 1983 : p. 41.

Fig. 4. Total Fishing Days by Vessel Groups



Source: Central Planning Office. 1983: p. 40.

Fig. 5. Catch per Day by Vessel Groups



Source: Central Planning Office. 1983: p. 40.

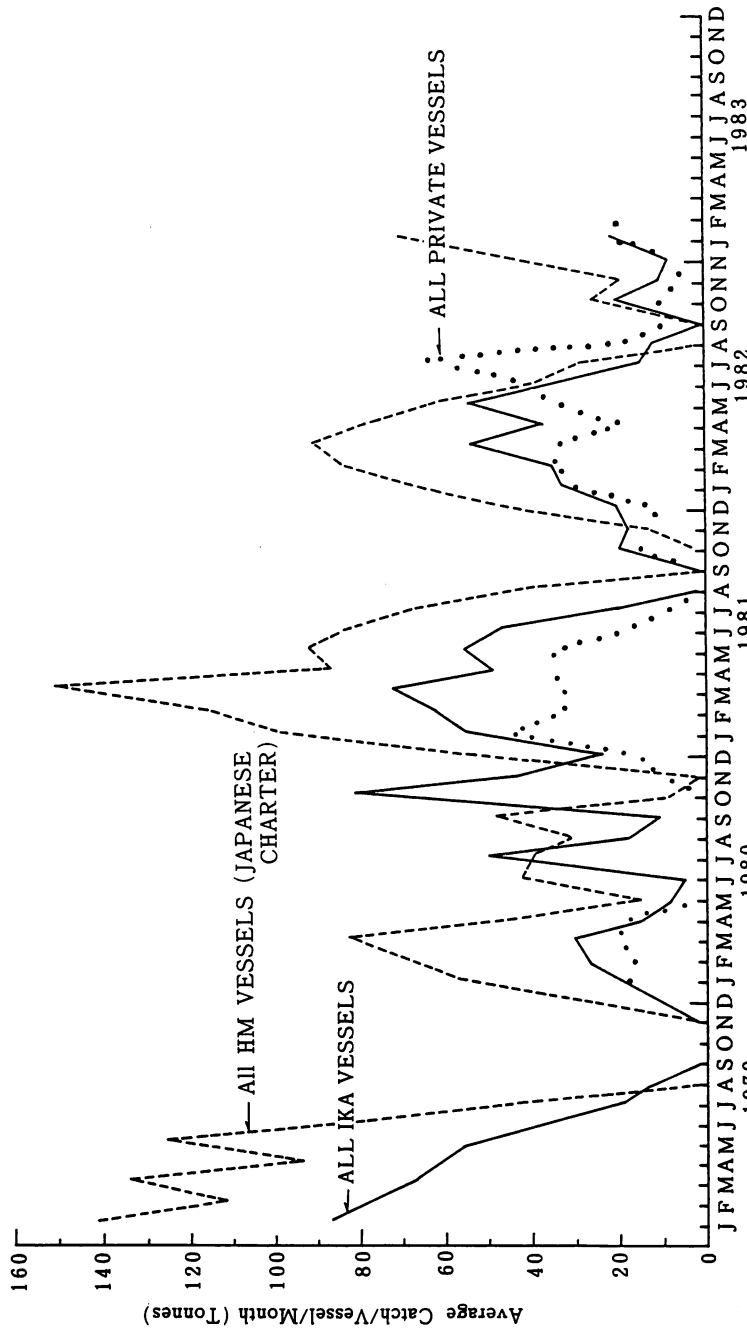


Fig. 6. Average Tuna Catch Per Vessel Per Month, 1979-1983

Source : Central Planning Office. 1983 : p. 34.

Figure. 7. illustrates the average number of days spent fishing per vessel per month for the year 1979 to 1982. It shows that on average the HM vessels spent more days per month engaged in fishing than IKA vessels.

The above comparative data on the performance of the chartered and IKA vessels illustrate that IKA vessels had lower performance. The following factors were identified as main reasons for the difference in performance.

"(a) The difference in wage system. The wages of the Japanese crew on the HM vessels are directly related to the value of the catches whereas IKA crew have been paid fixed regular wages unrelated to their catches. This has not provided crew with a direct financial incentive to increase catches.

(b) IKA vessels have spent an average about five less days per month fishing than HM vessels.

(c) A smaller proportion of the crew of IKA vessels actively engage in fishing than that of HM vessels and private vessels.

(d) The fish catch per man day is lower of IKA crew than HM crew.

(e) The above facts point to a lower level of motivation and discipline on IKA vessels than HM and private vessels."

(Central Planning Office ; 1983 : p. 37.

IKA Corporation relies heavily on foreign experts for technical assistance, particularly Japanese fishing masters and engineers. Local people are trained on board the fishing vessels. Training programes have been difficult to implement under the present low prices of tuna and the seasonal activities of crew.

On the operation side, the number of staff on IKA pole and line vessels varies between 22(60t) to 28(100t).

(iv) Cost and Revenue Analysis

Beside operational difficulties, IKA also faces several administrative and management problems.

The balance sheet as at 30th June 1983 showed the depreciation value of assets as $1,561,814 and accumulated loss as $2,260,080. Table. 7. gives details on revenue,

Table 7. Revenue, Expenditure and Accumulated Losses

The sales and net profit/(loss) and accumulated profit/(loss) situation for the past five years are as follows :

	Sales	Profit/(loss)	Accumulated Losses
1978	1,668,792	15,955	140,263
1979/80	1,096,628	(539,707)	(399,445)
1980/81	4,052,368	(70,104)	(469,549)
1981/82	3,836,986	(649,684)	(1,119,234)
1982/83	2,234,134	(1,134,983)	(2,260,080)

As at 30 June 1983, the Corporation is therefore in the untenable position of having written down capital assets of $1,561,814 yet an accumulated loss of $2,260,080.

Source : Central Planning Office ; 1983 : p. 27.

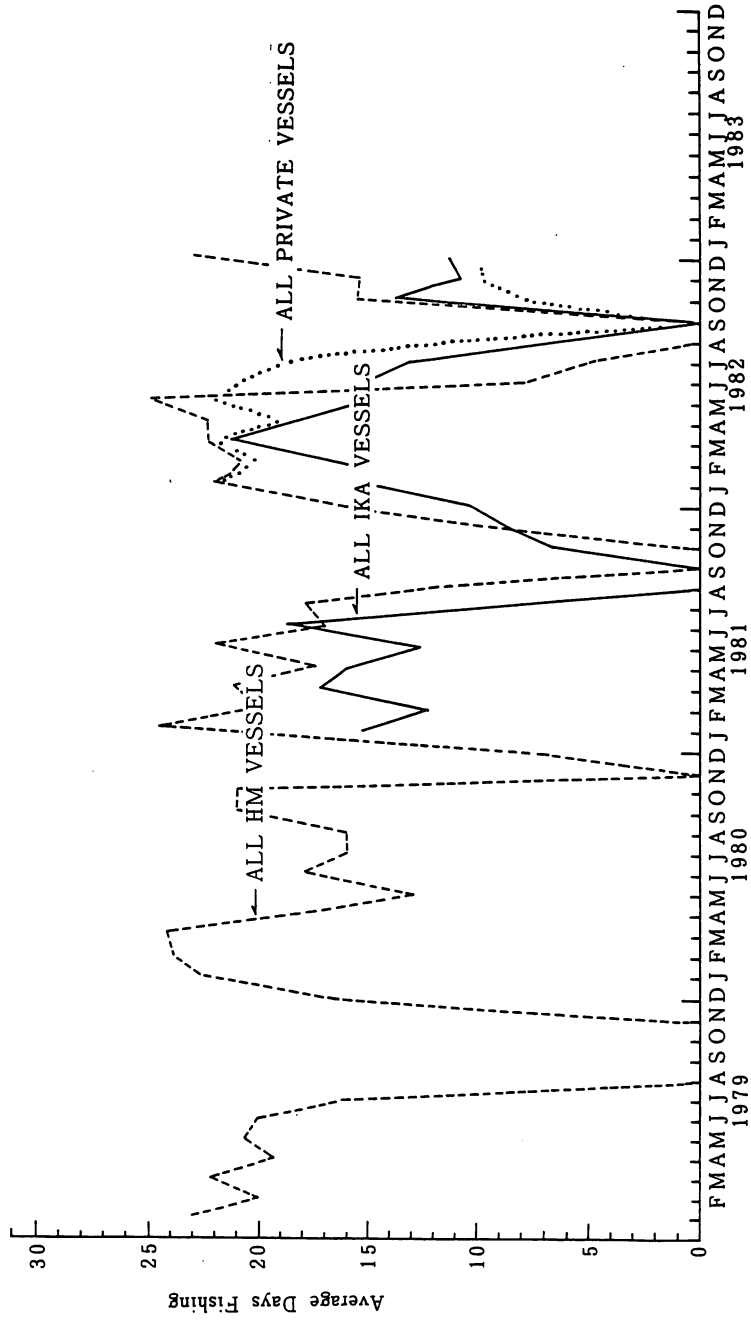


Fig. 7. Average Days Fishing per Vessel per Month 1979-1982

※ data not available for 1979 and 1980 for IKA Vessels

Source : Central Planning Office. 1983 : p. 36.

expenditure and accumulted losses over the period.

To illustrate the deterioration of the financial position, the balance sheet analysis for IKA Corporation prepared by the Financial Controller of IKA is given in Appendix. A. Cost of individual vessel from 1979 to 1983 is also given in Appendix. B. (a), (b), (c), (d), (e), (f). These vessels have made up the IKA fleet over the years. IKA No. 1 and IKA No. 2 have been disposed because of high operation cost and Tui-Ni-Wasaliwa has been sold at the end of 1983, thus reducing the pole and line fleet.

Salaries and wages have contributed to high operating costs as indicated in Appendix. B. (a), (b), (c), (d) and (e) which shows the wage and salary cost of each vessel in operation. Untill 1982 salaries and wages were based on fixed income which with low catches and fluctuations in catch together with low prices have contributed to high operation costs. Under the new management IKA has made a new wage agreement which directly relates to the value of catch or under a share system. Each vessel has a wage guideline based on a certain proportion of catch taking into account the fuel and ration costs in calculating the wages and salaries costs. Repair and maintainence costs have also been high over the period. Under the new management agreement, the shore management and administration staff have been reduced to cut down the costs.

(v) Problems faced by IKA Corporation

Major problems faced by IKA has been identified in various reports on IKA's activities. The report by Central Planning Office (1983) on IKA's economic activities states the following problems identified by IKA's General Manager.

1) The decline in world market for tuna has price to fall from US $1,100 to US $890, a reduction of 20%.
   At the same time IKA wages, fuel and ration costs have increased, thus causing a reduction in real terms in excess of 25%.

2) Lack of experienced fishing masters.
   Fishing masters and the dedication of good fishing masters are key to efficient operations. IKA has been relying on Japanese fishing masters which has been expensive as training of local crew and fishing masters is a long term activity.

3) Uneconomical ships.
   The second hand and Japanese ships operated by IKA were designed about 12 years ago. The fuel price then was not a critical factor in the operation costs, however, the sudden rise in fuel price has increased costs by 25 to 30%. Maintenance costs of older ships are higher because all equipment has been sea water cooled (corrosion).

4) Unskilled engineers
   IKA has had problems of lack of skilled engineers in order to diagnose mechanical faults. It is presently training local engineers on board.

5) Jetty facilities
   Initial costs were high when repair and maintenance was done by contractors as IKA had no workshop or berthing facilities.
   However, under the present Development Plan, IKA management has planned to

cut down costs and to facilitate for jetty facilities.

6) Fuel, ration and general expenses have also been high and IKA's new management plan is to cut down costs in this area as far as possible.

7) Dedication of fishermen
During bad fishing season fishermen lose motivation and dedication. However, under the new scheme introduced, there is no basic pay but under the catch share system.

8) Low bait catches
Bait fishing has seasonal fluctuations and IKA has faced problems of availability of natural bait. IKA further faced problems with the customary rights owners as most bait fishing grounds are located within the coastal areas.

Other problems identified in the administration and management areas have been basically the following :

a) Organisation Structure-IKA has adopted new organisation structure as the previous according to IKA's Auditors Review lacked formal coordination and communication and dis not define each level of authority.

b) Lack of planning and analysis capabilities.
"The present circumstances in which IKA finds itself is partly due to lack of effective corporate planning and management. IKA has had no formal corporate plan to guide its development. Investments in new vessels have been made without any thorough feasibility analysis of their expected costs and benefits." (Central Planning Office 1983 ; p. 21).

c) Other managemental problems include personnel and staffing and low labour productivity.

3) *State of Foreign Investment into Fisheries Related Industries : Pacific Fishing Company* (PAFCO)

(i) History of PAFCO Operations

In early 1960s the Japanese expressed interest in establishing a freezing and trans-shipment base in Fiji to serve their longliners operating in the region. In 1963 an agreement was reached to from the Pacific Fishing Co Ltd (PAFCO), which was registered under the laws of Fiji. The Company based at Levuka had the following investment structure :

C. Itoh Co.	33%
Nihon Ryokoku Kaisha	25%
Banno Co. of Osaka	25%
Fiji Citizens	16.7%

In 1974 a joint-venture was established between government of Fiji and PAFCO to develop local tuna processing and marketing from vessels fishing in South West Pacific and skipjack and yellowfin caught in the territorial waters and later in the Exclusive Economic Zone (EEZ) of Fiji. This was part of the government strategy towards industrial fisheries development in order to provide foreign exchange and employment.

The major element of the 1974 agreement included a re-capitalisation of the then existing company, PAFCO, from F$ 600,000 to F$ 1,800,000 distributed as follows :

C. Itoh Co.	61%
Nichiro Ltd	10%
Fiji Government	25%
Fiji Citizens	4%

PAFCO began canning operations in August 1976. The cannery had the following capability :

Ice plant	30 tonnes production/24 hours
Freezing plant	60 tonnes/24 hours
Cold storages	2,000 tonnes
Canning capability	60 tonnes (8-hour day 4 lines x 155mt/8hr)
Fish meal plant	12 tonnes/8-hour day
Can making	approx. 250,000 cans/8-hour day

PAFCO has contract with foreign and private fishing vessels besides IKA Corporation to supply catch to the cannery. Frozen tuna has also been imported to fulfil the demand for the cannery.

Figure 8 illustrates the catch landings to PAFCO by contracted vessels.

(ii) Achievement of Production

PAFCO has the sole right to process and export tuna from Fiji. Table 8 gives PAFCO production figures from 1974 to 1983. During the nine years (1975-1983) 66,926 tonnes of fish has been landed, 19,411 tonnes (29%) has been exported frozen and 47,515 tonnes (71%) has been used to produce 3,428,429 cases of tuna (48×7oz) for export, 61,449 cases of tuna flakes and 3,898 tonnes of fish meal for the local market.

The production is characterised by a progressive decline in longline catches and increasing pole and line catch of skipjack tuna. The decline in frozen fish exports corresponds with the increase in canned fish and fish meal production.

Table 9 indicates details on production of canned and frozen tuna by PAFCO.

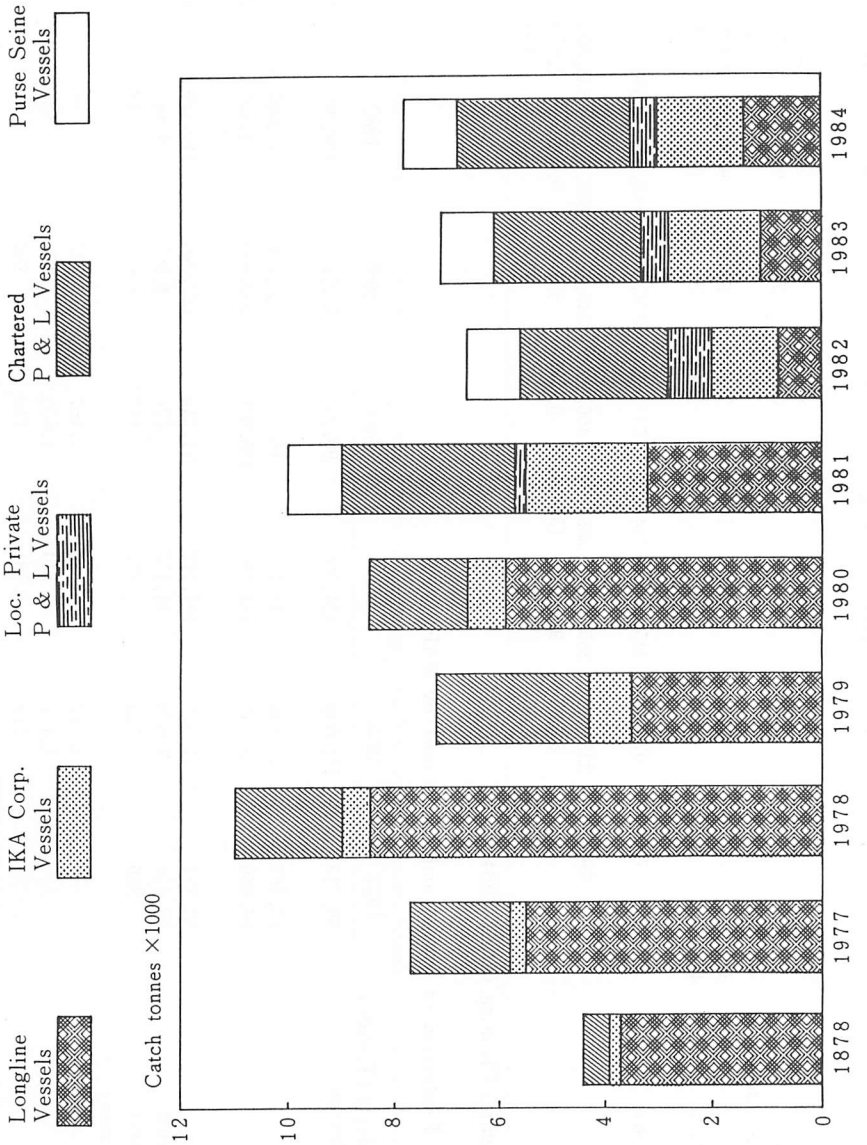
PAFCO's major buyers are Canadian and United Kingdom buyers (British Columbia Packers for albacore white meat ; John West, Princes, Saisbury and Tesco for skipjack and yellowfin tuna light meat packs). Canned pet food is mostly sold to Australia. Frozen tuna, mainly yellowfin and albacore, are exported to USA and big-eye and bill fish to Japan. Table 10 indicates exports of tuna products and countries of destination.

(iii) Operational Activities

PAFCO's operations involve "heading" and gutting of thawed tuna, followed by the cooking and the labour intensive cleaning and fillet preparation process. The cleaned "loins" are placed in cans as either a compressed "solid" pack or as a loose "flake" pack, with additions of vegetable and/or brine. Cans are sealed, washed and auto cleared prior to labelling and packing according to buyer instructions.

The cold storage activities include unloading of fish at the Levuka jetty and transporting

Fig. 8. Tund Landings at Pacific Fishing Company



Source : Ministry of Primary Industries. Commodity Profile. Fish. 1985. p. 95

Table 8. PAFCO Production Figures

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Landings (t)										
longline	3893	2632	3707	5700	7970	3568	5702	3200	2139	1557
pole and line		80	681	1800	2525	3496	2547	6530	5671	4535
imported/purse seine									665	2221
total	3893	2712	4388	7500	10495	7064	8249	9730	8475	8313
Frozen Fish exports (t)	4264	2458	2712	3152	3730	1349	3577	1668	528	493
Canned Fish :										
production (cartons)		7,500	97,830	245,700	414,500	547,632	318,042	605,000	583,520	608,705
Sales :										
export		69,160	238,958	385,703	385,703	496,100	346,235	662,206	533,305	689,982
local			5,028	9,310	13,815	6,000	5,954	6,662	7,670	7,060
Fish meal (t)			130	306	407	673	357	640	700	685

Source : Central Planning Office, 1984.

Table 9. Production of canned and frozen tuna by PAFCO

High quality products (T_2-cans)	1977	1978	1979	1980	1981	1982	1983
white meat albacore	95,538	228,608	224,090	90,935	132,131	138,905	144,864
Light meat							
Yellowfin	10,565	21,893	18,733	16,712	25,928	75,007	46,391
Skipjack	64,886	79,505	133,245	133,327	260,899	272,332	270,157
By Products							
Pet food	64,751	71,881	107,572	91,244	122,046	140,529	147,831
Low grade flakes	10,076	9,638	14,457	426	4,905	8,687	N. A.
Fish meal (tonnes)	306	553	673	357	656	718	741
Frozen tuna (tonnes)							
Albacore	—	1,572	0	1,467	839	—	—
Yellowfin	—	1,411	814	1,833	474	536	443
Big-eye/marlin	—	719	531	748	354	—	—

Source : Landell Mills Associates, 1982 : 168–169
Fisheries Division Annual Reports 1977–1983

Table 10. Export of tuna products in units of cases 1977—1983

White Meat Tuna	1977	1978	1979	1980	1981	1982	1983
Canada	51,978	221,395	154,700	167,600	75,800	94,272	144,864
Switzerland	—	—	1,370	—			
Japan	—	938	—	—			
Australia	2,156	—	—	—			
U.S.A	43,825	—	2.470	4,110			
Light Meat Tuna							
England	75,580	78,230	177,340	113,818	226,465	74,960	46,391
Jordon	—	—	—	1,370	4,088		
French Polynesia	—	—	—	—	500		
Vanuatu	—	—	—	—	100		
New Zealand	—	—	—	—	2,320		
Pet Food							
Australia	56,076	81,390	110,400	86,400	51,200		
Japan	—	—	—	—	28,009		
U.S.A	—	—	—	—	37,760		
Frozen Tuna							
U.S.A	—	3,025	298	2,387	474		
Japan	—	719	768	893	1,191	536	443
Singapore	—	—	220	—	—		
Italy	—	—	297	296	—		

Source : Lal & Slatter, 1982 P. 35
Fisheries Division Annual Report 1982, 1983.

to the store by cages and forklift trucks. Iced-fish is frozen in a 60 tonne/day blast-freezer. Empty cans for packing are supplied by Fiji Can Company (Tokyo Seikan Co.) located next to PAFCO.

The financial performance of PAFCO from 1974 to 1983 is given in Table 11.

During the 9 years, PAFCO had sales of $F 120.25m, an accumulated loss of $F 487,872. It paid company taxes to the government of Fiji of $52,831 and dividends of $F 324,000 of which $81,000 was paid to Fiji Government.

Fixed assets increased from $798,774 to $3,465,557 and accumulated depreciation amounted to $F 2,041,127.

With the establishment of the processing factory, the number of contracted longline vessels increased from 14 to 36 in 1976. In 1978, PAFCO achieved over $15 million in sales as a result of good albacore and skipjack catches.

An increase in oil price and the establishment of 200 mile EEZ created an instability in the longline fishery and the dependence on local skipjack tuna became more important.

(iv) Process of Employment

At the end of December 1983, PAFCO had 318 staff working at Levuka of which 305 were local and 13 expatriates. All operational staff are local people from the surrounding villages. Women labour is used in cleaning and packing. Hourly paid casual labour from the village is used at the factory and during unloading of catch. A bus collection service around the island is operated for all workers. Table 12 indicates the salary and wage stucture of PAFCO employees.

In 1983, payments by PAFCO in salaries and wages were as follows :

	Local staff (300)	Japanese staff (17)
Salaries and wages	1,273,882	601,545
Tax	165,474	235,097

The Japanese staff are employed on contract basis as expatriates at management level. PAFCO has a staff union with membership of full-time local workers which looks after workers welfare, disputes, compensation, etc. PAFCO tries to allocate work to all villagers in co-operation with the union. PAFCO claims that unlike tuna canneries in Solomons and Papua New Guinea, labour cost is high because of the pressure for higher wages through the workers' union.

(v) PAFCO/IKA Relations

There is a contractual agreement between IKA Corporation and PAFCO that PAFCO would buy all catch from IKA vessels. The prescribed schedule in the early years of operation were as follows :

Table 11. Economic Performance of PAFCO (1974–1983) F$

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
1. Sales $ F	4125229	1946590	5351820	11134814	15171762	133642247	17903258	21704838	14705168	18968008
2. Profit (loss) after tax	(191417)	(400992)	58912	566941 (350000 from ADR)	35177	145107	300007	749155	(971636)	114964 (1100000 from ADR)
3. Accumulated Profit/(loss)	(592409)	(533497)	(533497)	33444	68621	213638	55645 (350000 to ADR)	638800 (220000 to ADR)	(602836)	487870
4. Asset Diminition Reserve (ADR)	880000	880000	880000	530000	530000	530000	880000	1100000	1100000	—
5. Tax paid	—	—	—	—	—	—	—	270000	—	—
6. Dividends paid	—	—	—	—	—	—	108000	216000	—	—
7. Fixed assets	798774	1074106	2270421	2244290	2468082	2644107	2846476	2851801	3511078	346555
8. Depreciation	47117	47658	85467	143606	150793	184805	191301	189661	259310	25369
9. Total provision for depreciation	616304	663963	742376	865298	1013679	1198484	1384762	1531964	1787435	204112

Source : Central Planning Office, 1984.

Table 12. Salary and Wage Structure (PAFCO)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Fiji citizens :									
Wages	74,206	73,576	580,552	739,202	900,374	703,113	1,054,228	1,089,005	1,273,882
Income tax	12,416	29,263	64,639	93,057	126,450	81,680	138,331	134,994	165,474
Minimum wage :									
(male)	0.74	0.805	1.034	1.034	1.106	1.317	1.417	1.417	1.437
(female)	0.68	0.735	0.957	0.957	1.024	1.226	1.326	1.326	1.338
Japanese staff									
(a) Fiji									
C. Itoh paid by C. Itoh						130,995	80,223	93,826	110,713
Paid by PAFCO	NOT AVAILABLE					57,543	120,334	140,740	166,070
Total (4 staff)						188,538	200,557	234,566	276,783
PAFCO paid by PAFCO (9 staff)						259,066	323,390	301,768	237,454
Total income tax for all Japanese staff in Fiji	17,869	69,519	81,567	140,557	139,111	191,589	222,967	226,839	235,097
(b) Tokyo (no Fiji tax)									120,236
(c) C Itoh paid by C Itoh						28,687	38,162	40,561	27,785
paid by PAFCO (1 staff 1983)						28,087	38,162	40,561	27,785

Source : Central Planning Office, 1984.

Year	Scheduled quantity (mt)	Quantity supplied (mt)	% Performance
1975	400	80	20
1976	1,150	681	49
1977	2,300	1,800	78
1978	3,100	2,522	81
1979	4,150	3,496	84
1980	N. A.	2,547	N. A.
1981	〃	6,530	〃
1982	〃	5,671	〃
1983	〃	4,535	〃

Source : Central Planning Office, 1984.
N. A. - not available

As a result of high operation cost and seasonal pole-and-line fishing with poor catches, IKA has not been able to meet its obligations to PAFCO. On the other hand, PAFCO has continued to rely on other private pole and line vessels and Taiwanese and Korean longliners.

Rise in fuel prices and the declaration of the 200 mile Exclusive Economic Zone (EEZ) by the coastal states has reduced the foreign longline operations, thus reliance by PAFCO on IKA Corporation on the other hand depends on prices paid by PAFCO which is determined by the world tuna prices. The decline in world tuna prices since 1981 have reduced the skipjack price paid to IKA from US $1,100 per tonne to a current price of US $700 per tonne.

4) Labour Force and Technology Transfer

The establishment of PAFCO was seen as a means of generating employment. Clause 22 of the PAFCO Agreement required representation of Fiji citizens as follows :

Year	Minimum percentage Fijian citizens to be employed	Average actual percentage of Fijian citizens employed
1975	85	87.4
1976	89	92.4
1977	90	94.2
1978	91	94.2
1979	92	94.8
1980		94.7
1981		96.0
1982		95.9
1983		96.0

Source : Central Planning Office, 1984.

The management structure is given below in Table. 13. (a) and (b) for 1977 and 1983. There has been a gradual upgrading of local staff at the middle management level.

Table 13 (a). Details of PAFCO Employees (1977)

Classification	Japanese	Taiwanese	Fijian	Total
Assistant to General Manager	1			1
Manager	2			2
Assistant Manager	3			3
Section Chief	1			1
Section Assist. Chief	1		1	2
Supervisor	3	1		4
Senior staff			4	4
Headman			2	2
Assistant Headman			10	10
Permanent workers			70	70
Apprentice			1	1
Female–temporary			100	100
Casual workers			8	8
TOTAL	11	1	196	208

Table 14 (b). Details of PAFCO Employees (1984)

Classification	Japanese	Taiwanese	Fijian	Total
General Manager	1			1
Assistant General Manager	1			1
Manager	2			2
Assistant Manager	2			2
Section Chief	4			4
Assistant Section Chief		1		1
Supervisor	2		1	3
Senior staff			6	6
Leaders			12	12
Assistant Leaders			8	8
Permanent workers			146	146
Male temporary workers			25	25
Female temporary workers			125	125
TOTAL	12	1	325	338

Source : Central Planning Office, 1984
Fisheries Division Annual Report, 1977

Training has been given to 20 semi-skilled staff in Japan in the late 1970s but this was discontinued due to lack of financial support. However, foreign expertise particularly Japanese technical control is still regarded as important towards continuity of the cannery and as a step towards long-term transfer of technology.

5) *Competitive Situation of Marine Products in Overseas Markets*

In the early 1980s, the fishing industry and tuna canneries all over the world experienced the disastrous effects of the market depression and the canned tuna market continued to decline. This depressed state of the industry also led to closure of canneries in many parts of the world and low prices paid to tuna vessels.

Poor tuna season in Fiji, an increase in smaller size fish and low prices paid for canned products all contributed to the uneconomical production by PAFCO. In 1982 PAFCO's production decreased by only 3% but export earnings fell by 30% due to the significant reduction in selling price and PAFCO suffered a loss of nearly $1 million.

Production of canned tuna increased in 1983 but the selling price continued to decline and marketing became a problem because of competition from Thailand and Philippines. Increase in United States purse seining created an over-supply of tuna, thus further continuing the price to stay low.

C. Itoh Co. is responsible for the marketing of all PAFCO's products. There are no import or export duty levied on raw or processed fish. Fiji's major buyers for tuna are United Kingdom and Canada. Fiji has a market share of over 10% in the UK. The British market offers preferential access within terms of the EEC-ACP Agreement under Lome Ⅱ which provides a 24% duty concession for PAFCO's products going to U. K. Belgium as a member of the European Community also provides a small domestic market for yellowfin and skipjack solid packs.

PAFCO also exports both flake and solid white packs to Canada since 1977 but there are no preferential access such as those normally accorded to developing countries. Although the demand by Canadian buyers for white meat tuna increased, the decline in longline fishing has not been able to meet the required quantities of raw albacore.

USA provides the largest market for tuna, however there are no developing country concessions in the form of tariff reduction on any products which leaves Fiji competiting with the Japanese suppliers who are responsible for the majority of white meat supplies and are largest single supplier of light meat. (Lundell, 1982 : 144) ··· indicates that because of the nature of the import control system and the increasing proportion of imports originating in US joint-venture companies, that the sales of Fijian tuna to US will be opportunist by nature rather than strategic.

Presently PAFCO sees the need for high quality products to compete with the increasing operations in Thailand, Korea, and other American joint-ventures in developing countries.

However, PAFCO's continuity and increased production has been a result of negotiated market opportunities in United Kingdom and as a result of stable pound sterling compared to the fluctuating US dollar and US tuna market. Joint-ventures in Papua New Guinea where

major market was USA had to close operations as a result of uneconomical operations.

The present PAFCO joint-venture agreement is still under renegotiation after its first ten years of operation. Negotiations so far have indicated that C. Itoh CO. is reluctant to continue operations under the present terms of agreement. The Fiji Government on the other hand hopes to increase its share in order to keep the industrial fisheries base as an attempt to develop the pelagic fisheries ; to provide employment, foreign exchange and as a means of technology transfer.

Discussion

With political independence and commitment towards self-reliance, the islands sort to develop commercial tuna industry to increase foreign exchange by way of getting a greater share of benefits and involvement with the foreign operations. Furthermore, the declaration of the 200 mile Exclusive Economic Zone under the Law of the Sea increased the responsibility of the islands to manage the resources within their extended jurisdictions. As a result of this new order of the oceans, the South Pacific Forum established a regional fisheries institution called the Forum Fisheries Agency (FFA) as a mechanism for the development and management of the fisheries resources of the islands. The island governments in their National Development Plans also place considerable emphasis on the development of industrial fisheries in order to provide employment and foreign exchange.

On the other hand, through economic history there have been two major courses for the world capitalist development. The gradual progress of small-scale production into enterprise scale operations and the transfer of merchant capital into new investment areas. Adequate demand in the domestic market for products was also essential for entrepreneual development. However, through the rapid industrialisation policy for economic progress a further modernised course has been sought with the introduction of national and foreign capital.

From a historical perspective, except for foreign investment in plantation and mining development, Fiji's economy does not have the basic conditions for capitalistic development, as the economy has been carried on under household scale production. In fisheries, two enterprise scale operations are combined in order to develop the industrial pelagic fisheries following the modernised course of industrial progress.

IKA Corporation is financed by state capital in order to exploit the resources of the 200 mile EEZ while PAFCO is a foreign joint-venture between government of Fiji and Japanese trade companies to facilitate processing and marketing of catch. The development of IKA Corporation under state capital exhibits a similar course as that of the Japanese capitalistic fisheries development where the ultimate aim has been to transfer the state enterprise into private sector as a means to establish domestic entreprenurship. The establishment of PAFCO and IKA Corporation also provide an essential means of transfer of technology into the fisheries sector such as processing, handling, cold storage, shipbuilding, engine maintenance, business management, etc.

The development of this enterprise scale fisheries further differs from the usual practice in

that both are interdependent. IKA's market prices are determined by PAFCO, whereas PAFCO's availability of raw materials is determined by IKA's performance. Moreover, this industrial fisheries exists independently from the coastal fishery. It is export-orientated, thus depends on international tuna market prices rather than on the domestic market trends.

Like all other tuna industries in the world PAFCO and IKA are also facing similar problems such as high cost of operations and competitive market situation because of low tuna prices.

PAFCO's dependence on the preferential trade arrangements has enabled PAFCO to continue operations during the depressed market situation. Reliance on opportunity markets has become risky because of oversupply of tuna in the American market. Thus government assistance for seeking preferential market opportunities is still vital for the continuity of PAFCO untill the present market situation improves.

Low prices of tuna and seasonal availability of catch has also made IKA's pole and line fishery uneconomical. The number of pole and line vessels has been reduced and IKA is seeking alternative techniques for exploitation of pelagic fisheries. Government financial support has been essential for construction of more efficient boats and in providing the necessary funds for the operations.

Despite these continued problems, the current Development Plan still considers the industrial fisheries as an important sector towards fisheries development.

The islands have realised that their major economic potential lies in primary industrial development rather than having capital-intensive industries.

Moreover, with vast areas of ocean, fisheries is regarded as a sector of major economic potential. The small-scale fisheries provides the major means of livelihood for the outer island community and the coastal villages, while the industrial fisheries is aimed towards providing foreign exchange. Fisheries development is also seen as a means of improving the technical know-how, generate employment, and help towards rural development. Thus, given the complex socio-economic structure of fisheries, hence its planning to achieve such development objectives, one must take into account the particular characteristics of small island economies.

The following state some broad recommendations towards achieving such development objectives.

Regional Co-operation -There is a need for a regional co-operation for fisheries management and development. Considering the smallness of each of the island states in the international setting, limited economies of scale for industrial production, marketing and distribution problems, moreover, sharing of a common resource of the highly migratory species necessitates for a regional co-operation.

Bibliographies

Central Planning Office. Economic Analysis of the IKA Corporation. Octorber 1983.

Central Planning Office. Fiji's Seventh Development Plan. 1976-1980. Policies and Programmes for Social and Economic Progress. Suva, Government Printer. 1975. 217p.

Central Planning Office. Fiji's Eighth Development Plan. 1981-1985. Policies and Programmes for Regional Development. (Vol. 2). Suva, Government Printer. 1980. 221p.

Crocombe, R ··· (et. al). Politics in the Pacific Islands : Foreign Forces in Pacific Politics. Vol. A. Suva, Institute of Pacific Studies. 1983. 325p.

DYKE. J. V. ··· [et. al] Tuna Management in the Pacific : An Analysis of the South Pacific Forum Fisheries Agency. Hawaii, University of Hawaii Law Review. 1981. 65p.

Government of Fiji. Fisheries (Chapter 135) In : Laws of Fiji. Suva, Government Printer. p. 1698-1705 ····· Fisheries Regulations p. 5484-5995.

Government of Fiji, Marine Spaces Act. (Chapter 158A). In : Laws of Fiji. Government Printer, 1978. 14p.

IKA Corporation. Financial Statement for the year ending 30 June 1984. 15p.

Kearney, R. E. An overview of recent changes in the Fisheries for Highly Migratory species in the Western Pacific Ocean and Projections for future development. Suva, South Pacific Bureau for Economic Corporation. 1979. 96p.

Ministry of Agriculture and Fisheries. Annual Report for the years : 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983. Suva, Fisheries Division.

Pacific Fishing Company Ltd. Annual Reports : 1978, 1979, 1980, 1981, 1982, 1983, 1984.

South Pacific Forum Fisheries Agency. IKA Corporation Tuna Small Purse Seiner Study. (Draft Report). Forum Fisheries Agency. 1985. 131p.

APPENDIX : A.

1. *WORKING CAPITAL RATIO OR CURRENT RATIO*

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}} =$$

30th June 1983	30/6 1982	30/6 1981	30/6 1980
592996 / 1705241	935665 / 1138674	1486752 / 1179903	355018 / 331901
=0.34 or 1 : 0.34	=0.82 1 : 0.82	=1.26 1 : 1.26	=1.05 1 : 1.05

Working Capital or Current Ratio

The trend in the working capital for the last three years show that current liabilities have steadily exceeded current assets. Thus the short term finance is being eroded and is virtually non-existent. There is an inadequate level of working capital, in that there is a low level of investment in the current assets structure, where as liabilities have been increasing.

The industry level should be a one to one (1 : 1) or above that. In order to achieve this, cash has to be injected by the proprietors or additional sales and other revenues have to be generated by fixed assets employed by the Corporation.

2. *CASH FLOW RATIO*	30/6 1983	30/6 1982	30/6 1981	30/6 1980
Net Profit (Less)	(1134983)	(649684)	(70104)	(539707)
+ Depr Expense	−221940	−190112	−239025	−147573
= Fixed Assets =	1561814	1624268	1358778	759594
	= 0.58	=−0.28	=+0.12	=−0.52

The Cash. Flow Ratio

Indicates the rate of funds provided from the enterprise own resources for the replacement of its major fixed assets.

The trend in the ratio reflect a deteriorating position. The internal resources of the Corporation cannot finance replacement of fixed assets and as well as maintain the working capital ratio.

This (low) ratio when taken in conjunction with the proprietary ratio and the working capital ratio, shows that fixed assets have to be financed from either additional funds provided by the shareholders or from term borrowing.

3. *PROPRIETARY RATIO*	30/6 1983	30/6 1982	30/6 1981	30/6 1980
= Total shareholders Funds =	(89854)	1027300	1376984	462334
total Liabilities	2065818	1534358	1471132	651726
	=−0.04	=0.67	=0.94	=0.71
OR				
CAPITAL GEARING RATIO	2065818	1534358	1471132	651726
= Total debt (Liabilities) =	(89854)	1027300	1376984	462334
Total Equity (shareholders Funds)	−22.99	1.49	1.06	1.41

Proprietary Ratio

This ratio reflects the extent of the proprietors (shareholders) equity to external sources of funds (total liabilities) used to finance the enterprise. The trend of the ratio show that over the 3 year period, the Corporation has been relying heavily on external sources of funds. Shareholders have not matched the extent of borrowing from external suppliers of funds.

This could lead to the assumption that shareholders are not willing and prepared to take the risk of financing the enterprise. For a high risk enterprise, such as a fishing Corporation, the shareholders should take the full risk of financing the enterprise, then only can external suppliers of finance express an interest in financing the enterprise further if need be. The proprietary ratio also reflects on the working capital ratio. The higher the proprietary ratio the greater the working capital will be.

The Corporation is in simple terms highly under capitaised and consequently is facing the difficulties of a shortage of funds to finance the day to day operations of the Corporation ; and the fixed assets on which the day to day operations depend.

4. *NET WORTH RATIO*

$$= \frac{\text{NET WORTH}}{\text{TOTAL ASSETS}} =$$

	30/6/83	30/6/82	30/6/81	30/6/79
	(89854) / 2154810	1027300 / 2559934	1378984 / 2516342	462335 / 1110613
	=−0.04	0.40	0.54	0.41
OR	1 : −0.04	1 : 0.40	1 : 0.54	1 : 0.41

The Net Worth Ratio

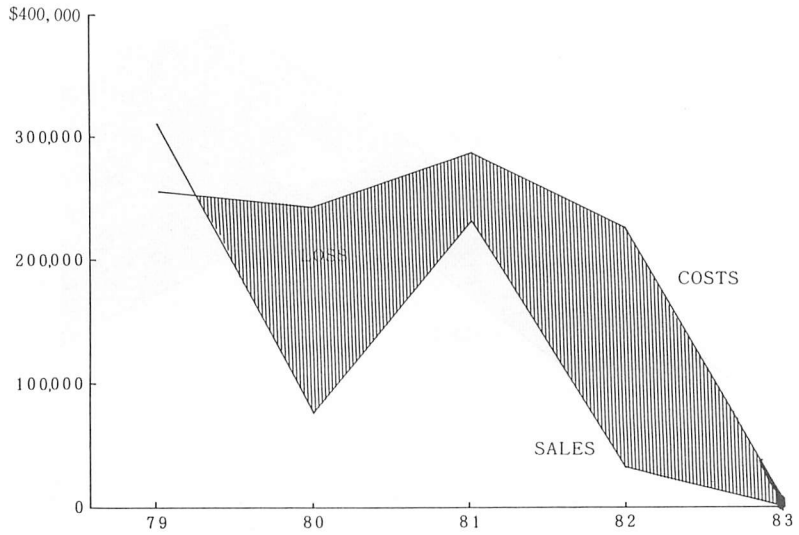
This ratio measures the net worth of the total assets employed in the enterprise. The ratio for 1981 and 1982 shows that the total assets are worth less than its par value. The ratio for 1983 shows and even worser position.

Source : Central Planning Office : 1983 ; p : 24-25.

APPENDIX : B

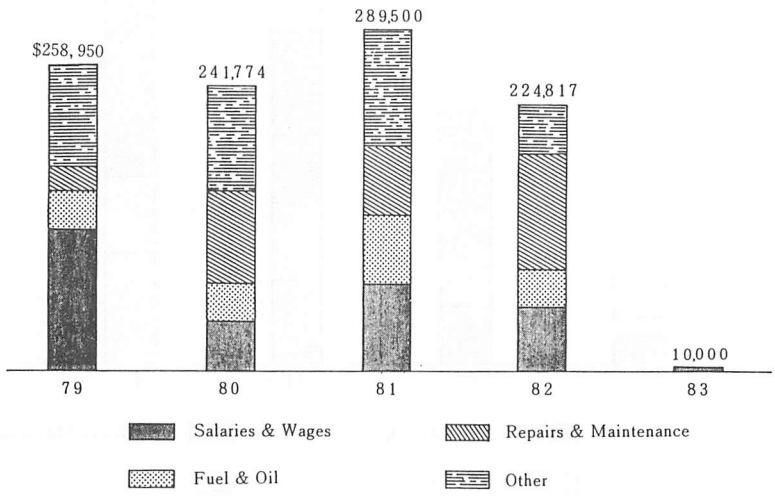
(a) Vessel: IKA NO. 1

SALES REVENUE and OPERATING COSTS (1979 to June 83)



Source : Central Planning Office. 1983 : p. 55.

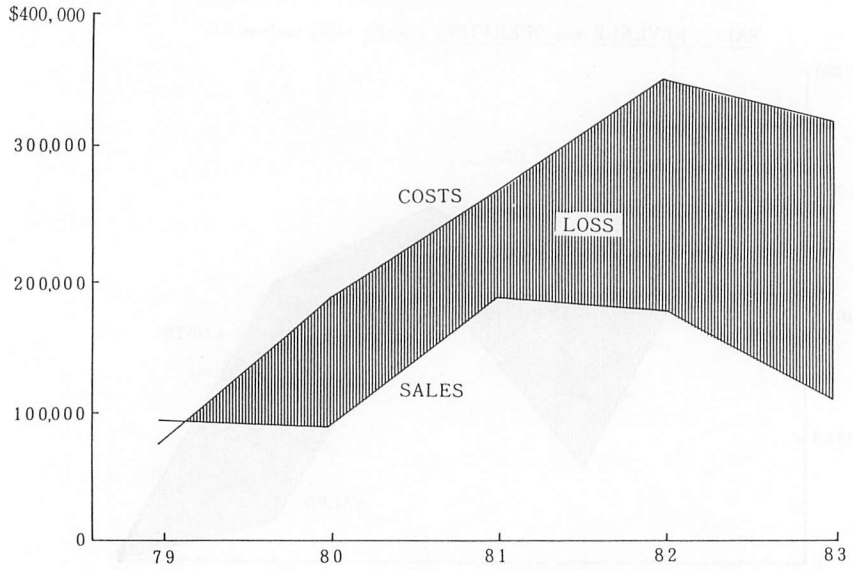
DIRECT OPERATING COST TRENDS (1979 to June 83)



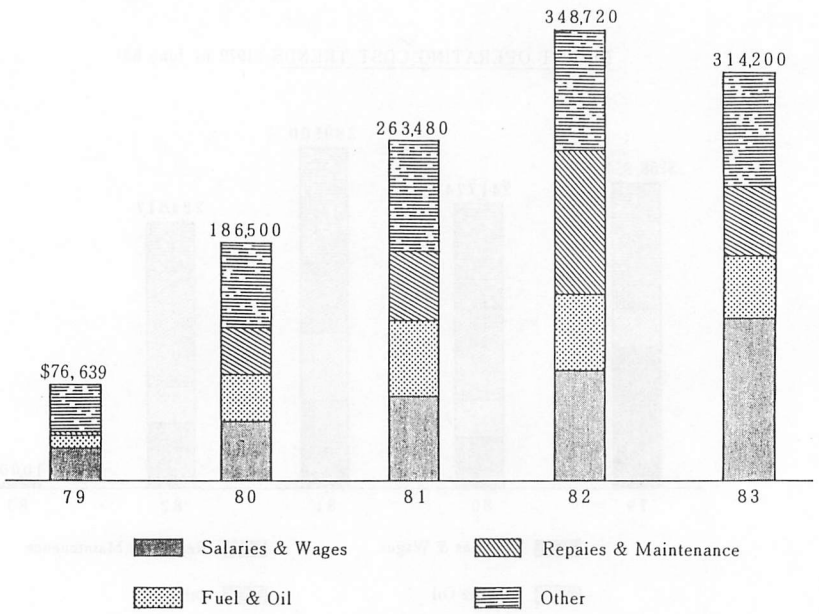
Vessel: IKA NO. 2

(b)

SALES REVENUE and OPERATING COSTS (1979 to June 831)



DIRECT OPERATING COST TRENDS (1979 to June 83)

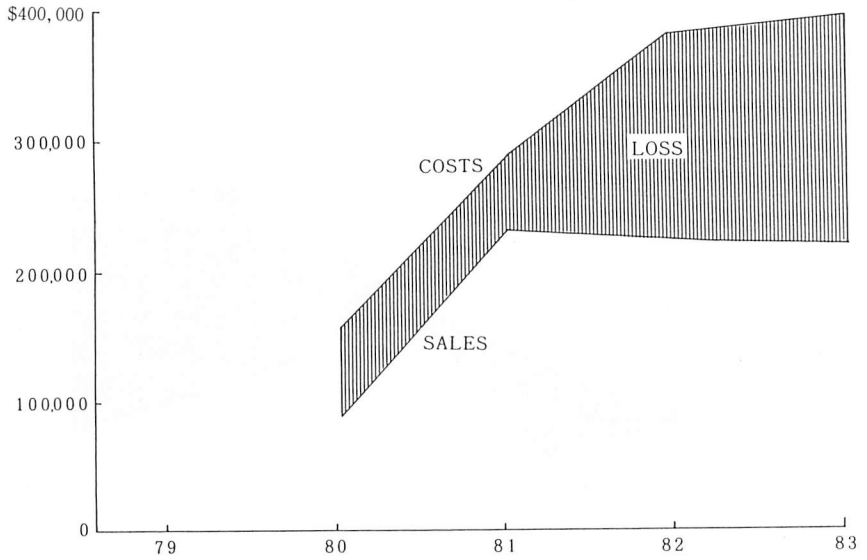


Source: Central Planning Office. 1983: p. 57.

Vessel: IKA NO. 3

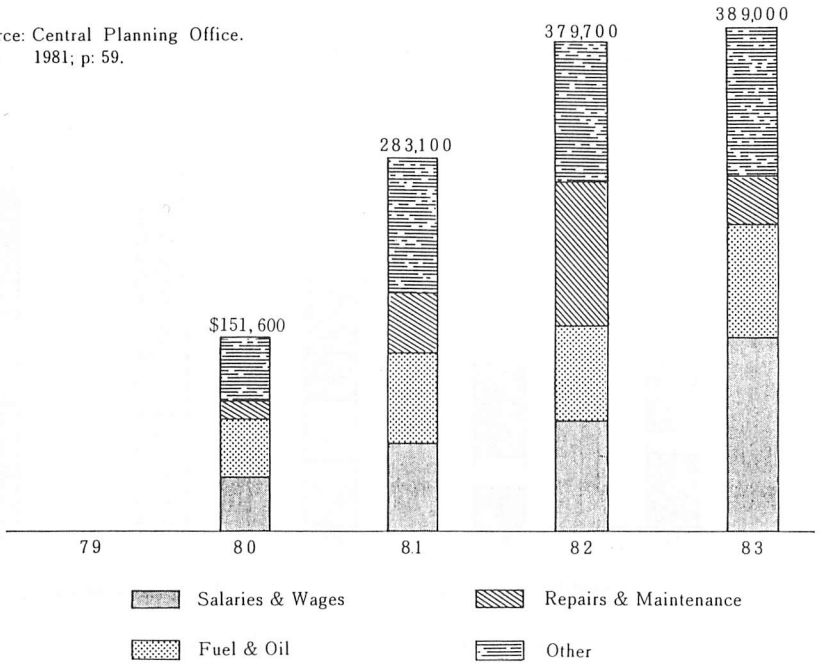
(c)

SALES REVENUE and OPERATING COSTS (1980 to June 83)



DIRECT OPERATING COST TRENDS (1980 to June 83)

Source: Central Planning Office. 1981; p: 59.

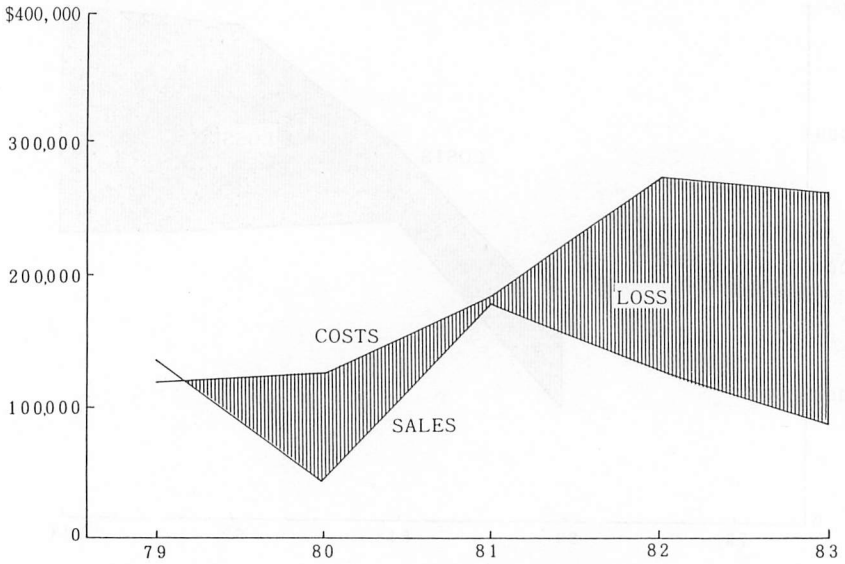


Source : Central Planning Office. 1981 : p. 59.

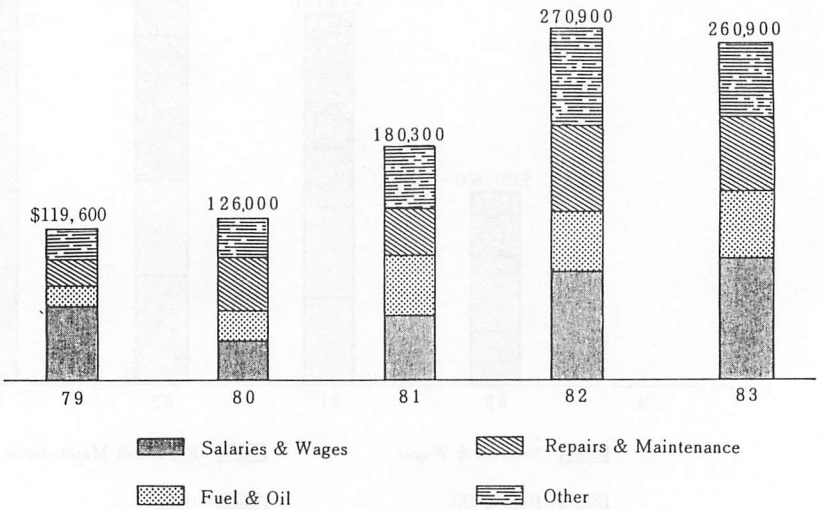
Vessel: TUI-NI-WASALINA

(d)

SALES REVENUE and OPERATING COSTS (1979 to June 83)



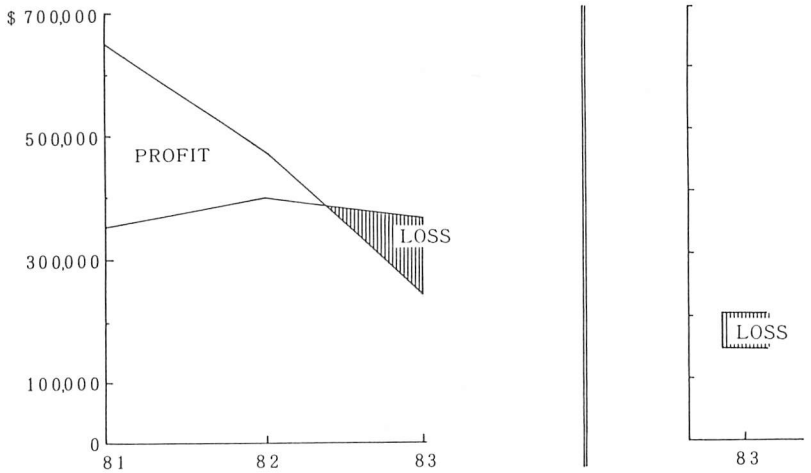
DIRECT OPERATING COST TRENDS (1979 to June 83)



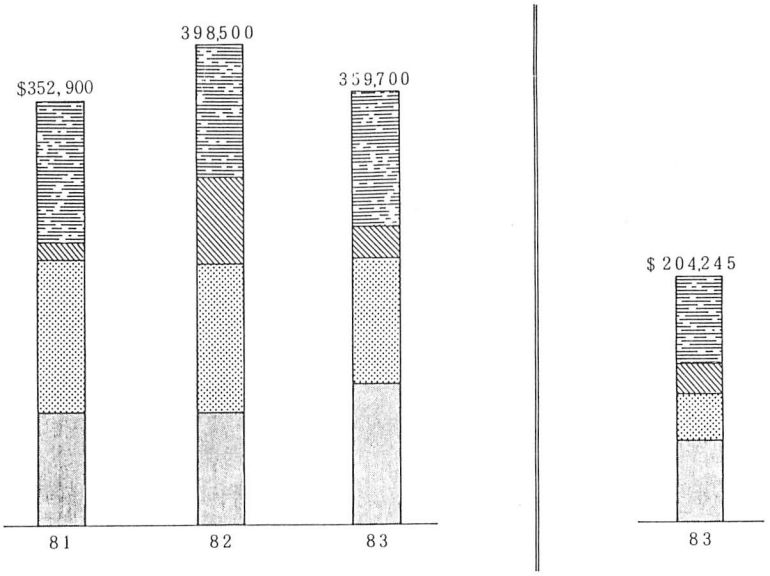
Source: Central Planning Office. 1983: p. 61.

Vessel: IKA NO. 5 IKA NO. 7

(e) SALES REVENUE and OPERATING COSTS



DIRECT OPERATING COST TRENDS



Source : Central Planning Office. 1983 : p. 63.