

## 4.7 Fish Quality Control

### 4.7.1 Objective and Method of the Study

Fish quality greatly affects price and also quality after processing. In order to maintain freshness of fish products it is necessary to control fish quality at each stage of marketing.

In this study, fish handling methods, the facilities and the environmental conditions related to fish quality were analyzed in order to determine the appropriate facilities and distribution system to control fish quality.

In order to identify current standards in fish quality, tests on freshness and sanitation were conducted. The relation between fish quality and storage period of major fish species was investigated by conducting a storage test.

#### (1) Test on Freshness

As an indicator of freshness of fish, the K-value, pH and body temperature were measured in conjunction with sensory tests at each stage of fish distribution from the time of landing to arrival at the market, in order to identify existing conditions of freshness, and to investigate causes, and to pinpoint appropriate methods necessary to control freshness.

Survey areas are shown in Tables 4.7.1a,b. The survey was conducted twice in Peninsular Malaysia, Sarawak and Sabah, where the landing volumes fluctuate seasonally.

K-value, body temperature (inner) and sensory test items were selected for the test on freshness. The selected species are shown in Table 4.7.2.

#### a) K-value

K-value test measures the ebb and flow of ATP (Adenosine Triphosphate) which indicates autolysis in the muscles. Although, there are many testing methods, the test paper method was selected for simple and quick testing in the field.

The K-value of fish just after death ranges from 5 to 10 percent and it increases with temperature and time. In Japan, the value should be less than 20 percent for "sashimi" and 60 percent for cooked fish products.

b) pH

The pH of each species was tested to determine the level of putrefaction in the muscles. Optimum environment for bacteria is around pH 7. When the pH drops lower, the propagation rate of bacteria is suppressed, but fish is liable to putrefy when PH levels remain around seven.

c) Temperature

The deterioration rate of fish is also greatly affected by temperature and time. In order to grasp the existing conditions of temperature control, the internal body temperature was immediately measured after sampling.

d) Sensory test

In order to arrive at a general evaluation including an evaluation on whether the handling methods of fish products were good or bad, sensory tests were conducted. However, due to moderately subjective evaluating standards, the evaluation index may be erroneous.

The results of the evaluation were classified into five ranks based on conditions of rigor mortis, skin, eyes, gills, abdomen, and the presence of odour.

Rank	Condition
1	----- Just after death, but before rigor mortis
2	----- Rigor mortis
3	----- Beginning of autolysis
4	----- Advanced autolysis
5	----- Beginning or advanced putrefaction

In addition to these tests, a study was carried out on handling methods, storage conditions, and the duration of storage at each distribution stage. Countermeasures to maintain fish freshness were studied after analyzing the results of the freshness test.

## (2) Sanitary test

Tap water, ice, fish, fish boxes, and water in the fish box or fish hold were tested for the presence of MAB, Coliform, and Vibrio parahaemolyticus. Two species were selected for testing at each site.

MAB was tested using the plate culture method based on the standards of the Food Sanitary Test Guide in Japan. Coliform was tested according to MPN method using LB Broth and BGLB. Vibrio parahaemolyticus was tested using the plate culture method with TCBS Agar. The tests were conducted with the cooperation of the Universiti Pertanian Malaysia (UPM), Department of Science, Faculty of Food Science and Biotechnology.

## (3) Storage test

The speed of deterioration varies according to the fish species and the method of storage. In the storage tests, the most representative fish species were tested at several temperature zones and storage periods.

### 1) Fish species selected for testing

Testing was carried out on the following five species of fish of both low and high grades.

- a) Black pomfret
- b) Brown, Silver jewfish
- c) Indian mackerel
- d) Spanish mackerel
- e) Rostrum prawn

### 2) Storage temperature and testing period

Storage temperatures for the test were divided into three temperature zones, ice storage, freezer storage (7°C to 10°C), and room temperature. The testing period was two weeks or until putrefaction; and testing was conducted every one to two days in ice storage, every one day or half a day in freezer storage, and every three to six hours at room temperature.

3) Test items

The K-value, body temperature and pH were measured in conjunction with sensory tests.

#### 4.7.2 Results of the Survey

(1) The results of freshness test

The results are shown in Figs. 4.7.1 to 4.7.4.

1) At fish landing site

a) Kuala Kedah

Temperature control at both the private jetties and the LKIM complex was not good; mean fish body temperature ranged from 23°C to 26°C. The K-value averaged to 30-33 percent.

b) Pulau Pangkor

Fish body temperature was comparatively low at 5°C, but mean K-value was around 30 percent. This may be attributed to the fish preserving methods which are not efficient (thermal conductivity between ice or cold water and fish is not good) and cooling down takes a long period of time.

c) Chendering

The mean body temperatures were around 15°C, mainly caused by prolonged exposure on the jetty. However, temperature control was relatively good on board. K-values were generally less than 20 percent and the results of the sensory test were better than that of the other areas.

d) Mersing

The body temperatures of fish both at LKIM complex and private jetties were maintained lower than 5°C than in other areas. Mean K-values were around 15 percent at LKIM complex, but it differed greatly at private jetties at 37 percent. This difference in K-value was due to the large landing volume per boat at the private jetties and inefficient handling methods which slow the cooling rate of fish.

e) Bintawa

Temperature control was not good at both LKIM complex and private jetties; mean body temperature was around 15°C. Fish handling was not good and the damage to fish was the cause of deterioration in freshness. Moreover, the number of days per fishing trip is as long as 10 days or more, and sufficient amount of ice is not used. K-value averaged 35 percent.

f) Kota Kinabalu

The mean body temperature of fish landed at SAFMA complex and its surrounding was 10°C and the K-value averaged 30 percent.

The survey was carried out twice; during peak and lean fishing seasons in the east coast of Peninsular Malaysia, Sarawak and Sabah. From both the surveys, similar results were obtained and there is no significant difference between both the results.

2) Wholesale and retail markets at consumption areas

Due to sufficient use of ice, fish body temperature is low, but freshness is not very good. In general the deterioration of freshness is minimal from the time of landing to market transport. However, deterioration has already occurred before the fish was landed. Consequently, there is very little good quality fish on the market. There is only a slight difference between the mean K-values of 25.4 percent at the landing sites and 32.1 percent at the markets.

According to the analysis by area, mean K-values at Kuching and Alor Setar showed a low degree of freshness at 46 percent and 43 percent, respectively, which indicated deterioration of fish at the landing sites in Bintawa and Kuala Kedah. The mean K-values were 27 percent at Kuala Lumpur, and 22 percent at Johor Bahru which were only slightly different from the K-values at the landing areas. Problem in freshness occur during handling before fish is landed. In Japan the mean K-value is around 15 percent at wholesale markets.

3) Imported fish from Thailand

The mean body temperature of imported fish from Thailand was around 5°C, which indicated good temperature control, and the mean K-value was around nine percent at the import point of Bukit Kayu Hitam. However, the samples used for the test were relatively high grade

fish, and this might be the cause of the good results.

(2) Results of sanitary test

The present sanitary conditions of tap water, ice used in fish holds and boxes are described below.

1) Tap water

The presence of MAB and coliform in all tests was negative. Sanitary conditions were good.

2) Ice used for packing

Sanitary condition of ice was comparatively good in Kuala Kedah (LKIM complex, private jetty and wholesale market), at the Chendering complex and private jetty in Pangkor Island; but ice used at the private jetties in Mersing, Tampoi wholesale market and in Marang were contaminated because of careless handling (use of unclean boxes, contamination during ice crushing, etc.). Particularly the ice used at Kota Kinabalu was highly contaminated. It is recommended that sanitary control at ice plant is immediately instituted.

3) Water used in fish boxes and fish holds

The number of MAB in the water used in the fish boxes and fish holds was 104-107/ml and the number of coliform was more than 103/ml. Contamination by vibrio parahaemolyticus was found at the fish landing sites at LKIM complexes in Mersing and Chendering and the private jetties in Mersing, Marang and Kuantan. Fish should not be allowed to soak in such waters. The following countermeasures are recommended for improving the sanitary conditions.

a) Sanitary control on board

The fish hold or the fish containers should be washed after landing or before fishing operations. For cooling or washing fish on board, clean sea water near the fishing grounds, instead of river water or water taken from the coastal areas, should be used.

b) During fish landing

Fish should be thoroughly washed in tap water (to eliminate contamination by mud or bacteria)

c) From landing to markets

Temperatures should be maintained at less than 10°C to suppress the propagation of bacteria. Water from ice that has melted during transport should be removed at the market. Sufficient ice should be used to cool down the fish particularly at the markets because fish is usually exposed to the outer hot air for a long period of time.

4) Fish products

The results by area are shown in Figs. 4.7.5 - 4.7.7.

a) MAB

According to the Manuals of Food Quality Control by FAO, MAB should be less than 100,000/g to meet high quality food standards. Fish contaminated beyond the Malaysian standard (500,000/g) was detected at Kuching; the rate of contaminated fish samples was 33 percent, at Kota Kinabalu retail markets (50%) and Alor Setar wholesale market (17%). It is probably caused by contamination from fish boxes. The MAB contamination in other areas was less than the Malaysian standard.

b) Coliform

Although the Malaysian standard for coliform is 50/g, the contamination of coliform beyond this level was detected in almost all the areas investigated. The contamination is mainly caused by human pollution. The source is fish holds, fish boxes using river water or sea water polluted by sewage.

- c) The Vibrio parahaemolyticus contamination (cause of food poisoning) beyond the FAO (100/g) was found at the Kuala Kedah LKIM complex, Terengganu retail market, Kuantan private jetty, Mersing LKIM complex and private jetty, and Kota Kinabalu SAFMA complex. It is characteristic that significant contamination was found mainly in landing areas. The underlying cause is high temperature and contamination from mud or use of polluted seawater.

Since Vibrio parahaemolyticus is suppressed at temperatures lower than 10°C and dies in low salinity, it is essential that the fish is thoroughly washed in fresh water after landing and low temperature is maintained. The test results at the markets in nearly all regions

were negative. This was probably due to low salinity level of melted ice water and low temperature control during transport.

d) NAG Vibrio and Cholera

Contamination of food poisoning NAG Vibrio and Cholera was negative in all the samples tested. However, since they are pathogenic bacteria, it is essential to check continuously for the contamination by these bacteria.

Based on the above analysis, sanitary control procedures required in FMDS are summarized below.

- To sort and wash the fish in clean sea water soon after catch.
- To wash fish holds and boxes after landing or before catching.
- To wash the fish in tap water at landing site.
- To wash the floors of the complex, private jetty and market.
- To control fish body temperature with ice as low as possible from the time of catch to the display at the market.
- To improve the facilities for drainage and sewage at markets.

It is necessary to monitor and feedback sanitary conditions periodically in order to adopt measures for improvement. For instance, in Thailand and the Philippines, the government enforces inspection of the fishery products for export through designated agencies, and the government also requests foreign countries to import only the certified products with confidence. Under these circumstances, it is necessary to establish such inspection system in Malaysia to promote fish export.

(3) The Results of Storage Test

The time required to reach 10 percent in K-value after rigor mortis is shown in Fig. 4.7.8. At room temperature (around 25°C), the time elapsed was three to six hours which varies depending on species, but in the refrigerator (6-8°C), it was 12 hours to two days and one to four days in ice water (0°C).

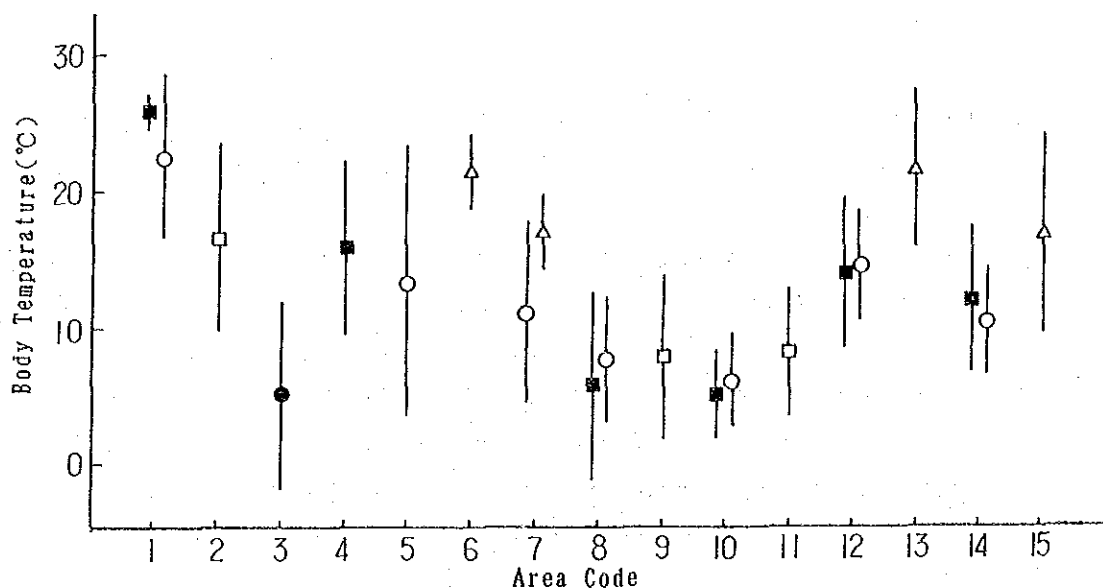
Analyzing the time by species, it was characterized that Indian mackerel, jew fish and spanish mackerel were likely to deteriorate, while pomfret was comparatively easy to be maintained in good quality



for a long period of time.

MAB was suppressed under refrigeration and in ice water, but it exceeded the Malaysian standard within 24 hours at room temperature.

Based on the above results, it is recommended that storage period and temperature should be as minimum as possible for fish quality control. If a fishing trip takes several days, it is essential to control body temperature to at least 0°C. For further high quality, it is desirable to control the body temperature at -2°C (it will not be frozen) through up-grading refrigeration ability or using sufficient ice and salt or sea water.

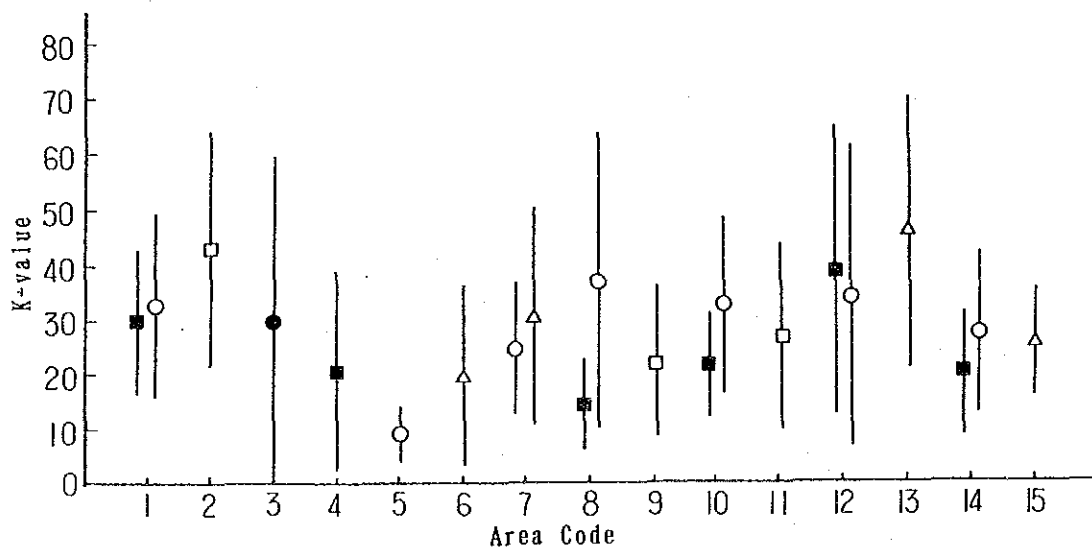


Remarks; 1. Kuala Kedah 2. Alor Setar 3. Bukit Kayu Hitam 4. Chendering  
5. Marang 6. Kuala Terengganu 7. Kuantan 8. Mersing 9. Johor Bahru  
10. Pulau Pangkor 11. Kuala Lumpur 12. Bintawa 13. Kuching  
14. Kota Kinabalu 15. Keningau

■ Public complex/Jetty ○ Private jetty □ Wholesale market  
△ Retail market ● Import point

(Symbol shows the mean and lines indicate standard deviation)

**Fig. 4.7.1 Mean Fish Body Temperature at Each Marketing Stage by Area**



Remarks; 1. Kuala Kedah 2. Alor Setar 3. Bukit Kayu Hitam 4. Chendering  
5. Marang 6. Kuala Terengganu 7. Kuantan 8. Mersing 9. Johor Bahru  
10. Pulau Pangkor 11. Kuala Lumpur 12. Bintawa 13. Kuching  
14. Kota Kinabalu 15. Keningau

■ Public complex/Jetty ○ Private jetty □ Wholesale market  
△ Retail market ● Import point

(Symbol shows the mean and lines indicate standard deviation)

**Fig. 4.7.2 Mean K-Value at Each Marketing Stage by Area**

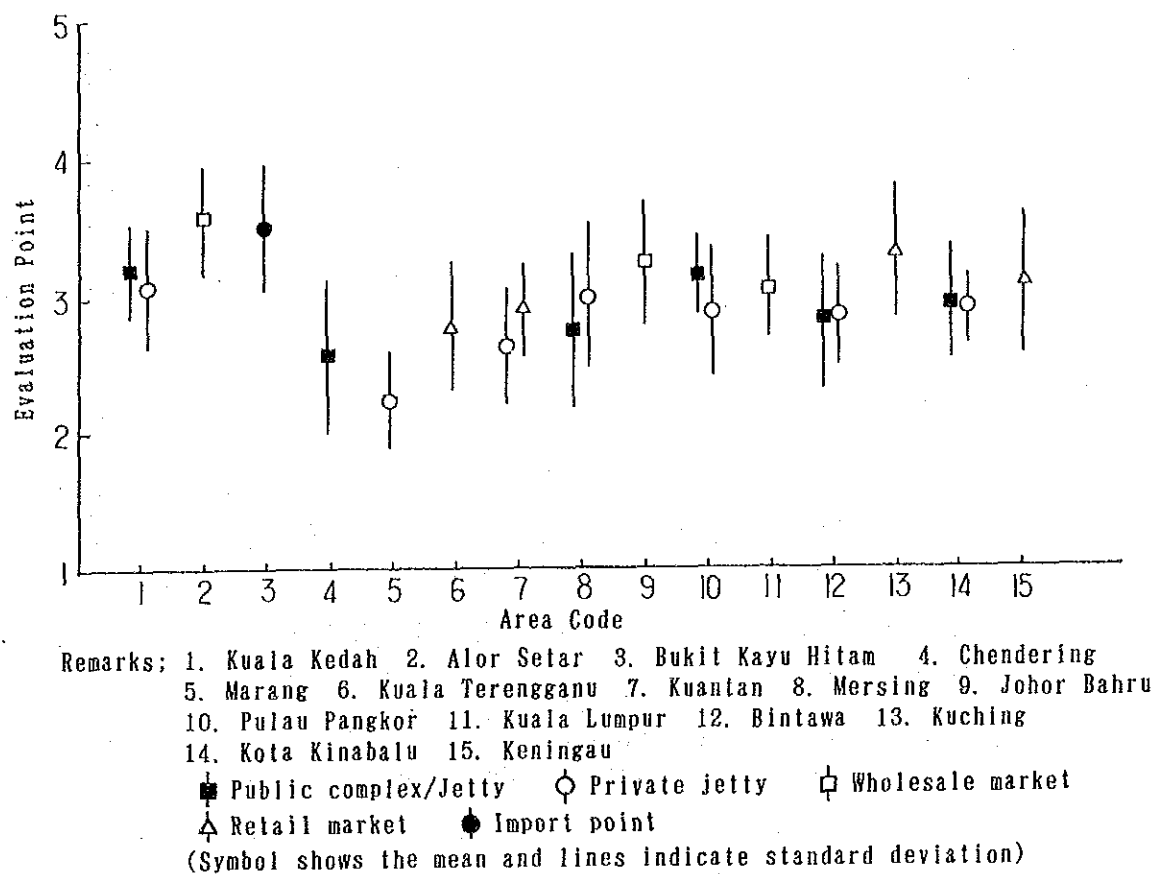


Fig. 4.7.3 Mean Evaluation Point of Sensory Test at Each Marketing Stage by Area

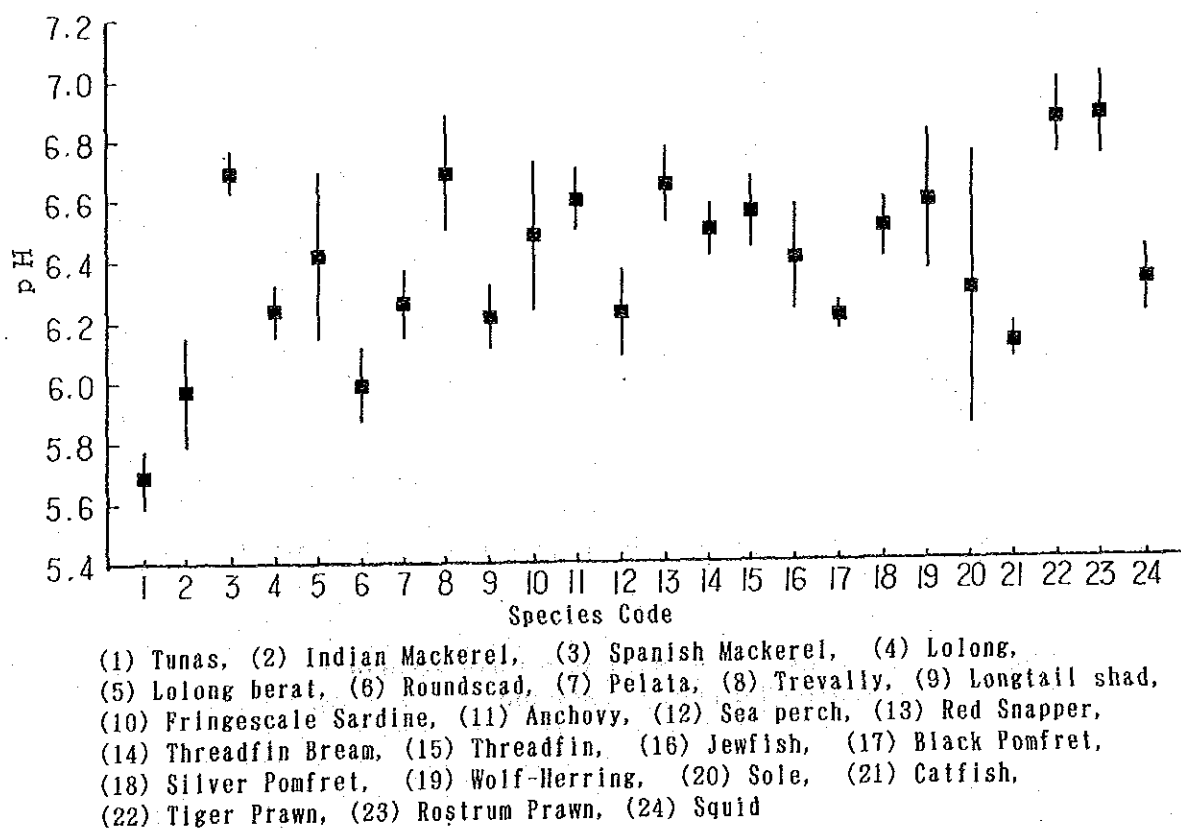
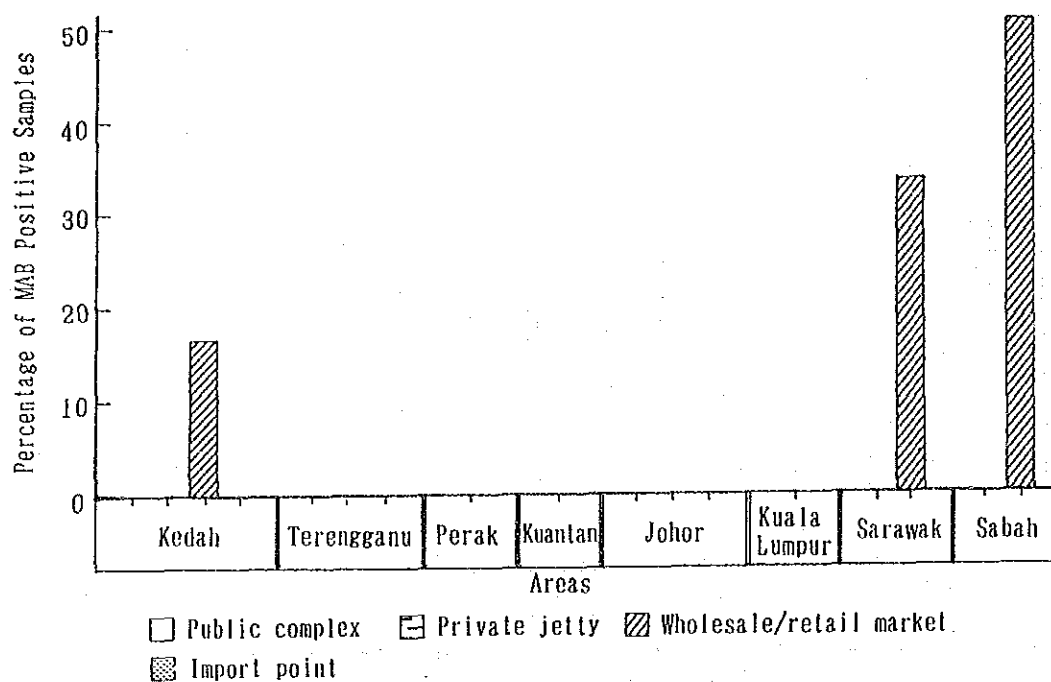
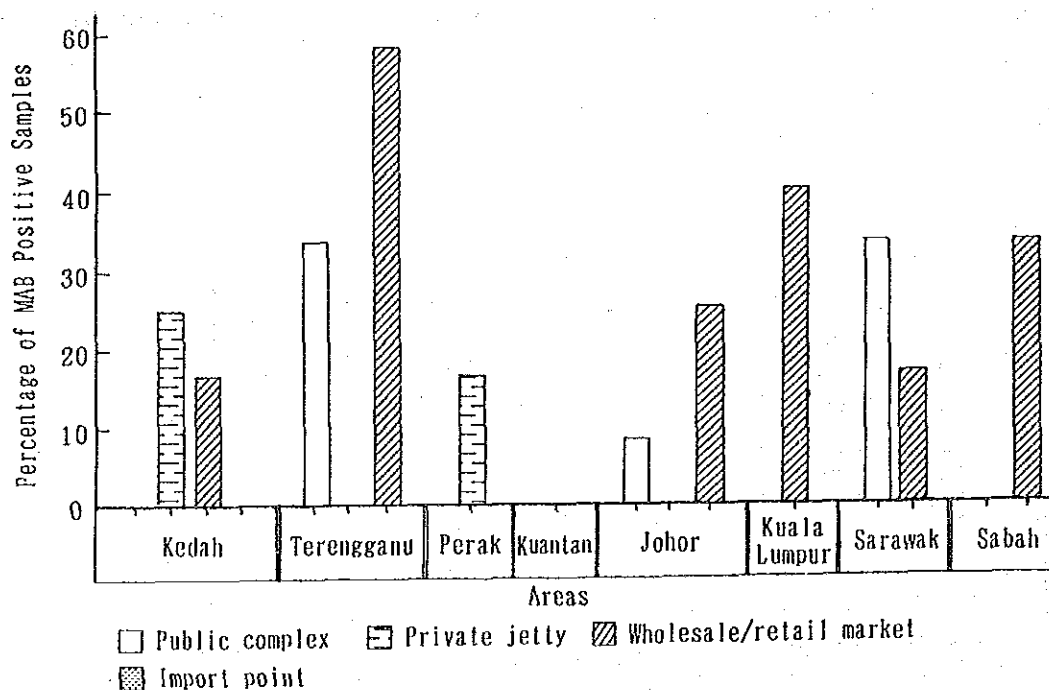


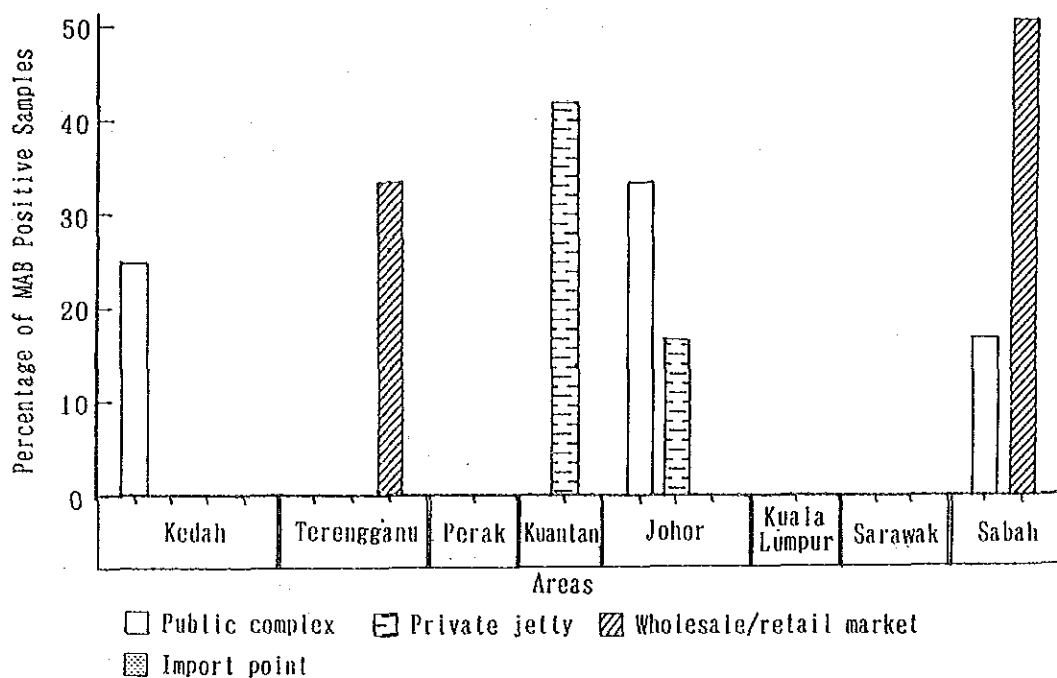
Fig. 4.7.4 Mean pH by Fish Species



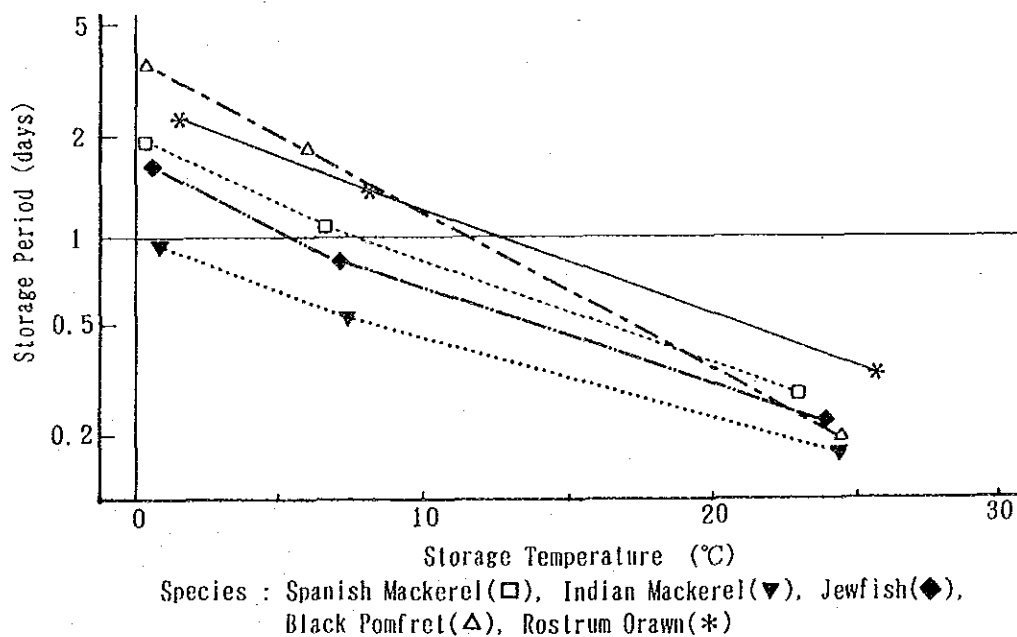
**Fig. 4.7.5 Percentage of MAB Contaminated Samples Exceeding the Malaysia Standard**



**Fig. 4.7.6 Percentage of Coliforms Contaminated Samples Exceeding the Malaysia Standard**



**Fig. 4.7.7 Percentage of *V. parahaemolyticus* Contaminated Samples Exceeding the FAO Standard**



**Fig. 4.7.8 Relation Between Storage Temperature and Period (days) Until the K-Value Reaches More Than 10%**

**Table 4.7.1a Survey Areas in Lean Fishing Season**

Survey Areas	Public Complex	Private Jetty	Wholesale Market	Retail Market	Import Point
Kedah State					
Kuala Kedah	○				
Alor Setar			○		
Bukit Kayu Hitam					○
Terengganu State					
Chendering	○				
Marang		○			
Kuala Terengganu				○	
Johor State					
Mersing	○	○			
Johor Bahru			○		
Perak State					
Pulau Pangkor		○			
Kuala Lumpur			○		
Sarawak State					
Bintawa	○	○			
Kuching			○		
Sabah State					
Kota Kinabalu	○	○			
Keningau				○	

**Table 4.7.1b Survey Areas in Peak Fishing Season**

Survey Areas	Public Complex	Private Jetty	Wholesale Market	Retail Market	Import Point
Terengganu State					
Chendering	○				
Marang		○			
Kuala Terengganu				○	
Pahang State					
Kuantan		○			
Johor State					
Mersing	○	○			
Johor Bahru			○		
Perak State					
Pulau Pangkor		○			
Kuala Lumpur			○		
Sarawak State					
Bintawa	○	○			
Kuching			○		
Sabah State					
Kota Kinabalu	○	○		○	

**Table 4.7.2 List of Fish Species for Freshness Test**

	English Name	Local Name
1	Bonito	Aya
2	Black Pomfret	Bawal Hitam
3	White Pomfret	Bawal Putih
4	Anchovy	Bilis
5	Catfish	Duri
6	Brown, Silver Jewfish	Gelama
7	Golden Striped Snapper	Jenahak
8	Indian Mackerel	Kembong
9	Japanese Threadfin Bream	Kerisi
10	Threadfin	Kurau
11	Long Tongue Sole	Lidah Pasir
12	Ox-eye Scad	Lolong
13	Ox-eye Scad	Lolong Bara
14	Red Snapper	Merah
15	Wolf-Herring	Parang-Parang
16	Yellowtail Scad	Pelata
17	Malabar Trevally	Rambai
18	Malayan Flounder	Sebelah
19	Yellow-banded Trevally	Selar Kuning
20	Round Scad	Selayang
21	Giant Sea Perch	Siakap
22	Cuttle Fish	Sotong Biasa
23	Fringescale Sardine	Tamban
24	Spotted Spanish Mackerel	Tenggiri
25	Longtail Shad	Terubok
26	Black Tiger Prawn	Udang Harimau
27	Smoothshell Prawn	Udang Minyak
28	Big Head Sand Prawn	Udang Solo

## **4.8 Fishermen and Fishermen Organization**

### **4.8.1 Fishermen Organizations**

#### **(1) Background of the Organizations**

There are presently two organizations for fishermen in Peninsular Malaysia which are called the Fishermen's Association (FA) which number 61 and the Fishery Cooperative Society (FCS) of which there are 40. These two organizations were established under the auspices of the Fishermen's Associations Act in 1971 and the Cooperative Societies Act in 1948, respectively.

When the Amendment of the Fisheries Development Authority Act was enacted in 1971 and LKIM was established, these two organizations were placed under LKIM jurisdiction. LKIM policy has been to focus on the FA as the main organization for fishermen. Since the enactment of the Amendment of the Fisheries Development Authority Act 1971, LKIM has been rapidly converting the FCS to Area Fishermen Association (AFA) and has excluded financial and technical assistance to FCS, in order to achieve one uniform fishermen organization in accordance with this policy.

As a result, the number of FCS decreased from 71 in 1975 to 40 in 1989. In contrast, the AFA increased from 21 associations to 61. Many fishermen have joined or transferred from the FCS to the AFA, and the AFA has begun to function as the nucleus of the fishermen associations in Malaysia.

#### **(2) The System and Structure of the Fishermen Associations**

##### **1) The different categories of FA**

The FA in Malaysia has been divided into three categories according to Act 44 of the Fishermen's Associations Act, 1971 and are as follows:

##### **a) The National Fishermen's Association (NFA)**

The NFA represents the FA at the national level, and it was established at the request from SPA of more than two states.



b) The State Fishermen's Association (SFA)

The SFA represents the FA at the state level, and it is established when there is a request from two or more AFA.

c) The Area Fishermen's Association (AFA)

An AFA can be established by the participation of a minimum of more than 50 people affiliated to fisheries, over the age of 18 who live in one area.

At the top of the hierarchy is the NFA, followed by the SFA, and lastly by the AFA.

There are 61 AFA in 11 states, with the exception of Sabah state, and in 1989 there were 50,206 fishermen registered as members. The SFA have been established in 11 states, excluding Sabah state, and the AFA of each state are its members. All the SFA are members of the NFA.

2) The structure and organization of Fishermen's Association

a) The Structure and Organization of the NFA

The NFA is composed of a board of directors, an ex-officio, and a bureau. The function of the board of directors is to plan and implement the economic and social activities of the NFA. There are 16 directors and they are selected from among the representatives of each SFA by election at a general meeting. There are three members of the ex-officio and its function is to give advice in matters pertaining to operation. Its members are the general manager of LKIM, the director of DOF, and the head of BPM.

The bureau is comprised of four commissions which are the commission on social welfare, the commission on investment and finance, the commission on aquaculture and offshore fishing, and the commission on fish production and marketing. They have the responsibility of reporting on the operations and financial affairs of the NFA, on the planned activities for the next session and its approval, and for the election of the board of directors.

Management and implementation of all NFA activities are the responsibilities of the manager who has been appointed by the chairman of the board of directors, and a staff member who has been recommended

by the manager and appointed by the chairman.

b) The structure and organization of SFA

SFA is managed by a board of directors, two commissions, and a general assembly. The board of directors is composed of ten members who are selected from among the representatives of each AFA by election at a general meeting. The functions of the board of directors are the same as that of the NFA.

The commission on economic affairs and the commission on social welfare are the two commissions in SFA which are responsible for planning the activities in these areas. The general assembly is composed of the elected representatives of each AFA. Its duties are to approve current and planned activities, and financial reports, in addition to overseeing the election which is held every two years, of members to the board of directors and the representatives to NFA. The SFA is run by a manager.

c) The structure and organization of the AFA

The AFA is composed of a board of directors, a bureau, and a general assembly. The board of directors is made up of ten members who are elected in a general assembly election. One member of the board of directors serves as the manager of the association. The manager participates in negotiations with the SFA, NFA, LKIM, etc. and is responsible for the management of the association. The directors are elected by association members.

At the meeting of the board of directors, decisions on operation are made. Regular meetings are held once a month and special meetings are held occasionally.

The bureau is under the board of director. Several of the directors are placed in various sections such as management, economic affairs, and health and social welfare.

The directors do not receive regular salaries. However, when they attend board of director meetings or undertake work for the organization, they are paid a daily remuneration. The amount of the remuneration differs according to the association.

The general assembly is made up of its respective members and it meets once a year from January to the end of March. At the general assembly session, progress on activities is given, and financial reports and operation plans are presented and approved. An election is held once every two years to elect its representatives to SFA.

The general assembly is the decision-making organ of the association. A session of the general assembly cannot be held without the participation of one-third of its members. A daily remuneration is paid to members who attend a session of the general assembly (the amount differs by association). The association is under the supervision of the chairman (of the board of directors) and specialized staff members are engaged under him. The central figure in management is the manager. In the larger associations, there is an assistant manager working under the manager. In addition, there is an accountant who is also an important figure in management. The manager and the accountant are equivalent to executives in a company.

The essential activities of the association are planned and managed under the manager. As shown in Table 4.8.1, many of the managers and assistant managers are LKIM staff members who have been dispatched to the association and their salaries are paid by LKIM. Many of the activities of the association are planned, supervised, and submitted to the board of directors and the general assembly. There are few plans proposed by the board of directors and it is the LKIM dispatched staff member who actually manages the association.

### 3) Problems in AFA management

Currently, the central figure in AFA management is the manager who is dispatched from LKIM. There are only 15 associations out of 61 which have managers from the private sector as of October 1990. Since the executive managers of the association are LKIM staff members, association members tend to see the association as a government agency. In actuality, many fishermen are under the mistaken belief that AFA is a part of LKIM. There are some fishermen who claim that they cannot drop into the AFA office in work clothes because it is a government office. In Japanese fishermen cooperatives, there are no government staff members working as specialized managers and accountants. They are all hired from the private sector.

In studying AFA net profits for 1989 shown in Table 4.8.2, the AFA which hired managers from the private sector have increased their net profits. For example, the number of AFA with a net profit exceeding M\$100,000 was six in 1989, and three of them had employed managers from the private sector. Moreover, in studying the AFA with a net profit of more than M\$50,000 annually, five out of 14 AFA, i.e. one-third, were AFA with private managers (Table 4.8.3).

Furthermore, in reviewing the 1988 and 1989 net profits of AFA with private managers as shown in Table 4.8.4, one AFA dropped its position in terms of profit ratio, one AFA showed no change, but 13 other AFA rose in terms of profit ratio. The AFA which has shown particularly conspicuous growth due to a private manager, is the Terengganu Selatan AFA. When a private manager was employed in 1988, the net profit of this AFA increased from M\$26,707 in 1987 to M\$45,103. In 1989 it increased sharply to M\$175,021.

As long as the fishermen continue to see the AFA as a part of LKIM, i.e. a government agency, this view will be an obstacle to AFA independence. In addition, since the LKIM staff members are transferred to other positions, they are unable to dedicate themselves to the management of one AFA. In consideration of these factors, it is believed that the AFA will improve with a manager from the private sector.

#### 4) Qualifications for AFA membership

In order to qualify for AFA membership, the applicant must be residing in the area, be over 18 years of age, and employed in the fishery sector. The AFA members are divided into the following four categories.

- 11(1)A Members who are engaged in catching, harvesting or the culture of aquatic organisms for a minimum period of 120 days in a year.
- 11(1)B Members who are engaged in fish processing or marketing.
- 11(1)C Members who derive 60 percent or more of their total income from fishery industry.
- 11(2) Members who conducts research or engaged in the development and improvement of the fishing industry.

Members in category 11(2) are unable to stand in elections for

directors and are treated as associate members.

Members of the AFA also include fish traders, processors, and other members affiliated to fishery. If members of different categories competing for profits begin to concentrate in one organization, the objectives and policies of that association will lose its clarity; and management will become difficult.

#### 5) AFA Membership Shares

All members are required to purchase AFA shares when they are admitted to the association. The price of one share is M\$5 and the minimum amount which must be purchased at the time of admission is one or two shares. It is believed that the underlying reason for the low price of the share is that many of the members are simple fishing laborers.

As shown in Table 4.8.5, in 1988 the total value of AFA share was about M\$523,600 which is approximately only M\$8,200 per AFA. Since the price of one AFA share is only M\$5, it is difficult to conduct AFA economic activities using these accumulated shares. Therefore, in order to foster the AFA, LKIM provided development funds (launching grant) in the amount of about M\$9,123,000 to AFA from 1977 to 1983, in addition to auxiliary funds (for telephone and office rental fees) in the amount of M\$129,000, for a total of about M\$9,252,000.

#### 6) Membership fees

An admission fee of M\$1 is required in order to become an AFA member and the annual membership fee is M\$1. In addition to this, members are required to pay M\$2 for the AFA social welfare insurance and for the death compensation insurance for members and their families.

These fees are not expensive for members and even by Malaysian economic standards, they are not a burdensome. Many of the members are simple fishing laborers and receive no other benefit from the AFA, except in the area of social welfare. From this viewpoint, the amount of these fees is appropriate. However, it is far too cheap for fishing boat owners and traders. The AFA members' share is very little and the profit for members is also little. This describes the current situation of the AFA in a nutshell.

7) Membership fees and shares of the NFA and SFA

Fifty percent of the annual membership fee of the AFA is paid to the SFA as membership fees. In turn, 20 percent of the membership fee collected by SFA is paid to the NFA as membership fees. Thus the annual membership fee of M\$1 paid by the AFA member is distributed as follows: AFA=M\$0.50, SFA=M\$0.30, NFA=M\$0.20. The cost of M\$5 for one share of AFA share is also distributed between the AFA, SFA, NFA according to the same ratio as the annual membership fee.

The SFA and NFA conduct their own economic activities and AFA members do not receive direct benefits from the profits generated from these activities. The system of member's fee and share described above (AFA to SFA to NFA) is disadvantageous for AFA members. Furthermore, this system depletes AFA funds for activities.

8) Cooperation between the NFA, SFA, AFA

The ties between these three organizations are maintained by the system where members of the lower organization are elected to the board of directors or are sent as representatives to the upper organization.

The sales of diesel oil, ice, fishing equipment, processed fish products, aquaculture, etc. are carried out utilizing this affiliation of NFA-SFA-AFA. In marketing diesel oil, the NFA has a contract to purchase oil from oil companies such as Shell and sells it through the SFA or directly supplies it to the AFA. In addition, revenue is generated from sales commission at each stage for each organization.

Ice manufactured at the NFA ice plant is supplied to SFA, and resold to AFA. As in the case of diesel oil, revenue is generated from sales commissions for the NFA, SFA and AFA. Processed fish and fishing gears are also sold through the NFA-SFA-AFA.

Due to this FA affiliation, the sale of diesel oil is expanding. However, the sale of ice has not been increasing since there are only two NFA ice plants in Chendering (Terengganu state) and in Perlis state.

The culture of shellfish is conducted independently by each FA.

However, from 1990 the SFA of Selangor state and the AFA of Kuala Selangor began a joint venture culturing shellfish. In addition to this, the NFA is substantially implementing the culture of shellfish in terms of investment, supervision, etc. in Selangor state. The NFA distributes five percent of their total profits to the SFA and AFA of Selangor state as a commission fee for aquaculture rights.

Although the NFA, SFA, and AFA have been involved in fishing activities, it is not desirable for the NFA and SFA to become truly involved in fish production, since it would compete with the fishing activities of the AFA and their members. The NFA and SFA should only provide or share the capital for fishing operations while the actual offshore fishing should be carried out by the AFA and their fishermen.

### (3) Composition of AFA Members

The following is the composition of the AFA members in the model areas of Peninsular Malaysia.

#### 1) The percentage of AFA members

As shown in Table 4.8.6, approximately 59 percent of the fishermen in the model areas of Kedah, Johor, and Terengganu states in Peninsular Malaysia were AFA members. Of the three states, Terengganu state had the highest ratio at 80 percent, followed by Kedah state at 57 percent, and Johor state at 43 percent. The areas which had the highest ratio of members were Terengganu Selatan with 97 percent, followed by Marang with 80 percent, and Endau in Johor state with the lowest at 30 percent. There is a tendency for the ratio to be higher in areas which have a high racial composition of Malay fishermen.

A high ratio of members in AFA is supposed to be beneficial in stimulating association activities. However, currently fishermen are able to carry on fishing activities without having to join the AFA. Moreover, there is no particular advantage in joining it. Many of the fishermen are simple laborers which makes it difficult to completely organize the area.

#### 2) The racial composition of AFA members

The racial composition of AFA members in the model areas of three states in Peninsular Malaysia is shown in Table 4.8.7, and about 86

percent of the members are Malays and 14 percent Chinese. The ratio of Malay members is overwhelmingly high. The racial composition of AFA members according to state is as follows: Kedah state is approximately 85 percent Malay, 15 percent Chinese; Johor state is 69 percent Malay, 31 percent Chinese; and Terengganu state is 99 percent Malay, 1 percent Chinese.

Terengganu state has the highest ratio of Malays and Johor state has a high ratio of Chinese (east coast). AFA members of Indian origin and others are rare.

### 3) Composition of AFA members according to category

According to category indicated in section (1),4) under qualification for AFA membership, the composition shown in Table 4.8.8, indicate about 80 percent of the AFA members fall into category 11(1)A in the three states of Peninsular Malaysia; eight percent are in category 11(1)B; nine percent are in category 11(1)C; and three percent are in category 11(2). The majority of the AFA members are full-time fishermen.

The members in category 11(1)A are the highest in Terengganu state at 85 percent and the lowest in Kedah state at 77 percent. Approximately eight percent of the members are in category 11(1)B, i.e. the traders, in the three states. Johor state has the highest ratio at 11 percent and Terengganu state has the lowest at six percent.

### 4) Future problems related to category of members

Categorizing members is important in terms of AFA structure because if there are members whose activities are in competition with AFA activities, there may be hindrance to the policies, direction, and activities of the AFA in future.

The ratio of full-time fishermen in the AFA is 80 percent. However, it also includes traders. According to a FA manager in Terengganu Utara, all ten members of the board of directors for 1989 fell into category 11(1)A. However, five of the ten directors were also traders. Although there is no conspicuous problems due to the present categorization of members, it may be necessary to study the appropriate categorization in order to develop mutual cooperative



consciousness of AFA members.

#### 4.8.2 A Summary of FA Activities

##### (1) Economic Activities of the NFA

The NFA economic activities are as follows.

###### 1) Sale of diesel oil

The NFA sells diesel oil to SFA and AFA. There are currently two marketing routes; diesel oil is sold to the AFA through SFA or it is directly sold from NFA to AFA.

In Penang Island, Johor, Kedah, and Perlis states, diesel oil is sold directly from NFA to AFA. In Terengganu, Kedah, Kelantan, and Selangor states, it is sold to the AFA through SFA.

###### 2) Sale of fishing nets and boat engines

Fishing nets and boat engines are sold to fishermen either through the SFA or AFA.

###### 3) Operation of the Chendering ice plant

The Chendering ice plant (220 tons/day) was turned over to NFA management from LKIM in April 1987. The NFA currently pays M\$8,500 per month to LKIM for the lease of the plant. In addition, an annual commission of up to 10 percent is paid to the Terengganu SFA.

###### 4) Operation of the Perlis ice plant

The machinery and equipment of the Perlis ice plant (50 tons/day) are 16 years old and its productivity has fallen. It is unable to compete effectively with other ice plants in the private sector and has been running at a deficit since 1987.

###### 5) Culture of cockles in Perak state

The culture of cockles was started in September 1986 in a 500 acre of the coastal area.

###### 6) Culture of cockles in Kuala Selangor

The culture of cockles was begun in 1986 in a 1000 acre of the

coastal area.

7) The main agent for boat and crew insurance

Insurance on fishing boats began in 1987 in cooperation with Malaysia British Assurance (MBA). The NFA and AFA are agents for MBA, and each organization receives five and ten percent commission, respectively of the premium.

According to DOF regulations, crew insurance is mandatory for all crew members since 1986. This insurance will pay crew members M\$5,000 to M\$50,000 in the event of an accident. The NFA is the agent for both MBA and Mercantile Insurance Sendirian (MIS). Each AFA is the sub-agent of NFA. In return, the AFA and NFA receive ten and five percent commission, respectively, of the premium. As of 1989, 8,646 fishing boats and 25,739 crew members are covered by insurance.

8) Sale of plastic boxes for imported fish

The sale of plastic boxes for imported fish from Thailand started in 1988. These boxes are utilized by importers and exporters. The NFA leases these boxes to exporters for M\$1.20 per box for three days. They are also sold to users in the rural areas.

9) Production and retail of processed fish

The NFA produces and markets fish crackers and processed fish and squid delicacies. Fish crackers are exported to Great Britain, Dubai, Hong Kong, Australia, Korea, Papua New Guinea, Brunei, and Taiwan. However, with the exception of Taiwan, they are still in the preliminary stages of export. Retail of fish crackers is also expanding domestically in rural areas. In addition, processing of smoked fish was started in August 1989 and they have begun selling in the rural area markets and in Malaysian Airlines.

10) Sale of fresh fish

As of April 1990, the NFA opened a store within the Kuala Lumpur wholesale market and has started to sell fresh fish purchased from the AFA. The participating AFA are the Kuala Kedah FA, Perlis Utara FA, Terengganu Selatan FA, Kuala Besut FA, Endau FA, Tumpat FA, etc. This enterprise recorded a net profit of M\$1,592 in May, M\$516 in June, and M\$434 in July.

In addition, the NFA has secured a contract to provide 15 tons of fresh fish monthly to the three military camps in Negri Sembilan and Melaka. Plans to expand this enterprise to include military camps in other states are in the process.

11) Fishing operations by large fishing boats

The NFA has purchased Thai boats which were seized on charges of violating fishing grounds and has leased them to the private sector for offshore fishing operations. Currently, the NFA has licenses for 12 large fishing boats. Of these 12 boats, four are presently engaged in fishing operations. The NFA has paid the registration fees, fishing license fees, etc. for the four boats, but has, in actuality, leased them to a private company. The lease for all four boats totals M\$5,600 per month.

12) Trends in NFA net profits

Trends in NFA net profits for the past four years are given below.

1986	M\$	9,196
1987	M\$	607,043
1988	M\$	588,168
1989	M\$	1,780,000

Although net profits came to a standstill in 1988, it has steadily increased in the past four years. Total NFA net profit from its economic activities and a breakdown showing the profit ratio of each activity is shown in Table 4.8.9. In 1988 profits generated from the sale of diesel oil was 70 percent of the total NFA net profit, followed by the sale of ice at 32 percent, and shellfish culture at 27 percent. These are the three main NFA economic enterprises.

Revenues generated from the sale of fishing gears is less than the previous year and indicates a decrease in retail activities at the AFA level. The sale and lease of plastic boxes is running at a great loss and is financially burdensome for the NFA.

(2) Economic Activities of the SFA

Currently, SFA have been established and are active in 11 states, with the exception of Sabah state. There are four SFA operating in

model areas.

## 1) General outlook of SFA Economic Activities

There is a variety of economic activities which are being conducted by each SFA. An economic activity common to all SFA is the sale of diesel oil, followed by the sale of fishing gears and plastic boxes of NFA.

The trends in the economic activities of the 11 SFA for 1988 and 1989 are shown below.

### Trends in the Economic Activities of the 11 SFA

	Revenue (M\$)	Sales Cost (M\$)	Admin. Cost (M\$)	Profit/Loss (M\$)
1988	4,517,764	3,991,593	368,148	158,024
1989	6,902,664	6,426,168	378,669	98,458

Remarks: The data for 1988 do not include the Sarawak SFA due to unavailability of data.

Source: NFA Financial Data Sheet

As can be seen from these figures, the profits generated by SFA activities are low.

The overall net profit of SFA in 1989 fell 62 percent from the net profit of the previous year. SFA revenues have decreased drastically, even though data on SFA in Pahang state is unavailable. Although the total sales figure has increased at an annual growth rate of 150 percent in comparison to the previous year, the main reason for the substantial decrease in profits is the large increase in marketing costs.

## 2) Composition of SFA economic activities

The major revenue generating SFA activities in 1988 were the sale of diesel oil, cockles, and cockle seeds. The sale of fresh fish, fishing gears, fish culture, etc. were all running at a loss.

The major revenue generating SFA activity in 1989 was the sale of diesel oil. Activities in management and fish trawling (SFA Perlis) showed a loss.

### 3) Characteristics of SFA in model areas (Peninsular Malaysia)

The characteristics of SFA economic activities in model areas are as follows.

- a) The major revenue generating activity for all SFA is the sale of diesel oil. In addition, work contracted from DOF, LKIM, and local governments is another principle activity.
- b) SFA does not actually operate its own business activities. Its source of revenue is commissions from business activities which they pass along to the AFA from NFA or from local governments.
- c) SFA is also directly involved in non-fishery related activities.
- d) Revenue from economic activities is low for all SFA.

### (3) Economic Activities of the AFA

#### 1) Composition of economic activities of the AFA

The economic activities of the AFA in Malaysia are given as follows.

##### a) Sale of gasoline, cylinder and diesel oil for fishing boats

The fuel procured by NFA is purchased by the AFA either directly from NFA or through the SFA. The fuel is then sold to AFA members or to private shops. This is the main economic activity of the associations in Malaysia.

##### b) Sale of ice

Ice produced by NFA ice plants is purchased by AFA either directly from NFA or through SFA. It is in turn sold to AFA members. Some AFA purchase ice from private ice plants for sale to its members.

##### c) Marketing of fish

Fish catch of some members is marketed through the AFA. Fish is sold either at the auction or by direct consignment. The auctioneers are AFA members who conduct the auction and the association charges a five percent commission. Two percent of this commission goes to LKIM and the remaining three percent goes to the association.

Among the members of the Terengganu Selatan FA, there is a wholesaler (daganan) who in conjunction with many other production area wholesalers, purchases the fish catch from fishing boats and sells it to production area retailers and consumption area wholesalers in Singapore, Johor Bahru, and Kuala Lumpur.

However, a marketing contract does not exist between the AFA and its members for their fish catch, and as a result most of the AFA participates in the auction as only the auctioneer. Thus a joint marketing system between the association and its members as seen in Japanese fishermen associations does not exist.

d) Fish transport activities

Ice, fishing equipment, and fish are transported by AFA owned trucks. Moreover, there are some AFA which generate revenue by leasing their trucks to the private sector. An unique example is the Kuala Kedah FA which transports diesel oil using their own oil tank lorry.

The Endau and Mersing FAs take orders from their members and middlemen to transport fish to Johor, Kuala Lumpur, and Singapore. The fees for transport and the use of transport boxes is a source of revenue for them.

e) Sale of fishing gears

AFA purchase fishing gears from the NFA and in turn, sell them to their members. This enterprise is conducted by only a few AFA. Some associations have given up this activity due to competition from the private sector or payment default by their members.

f) Aquaculture

The culture of fish and shellfish is conducted. Fish cage culture is carried out by Tanjung Dawai AFA.

g) Sub-contracted work

Sub-contracted work carried out by AFA includes maintenance of local government buildings, LKIM facilities, and the construction of artificial reefs for DOF and local governments. Normally, this type of work is sub-contracted out to the AFA through the SFA.

#### h) Other activities

Some FAs are engaged in raising livestock (goats and ducks) and processing of cuttlefish.

#### 2) Trends in AFA net profits and sales

In studying the trends in net profits and proceeds of marketing activities for 61 AFA throughout Malaysia from 1987 to 1989 as shown in Table 4.8.10, the annual growth rates of sales and net profits was 137 and 169 percent, and 140 and 146 percent, respectively. This indicates that the economic activities of AFA throughout Malaysia are developing.

The sale of diesel oil comprises a high ratio of the net profits generated by AFA activities as shown in Table 4.8.11. It was 61 percent in 1987, 58 percent in 1988, and 56 percent in 1989.

In addition, the oil transport business are also contributing to increases in net profits. Their ratio of the net profits has been increasing yearly and was about seven percent in 1987, 21 percent in 1988, and 16 percent in 1989. However, the oil transport business are operated only by the Kuala Kedah FA; therefore, the increase in net profit from this source is limited to only this FA. The net profits generated by the oil transport business of only one AFA comprises 16 percent of the total net profit of all the AFA in Malaysia. This is an indication that the economic activities of other AFA are still limited.

Among the AFA, the growth in profit exhibited by the Kuala Kedah FA, Kuala Perlis FA, Endau FA, and Terengganu FA has contributed to an improvement in overall profits.

Approximately 11 percent of the AFA are operating at a loss. These AFA characteristically exhibit deficits in the area of management and operation. In addition, they are engaged in only a limited number of business activities and in particular, most of them are not engaged in the sale of diesel oil.

#### (4) Issues on Fishing Rights

In Malaysia the AFA do not have the area fishing rights which

would enable them to protect, and manage the fishing grounds in its area. Whereas the Area Fisheries Cooperatives (AFC) in Japan have the fishing right in the coastal area in front of their residential area

The ownership of fishing rights and resource management of their own water area by AFC in Japan is summarized below.

- Fishing right is provided from the governor of local government to AFC according to the Fisheries Law. This right is "the water area ownership" which is similar to "land ownership".
- AFC has an absolute and exclusive power for the use of this water area ownership.
- Only the members of AFC are able to do fishing within this area of AFC's ownership.

In Malaysia it is difficult for the AFA to establish a developed system of coastal fishing rights and resource management as seen in Japan for the following reasons.

- Mutual understandings for the protection of the water area among the residential fishermen have been formed for more than 200 years in Japan.
- There are abundant non-migratory fish species in the coastal area in Japan, but significantly less of these species inhabit the coastal waters in Malaysia. Therefore boat fishing for migratory fish species has developed in Malaysia.
- Fishing villages are located at the coastal area in Japan, whereas in Malaysia they are located inland along the rivers away from the coastline. Therefore, the consciousness to protect fishing grounds has not developed.

#### **4.8.3 Economic Activities of AFA in Model Areas of Peninsular Malaysia**

##### **(1) Outline of the Activities**



The economic activities undertaken by the AFA in the model areas of Kedah, Johor, and Terengganu states are given as follows:

Economic Activities Undertaken by the AFA in Model Areas

	Kedah			Johor			Terengganu		Total
	KK	YAN	TD	KS	MRS	END	KTS	MRN	
Diesel oil	0	0	0	0	0	0	0	0	8
Ice	0	X	0	X	X	0	0	0	5
Auction	0	X	0	0	x	0	0	X	4
Direct consignment	X	0	X	X	x	0	0	X	3
Transport	0	X	X	X	0	0	0	0	5
Fishing gear	X	X	X	X	X	X	0	0	2
Cockle culture	X	0	0	X	X	X	X	X	1
Fish culture	X	X	0	X	X	X	X	X	1
Fishing	X	X	X	X	X	0	X	X	1
Processing	X	X	X	X	X	X	X	X	0
Oil transport	0	X	X	X	X	X	X	X	1
Contract works	0	0	0	0	0	0	0	0	8
Total	6	3	6	3	3	7	7	5	39

Remarks: KK = Kuala Kedah FA, TD = Tanjung Dawai FA;  
 KS = Kuala Sedili FA; MRS = Mersing FA; END = Endau FA;  
 KTS = Terengganu Selatan FA and MRN = Marang FA  
 0 = existing; X = not existing

Central to the economic activities of the association is their ability to offer their members a variety of services which include the marketing of their fish catch under advantageous conditions, and goods at inexpensive prices through planned stock management.

In observing nine AFA in the model areas, eight AFA are engaged in the sale of diesel oil, five AFA are engaged in the sale of ice, six AFA are conducting auctions, five AFA are engaged in transport activities, two AFA are marketing fishing gears, one AFA is culturing fish/shellfish, and none of the FA are engaged in processing.

Despite the fact that the sale of diesel oil, ice and fish is a basic AFA service for members, only five AFA out of eight are engaged in all three activities. In a breakdown of these AFA activities according to state, Johor state has the least number of activities, as exemplified by Mersing FA which is engaged in only the sale of diesel oil.

Independent AFA activities include fishing, processing, and fish culture. Only one AFA is engaged in fish culture, one AFA in offshore fishing, and none of the AFA is engaged in processing. Independent FA activities such as these tend to compete with the livelihood of local fishermen and must be undertaken with care. However, in order to stimulate AFA economic activities, it is necessary to incorporate highly feasible activities such as fishing operations by large boats.

The net profit by AFA activities in 1988 is shown in Table 4.8.12.

The profit ratio of diesel oil sales is overwhelmingly high and averages 66 percent of the total profit generated by activities of nine associations.

The profit ratio of ice sales is low, with the exception of Terengganu Selatan FA where the profit ratio is 31 percent. The sale of ice should be promoted.

Terengganu Selatan FA and Tanjung Dawai FA show a high profit ratio in the sale of fresh fish. Other AFA are not engaged in marketing of fresh fish and their profit ratio is low. This fact reflects limited FA participation in fish distribution.

An important basic function of the AFA is to market the fish catch of its members. In view of this fact, it is necessary to encourage active AFA participation in this endeavor.

In addition, the fact that diesel oil sales comprise a large part of AFA revenues, is significant of an economic imbalance in the AFA activities. A more balanced management of AFA activities is desirable. The sale of fishing equipment and transport activities are running at a loss for many of the AFA. Efforts to improve management and operation are necessary.

## (2) The AFA's Revenue Per Member

The amount of revenue and net profit per member are given in Tables 4.8.13 and 4.8.14. In 1988 and 1989, revenue per member was the highest in the AFA of Kedah state and the lowest in Terengganu

state. In 1989 both states improved their record of the previous year. In Terengganu state the revenue per member increased by two folds. This phenomenon indicates an increase in member utilization of FA services and a somewhat optimistic outlook for future development is presented.

In 1988 and 1989, the amount spent by each member on services provided by FA activities was the highest in the Endau FA and Kuala Kedah FA. This amount was particularly high in the Endau FA. Although the number of members in the Endau FA is low, there are many large fishing boats and the amount spent on diesel oil per boat is high. In addition, the number of boats using FA diesel oil is high. Each FA has shown an increase of 1.5 to 3 times in revenues generated from member utilization of FA activities, with the exception of Tanjung Dawai FA, Yan FA, and Terengganu Utara FA.

### (3) The Net Profit and Sales Revenue of Each AFA Staff Member

The net profit and sales revenue per AFA staff member in 1989 are given in Table 4.8.15. If the average annual income of an AFA staff member is set at M\$6,500, (1988 budget of the Terengganu Selatan FA), it means that each staff member in Kedah will generate a net profit of 1.9 times his income, a staff member in Johor will generate about 1.3 times his income, and a staff member in Terengganu state will generate about 1.2 times his income.

The amount of net profit a staff member in Kedah state will generate is nearly equivalent to the amount a cooperative staff member in Japan will earn. However, it is extremely low in Johor and Kedah states.

In analyzing this situation according to AFA, the net profit generated by each staff member in the Kuala Kedah FA, Endau FA, and Terengganu Selatan FA is approximately 2.7, 2.0, and 1.9 times his annual income, respectively, and is on a par with cooperative staff members in Japan. However, staff members in other FA have not generated net profits surpassing their annual income.

This is due to the fact that the number of personnel has not been allocated efficiently corresponding to the revenue and quantity of

sales generated, the low work efficiency of each staff member, and the low profits of the FA activities.

An economization in labor, an increase in work efficiency of each staff member, and appropriate allocation of personnel is necessary. If appropriate allocation of personnel has been carried out, it is necessary to re-examine the profit margin ratio of each FA activity or to curtail those activities running at a loss.

(4) The Number of Fishing Boats Utilizing AFA Diesel Oil

The sale of diesel oil is the highest profit generating activity for all AFA. However, as of March 1990, the percentage of fishing boats utilizing AFA diesel oil in the model areas is as low as 16 percent.

The price of diesel oil sold by the Kuala Kedah FA and the price of diesel oil sold by private jetties with fueling facilities is the same. In other areas, the AFA price is somewhat cheaper. Despite this fact, the utilization rate of AFA diesel oil by fishermen is low.

The following reasons were given by FA members who did not purchase diesel oil sold by the association.

- a) Diesel oil is also supplied by the wholesaler who purchases their fish catch.
- b) The AFA jetty (owned by LKIM) is narrow, congested, and fueling is time-consuming.
- c) Diesel oil is not sold when they need to refuel their boats.
- d) AFA does not accept credit.

It is convenient for fishermen to refuel their boats at a jetty where their fish catch is purchased and there is no added inconvenience of moving their fishing boats just to refuel. In addition, cost of diesel oil can be deducted from the sale of the fish catch. Furthermore, AFA jetties are narrow and crowded. As a result, the sale of AFA diesel oil is hindered by the long established business relationships between the fishermen and the wholesalers.

However, if credit is accepted in the sale of diesel oil as in

the Endau FA, the purchase rate by members sharply increases. In addition to introducing a credit system, it is also necessary to expand AFA jetties and to improve the capacity of the fueling pump in order to increase member utilization of FA services.

(5) The Number of Fishing Boats Utilizing AFA Fish Marketing Activities

AFA fish marketing activities are conducted at the LKIM complexes. The main job of the AFA in the auctions is to work as auctioneers. Their revenue intake at the auction is three percent of the final bid on the fish sold. This commission is paid by the final buyer at the auction and not by the fishermen. It differs from Japanese auctions in this respect. In addition, a contract for direct consignments signed between the fishermen and AFA does not exist.

However, the staff members of the Terengganu Selatan FA at the Pulau Kambing complex act as wholesalers and directly purchase fish from fishing boats, carry out direct consignments, and market fish to retailers along with the private wholesalers.

Despite these activities, the overall utilization rate of AFA fish marketing activities by its members in the model areas is the highest at Endau FA at 17 percent. However, the average utilization rate is low at nine percent.

One of the reasons for not using the AFA auction at the LKIM complexes by fishermen is the long established ties between the wholesalers and the fishermen. These long standing relationships are based on the borrowing and lending of capital for fishing operations. The wholesaler will lend the fishermen capital with the understanding that some of their fish catch will be sold to him.

Large fishing boats divide and sell their fish catch to various wholesalers according to the grade of fish, regardless of whether capital has been borrowed or not.

Small fishing boats usually sell their fish catch directly to the local wholesalers and retailers. Fishermen of small fishing boats are also obligated to sell their fish catch to the wholesaler who has provided the capital, but they do not necessarily have to turn over

the total fish catch. However, the entire fish catch is usually sold to them when it is small.

A relationship based on trust is an important factor in fish transactions between the fishermen and wholesalers, regardless of whether capital has been borrowed. Therefore, fishermen usually sell their fish catch to one particular wholesaler.

The capital required for fishing operations is not very large and fishermen are not fettered to wholesalers by their loans, as is commonly believed. To the contrary, wholesalers actively maintain relationships with fishermen by lending capital in order to collect fish.

In an interview survey of fishermen in Mersing, it was discovered that wholesalers purchase fish at the same price from both fishermen who have borrowed capital and those who have not.

In consideration of the aforementioned facts, the major reason fishermen do not utilize AFA auctions is due to long established relationships with wholesalers. Other reasons are as follows.

Firstly, the auction is still fairly new and is not firmly established. Secondly, the number of wholesalers is limited at auctions in geographically remote areas. Thirdly, the complexes are far and it's simpler for fishermen to sell their fish to local wholesalers. Fourthly, the fish handled at the auction is low grade fish and is not very attractive to wholesalers.

In conclusion, it will take many more years before the auctions at the complexes become firmly established.

Number of Fishing Boats Marketing their Catch through AFA (1990)

	Number of boats within the area	Number of boats marketing fish	%
Kuala Kedah FA	912	93	10
Yan FA	243	27	11
Tanjung Dawai FA	321	20	6
Kuala Sedili FA	284	26	9
Endau FA	242	40	17
K.Terengganu Selatan	395	12	3
	2,397	218	9

Source: Interview survey of AFA managers (1990)

(6) FA capital loans

One of the objectives of the FA in Malaysia is to loan capital for fish production to their members. There were only five out of seven AFA which provided capital loans. Short term credit, which is extended to fishing boats for diesel oil by the Endau FA, has increased member utilization of FA diesel oil and has also helped fishermen's production activities.

A common FA stipulation in exchange for capital loans, is that fishermen sell their fish catch through the FA. For example, the Tanjung Dawai FA requires that members save five percent of their production sales with the FA and using these savings as collateral, offers capital loans to its members. The loans are recovered by deducting the amount from the sale of the fish catch handled by the AFA.

Although providing capital loans is an important FA service which assists the production activities of its members, it is currently voluntarily carried out by each AFA. Therefore small loans are not sufficient.

Provision of Funds According to FA

FA	Loan Amount (M\$/person)	Conditions	Number of Recipients
Kuala Kedah	Max. 8,000	Sales of fish through FA, no interest but repayment by 10% of sales	58
Yan	Max. 500	Sales through FA and 5% interest	38
Tanjung Dawai	Max. 2,000	Fish sales through FA	-
Kuala Sedili	x	x	x
Mersing	x	x	x
Endau	o	Limited to oil sales	120
K. Terengganu Selatan	o	Fish sales through FA	12

Remarks: o = Loans disbursed but details are not available.

x = No loan disbursed.

Based on interview survey of AFA managers (1990)

(7) Pilot Project on BPM Revolving Fund for Fisheries

BPM and AFA are planning a joint pilot project which will enable fishermen to borrow capital from an AFA revolving fund in future. An outline of this pilot project is given below.

- a) Project participants : Fishing boat owners and their crew
- b) Administrator : AFA
- c) Applicant qualification : Fishermen who market their fish through AFA
- d) Ceiling on loans : Up to M\$20,000 or two times the average monthly production sales
- e) Collateral : Fishing boats

Eligible applicants are boat owners who market their fish through AFA or their crew members. The amount of the loan is automatically decided according to the applicant's highest production sale of that year (or average monthly income in the case of crew members). Applicants are required to open an account with the AFA and deposit their earnings from their fish sales into the account. The loans are automatically deducted from this account. However, these loans have no time limit and are automatically deducted from members' accounts until they are recovered. The fishermen are then eligible to borrow loans again. A small commission is collected by AFA from fishermen when a loan is given.

In 1991 BPM introduced this system to the Terengganu Selatan FA as a pilot project. Management and feasibility of the system are being studied, and depending on its success, the system will be introduced to other AFA.

(8) AFA Social Welfare Activities

FA social welfare activities are divided into the following categories.

- 1) Educational support for fishermen and their children
- 2) Social welfare services for wives and children of fishermen
- 3) Social insurance



1) Educational support for fishermen and their children

a) Social Education Fund

FA provides temporary relief for children of members who are in poverty. Members are required to pay M\$2 annually in order to be eligible for this service. The nature of this assistance differs according to each FA. For example, the Yan FA provides school uniforms, commuting bus fares, school tuition, and boarding for newly matriculating children of its members. These funds are pooled from LKIM and FA member donations (LKIM donates M\$1 for every M\$1 donated by fishermen). The funds are deposited in a long-term account and utilized.

b) Guidance and training in fishing techniques

Guidance and training in fishing method, fishing gear, processing technology, etc. are conducted by LKIM and DOF. There are also some services provided for preparation of application for loans or licenses.

2) Social welfare activities

a) Death compensation for fisherman's family

Compensation in the amount of M\$200 is paid in the death of a fishermen or his wife and M\$100 is paid for the death of a child. Members eligible for this compensation pay an annual fee of M\$2.

b) Financial aid for disaster victims

Financial aid is available for fishermen who are victims of disasters due to natural causes or strife.

c) Mutual aid activities (Gotong royong)

Meeting halls, stalls for fish and shellfish, jetties, and religious halls are constructed by the fishermen themselves. The funds to purchase materials are provided by LKIM, and the AFA is responsible for purchasing the materials and providing them to the fishermen.

3) Insurance business

a) Crew insurance

Crew insurance is mandatory for fishing boat owners and their crew (stipulated by DOF). Fishing boat licenses are not granted if

the owner and crew are not covered by crew insurance. NFA is the chief agent for both MBS and MIC insurance companies and AFA is their acting sub-agent.

Insurance premiums are paid by the boat owner and annual premiums for one crew member ranges from M\$10 to M\$50. Each crew member is insured for M\$5,000 to M\$50,000.

b) Insurance against damages and losses

This insurance covers destruction of fishing boats due to natural disasters and accidents at sea and loss of fishing gears at sea. NFA is the chief agent for MBS and AFA is its sub-agent.

c) Takaful Insurance

This is an optional insurance policy against natural disasters which is offered by LKIM and Syarikat Takaful (M) Bhd. The annual premium is M\$5 and maximum coverage is M\$1,500.

The various social welfare services which are provided by FA are effective in deepening fishermen's understanding and cooperation toward the FA. It is desirable that fishermen participation rate in FA activities is accelerated by reinforcing FA social services, upgrading their social and economic education, and fostering a cooperative spirit among FA members by constructing jetties, meeting halls, and other fishery related facilities by gotong royong.

Donations by FA to mosques and other religious facilities should be carried out fairly, irrespective of religion.

#### **4.8.4 The Fishermen's Association in Sarawak**

(1) An Outline of the SFA

The only Fishermen Association in Kuching, the model area of Sarawak state, is the SFA. The Sarawak SFA was established in 1985 and it has a total of ten AFA. There are approximately 12,600 fishermen within the state in 1988. In 1987 the number of AFA members was 4,168 (about 33 percent of the fishermen in the state); and in 1989 there were 4,531 members (about 36 percent). SFA activities in

Sarawak are as follows.

1) Marketing of fresh fish

The SFA markets fresh fish to three schools in the city and to two state government facilities. This enterprise is conducted jointly with a Bumiputra company. Sarawak SFA receives commission on 30 percent of the supply at M\$0.20 per kg.

2) Sale of fishing equipment

The SFA sells fishing equipment supplied by NFA.

3) Marketing of processed fish products

The SFA markets fish delicacies supplied by NFA.

(2) Conditions of Fishermen

There are 1,823 fishermen in Kuching City; comprised of 1,738 full time and 95 part-time fishermen. Of this total, there are 513 Malays, 1,006 Chinese, and 219 Dayak fishermen.

There is a fishing village of 705 Chinese fishermen specializing in gill net fishing near the Bintawa complex. All of these fishermen sell their fish to Chinese wholesalers and do not land their fish catch at the complex.

#### 4.8.5 The Fishermen's Association in Sabah

There are currently 18,658 fishermen engaged in the fishing industry in Sabah state as of February 1990. Of this number, about 57 percent are Bumiputra and the remainder are Chinese (about 10%), Filipinos, and Indonesians.

Fishermen who are involved in gill net fishing comprise the majority, followed by trawling, and hook and line fishing. There is very little fishing by purse seine and the scale of the fishing industry is generally traditional.

The AFA has not been established as an organization for fishermen in Sabah state yet. However, the KO-NELAYAN under the jurisdiction of the Ministry of Agriculture in Sabah state has begun preparations from March

1990 to establish an AFA to organize the fishermen in the state according to the Malaysian Fisherman's Association Act. Plans are currently being implemented.

(1) KO-NELAYAN

The functions of KO-NELAYAN under the enactment and its amendments are given below.

- 1) To undertake projects in fisheries and aquaculture
- 2) To promote the economy of the fishing villages
- 3) To establish fisheries projects independently or jointly with public or private companies and fishermen
- 4) To undertake processing and marketing of fish (including exports)
- 5) To provide transport services and financial assistance
- 6) To establish an agency to market fish products
- 7) To implement the environmental improvement and the other social program
- 8) To promote social and economic development of the fishermen's association within the state

KO-NELAYAN in accordance to the objectives listed above, established the export agency SAFMA, the ANGKASA for the fish processing industry, and has provided loans to individual fishermen for the construction of a fishing vessel or engine, or the purchase of fishing equipment. From 1978 to 1983, it has provided loans to more than 4,000 fishermen.

(2) KO-NELAYAN and Its Plan to Establish a Fishermen's Association

According to the KO-NELAYAN Amendment Act of 1988, KO-NELAYAN was given the responsibility of assisting and promoting the social and economic development of the fishermen's associations in the state and to oversee their registration, management, supervision, and all other related matters.

Subsequently, in order to organize an AFA in Sabah state, KO-NELAYAN has instituted and pursued the following program since 1986.

- 1) KO-NELAYAN plan to establish Fishermen's Associations.

The objectives of this plan is to establish fishermen's associations, to oversee their registration, and to ensure its long term success. The plan is to establish associations in 14 regions in Sabah state from 1989 to 1990 (Kudat, Kota Belud, Tuaran, Kota Kinabalu, Papar, Beaufort, Sipitang, Kuala Penyu, Beluran, Sandakan, Kinabangan, Lahad Datu, Tawau, Semporna) and to provide technical and economic assistance.

a) The creation of a KO-NELAYAN Fishermen's Association Network (KFAN)

KO-NELAYAN established the KFAN in order to institute its plan.

The duties of the KFAN are as follows.

- To discuss AFA regional limits with fishermen
- To seek support from fishermen groups to prepare for AFA registration
- To manage KO-NELAYAN's financial support to AFA
- To control grant payments from KO-NELAYAN to AFA or its agents
- To arbitrate and supervise all development funds from KO-NELAYAN to AFA
- To supervise the construction of the facility for AFA profit
- To provide technical advice to AFA
- To monitor and evaluate the finances and operation of the AFA after a period of every four and a half months
- To support the program and project of AFA

b) AFA development funds

KO-NELAYAN will prepare development funds for AFA which have registered. In addition to funds for land costs, the construction of access roads, electricity and water facilities, jetty, repair workshop, car, plant and related equipment, underground tank (for oil), office furniture, office equipment, etc., these development funds will be provided from reserve funds.

c) Operating Funds

KO-NELAYAN will provide each association with initial operating funds one time.

d) Work which will be carried out by AFA are the following.

- Purchase and retail of marine products

The association will construct a landing site for marine products. KO-NELAYAN anticipates the buyers of the association's marine products will be SAFMA and other agents. The association will receive a five percent sales commission.

- Sale of ice

The association will sell ice to its members. In some cases, ice will be manufactured by the association. The association will receive five percent of the wholesale price.

- Sale of fuel

The association will sell diesel oil and gasoline. The retail price will be 10 percent higher than the wholesale price.

- Spare parts and repair workshop

Each association will sell fishing gears and the spare parts for engines, etc. and will set up a repair shop.

2) The progress in KO-NELAYAN's plan to establish AFA

There have been a few changes in the initial preparation plan by KO-NELAYAN to establish AFA as of March 1990.

According to this initial plan, 14 AFA were to start operations in 1990. However, it has not been realized as of March 1990 and the plan was revised to six AFA in Beaufort, Kuala Penyu, Kota Kinabalu, Kinabatangan, and Lahad Datu by the end of 1990. AFA in Kota Belud, Semporna, Labak Sungat are scheduled to begin operations in 1991, Tawau in 1992, and Sandakan in 1993.

3) Preparations for AFA in Kudat

There are 16 fishing villages in the Kudat region and 472 fishermen. 239 of these fishermen are of Bajawa extraction, one Chinese, two Malays, and the remainder are Indonesians of Bugis background and Filipinos who have filtered into the area.

KO-NELAYAN has supported the creation of an AFA in the Kudat region and a preparation committee and chairman has already been elected. There are 157 fishermen participating in this preparation committee as of April 1990.

Enterprises such as the sale of diesel oil and ice, the purchase of fish and shrimp, the sale of fishing equipment, operation of a fish and keropok processing plant, and slipway are being studied as possible projects for the association. Preparation for AFA registration is currently underway.

KO-NELAYAN encourages and expects self-reliance on the part of the fishermen of the AFA in Sabah state.

4) Opinion of Kudat fishermen on AFA formation

In interviews with the fishermen of Kudat, it became apparent that many were not free to sell their fish because the catch was used as payment in advance to the middle-man. The fishermen generally were forced into this situation due to breakdown of fishing boat engines. The underlying cause is the inferior quality of the engine, which in many cases have been manufactured in Taiwan and breaks down frequently. Spare parts are also expensive. Furthermore, the retail of spare parts as well as the repair workshop are in the hands of the middlemen. In payment for spare parts and work done on the engine, the fishermen have no choice but to accept the terms of payment in advance, resulting in their loss of freedom to sell their fish.

All ten fishermen interviewed, greatly looked forward to the early establishment of the AFA. If AFA were to market the fish that members sell to the association, repair work on engines could be done with the funds derived from this sale, which would in turn end the middleman's hold on the fishermen. Expectations of the AFA are high.

According to a KO-NELAYAN plan, six AFA were to have been established on the west coast of Sabah state by the end of 1990. However, as of September 1990, the plan has not been implemented due to difficulties between LKIM and the government in Peninsular Malaysia with regard to registration procedures, AFA management, operation, and supervision.

The activities of the AFA established by KO-NEYLAYAN will not differ from AFA activities in Peninsular Malaysia.

One activity which is carried out by only a few AFA in Peninsular Malaysia is the provision of loans to fishermen by AFA. Providing a revolving fund for fisherman is an important AFA function. According to

the interview survey of fishermen, fishermen have high expectations of AFA to market their fish catch and to provide a revolving fund. Therefore, it is desirable that AFA establish an overdraft system and loan services soon.

In addition, social welfare activities are not a programmed part of AFA activities. It is desirable that in conjunction with fishing boat insurance and insurance against natural disasters, a variety of services which will ensure stability in production and in the livelihood of fishermen is instituted.

AFA in Peninsular Malaysia is suffering from economic woes due to a lack of positive cooperation and participation by fishermen. However, in Sabah state fishermen are actively expressing high hopes for the AFA. As long as the AFA which is established does not betray these expectations, active participation and cooperation by fishermen is anticipated.

Furthermore, KO-NELAYAN is planning an AFA which will be managed and operated by the fishermen themselves. If this is successfully achieved, the AFA in Sabah will become a role model for AFA in Peninsular Malaysia.

Fishermen in various areas of Sabah state actively desire an early establishment of AFA. By establishing an AFA when the need is the greatest, will ensure aggressive cooperation by fishermen and will contribute to the future success of the AFA in Sabah state.



**Table 4.8.1 LKIM Officers Seconded to AFA (1988)**

Type of Job	Number of person
Manager	27
Acting Manager	31
Development Assistants	69
Accounts Assistants	57
Speedboat Drivers	4
Apprentice	1
<b>Total</b>	<b>189</b>

Source: A Survey of Fishermen's Associations  
in Tumpat and Tanjung Dawai, 1988 FAO

Table 4.8.2 List of AFA in Order of Net Profit (1988 &amp; 1989)

Order	Private Manager	Name of AFA	Net Profit (M\$)	
			1989	1988
1	○	Kuala Kedah	555,963	394,876
2		Kuala Perlis	290,810	84,937
3		Endau	247,776	182,142
4	○	Kuala Trengganu Selatan	175,021	45,103
5		Besut	120,006	62,049
6	○	Tanjung Dawai	102,989	97,081
7		Seburang Prai	96,921	172,658
8		Mersing	90,256	47,968
9		Batu Pahat	85,476	68,038
10		Sungai Besar	79,760	15,050
11	○	Pulau Pinang Selatan	76,188	24,862
12		Rompin	71,238	38,717
13	○	Karang	52,227	16,453
14	○	Pulau Langkawi	49,743	-20,772
15	○	Tumpat	46,871	24,465
16		Pusa/Beladin	43,305	81,427
17		Sedili	28,557	21,646
18	○	Pekan	28,551	17,473
19		Kijal	26,735	17,322
20		Sebuyau	26,632	9,834
21	○	Kuala Trengganu Utara	25,319	16,876
22		Dungan	24,744	30,285
23		Kuala Langat	23,716	17,279
24		Manjung Selatan	22,203	8,815
25		Kemaman	20,797	19,048
26	○	Johor Selatan	18,618	14,551
27		Nenasi	18,348	15,711
28		Pulau Pangkor	17,750	-1,716
29		Hilir Perak	16,919	-143
30	○	Kerin	15,868	15,355
31		Semantan/Landu	15,863	77,657
32	○	Kuantan	15,196	11,738
33	○	Kota Bahru	13,474	8,048
34		Paka	12,596	8,244
35		Yan	11,668	10,655
36		Setiu	10,761	5,739
37		Pontian	9,106	29,478
38		Kemasik	8,365	5,480
39		Miri	8,210	29,105
40		Kuala Selangor	7,827	25,751
41		Manjung Utara	7,161	-49,292
42		Pel. Klang	6,535	30,666
43		Port Dickson	6,331	1,638
44	○	Semerak	5,947	7,495
45		Melaka Barat	5,609	-303
46	○	Kengerang	4,777	-10,791
47		Kabong	3,606	8,047
48		Belawai	3,248	9,516
49		Bintulu	3,228	4,823
50		Bachok	1,876	181
51		Muar	1,848	19,379
52		Matang	1,136	450
53		Melaka Selatan	210	-12,571
54		Sungai Tinggi	0	0
55		Sepang	0	-436
56		Buntal	0	12,257
57		Teluk Pahang	-387	707
58		Ujong Batu	-450	-46
59		Mukah/Oya	-4,866	39,458
60		Perlis Selatan	-5,655	-10,541
61		Bruit	-7,355	11,636
Total			2,631,978	1,810,252

Remarks: AFA marked with ○ employs private manager.

Source: Lapuran Perstasi Projek Ekonomi PNK Bagi Tahunan 1988, 1989, LKIM

**Table 4.8.3 Number of AFA Manager and Private Manager by Net Profit (1989)**

Net profit (M\$)		No. of Manager	No. of Private Manager	No. of Manager		No. of Private Manager
Below 0--	0	8	0	Net profit (M\$)		
1--	10,000	17	2	130,001--140,001	0	0
10,001--	20,000	11	4	140,001--150,000	0	0
20,001--	30,000	9	2	150,001--160,000	0	0
30,001--	40,000	0	0	160,001--170,000	0	0
40,001--	50,000	3	2	170,001--180,000	1	1
50,001--	60,000	1	1	180,001--190,000	0	0
60,001--	70,000	0	0	190,001--200,000	0	0
70,001--	80,000	3	1	200,001--210,000	0	0
80,001--	90,000	1	0	210,001--220,000	0	0
90,001--	100,000	2	0	220,001--230,000	0	0
100,001--	110,000	1	1	230,001--240,000	0	0
110,001--	120,000	0	0	240,001--250,000	1	0
120,001--	130,000	1	0	250,001 Above	2	1
Total		57	13	Total		4 2

Source: Laporan Perstasi Projek Ekonomi PNK Bagi Tahunan 1989, LKIM

**Table 4.8.4 Changes in the Order of AFA Employing Private Manager from 1988 to 1989**

Name of AFA	Order of Profit 1988	Order of Profit 1989
Kuala Kedah	1	1
Tanjung Dawai	4	6
Kuala Trengganu Selatan	11	4
Pulau Pinang Selatan	19	11
Tumpat	20	15
Pekan	24	18
Kuala Trengganu Utara	27	21
Karang	28	13
Kerin	30	30
Johor Selatan	32	26
Kuantan	34	32
Kota Bahru	41	33
Semerak	43	44
Kengerang	58	46
Pulau Langkawi	60	14

Source: Laporan Perstasi Projek Ekonomi PNK Bagi Tahunan 1989, LKIM

**Table 4.8.5 Number and Amount of Share of AFA Member (1989)**

	Name of AFA	Number of Share	Amount (MS\$)
1	Kuala Perlis	1837	9,185
2	Perlis Selatan	304	4,680
3	Pulau Langkawi	2180	10,900
4	Kuala Kedah	5109	25,545
5	Yan	1547	7,729
6	Tanjung Dawai	2809	14,045
7	Seberang Prai	3128	15,640
8	Ujong Batu	217	10,855
9	Pulau Pinang Selatan	3590	17,950
10	Teluk Pahang	762	3,810
11	Kerian	3607	18,035
12	Matang	1888	9,425
13	Sungai Tinggi	625	4,660
14	Manjung Utara	3348	16,740
15	Manjung Selatan	2076	10,380
16	Hilir Perak	2749	13,745
17	Pulau Pangkor	1526	7,630
18	Sungai Besar	3998	19,990
19	Kuala Selangor	2494	12,470
20	Pelabuhan Klang	2228	11,140
21	Kuala Langat	1767	8,835
22	Sepang	99	1,720
23	Port Dickson	648	3,240
24	Melaka Barat	727	3,635
25	Melaka Selatan	1828	9,140
26	Muar	1214	6,070
27	Batu Pahat	1431	7,155
28	Pontian	526	5,260
29	Johor Selatan	1707	8,427
30	Pengerang	1777	8,885
31	Sedili	300	3,000
32	Mersing	1925	9,625
33	Endau	1925	15,660
34	Rompin	444	2,220
35	Nenasi	158	1,735
36	Pekan	893	4,465
37	Kuantan	1195	5,975
38	Kemaman	—	3,660
39	Kijal	264	1,320
40	Kemasik	390	1,950
41	Paka	244	1,430
42	Dungun	1074	5,755
43	Marang	1002	5,010
44	Kuala Terengganu Selatan	1875	9,380
45	Kuala Terengganu Utara	908	4,540
46	Setiu	1080	5,400
47	Besut	615	3,075
48	Semerak	375	1,876
49	Bachok	993	5,295
50	Kota Bahru	931	4,705
51	Tumpat	1736	8,680
52	Miri	3501	17,505
53	Bintulu	3066	15,330
54	Mukah/Oya	1140	5,700
55	Bruit	484	2,420
56	Belawai	3973	19,865
57	Kabong	513	2,565
58	Pusa/Beladin	1107	5,535
59	Sebuyau	924	4,620
60	Buntal	6748	33,740
61	Semantan/Landu	931	4,655
TOTAL		98460	523,612

Source: Laporan Perstasi Projek Ekonomi PNK Bagi Tahunan 1989, LKIM

**Table 4.8.6 Number of Fishermen and FA Members in Model Area (1989)**

Model Areas	Number of Fishermen	Number of FA Member	%
Kedah State			
Kuala Kedah FA	4,000	2,580	65
Yan FA	1,200	763	64
Tanjung Dawai FA	3,085	1,371	44
Sub-Total	8,285	4,714	57
Johor State			
Kuala sedili FA,	845	306	36
Mersing FA	1,807	993	55
Endau FA	1,249	371	30
Sub-Total	3,901	1,670	43
Terengganu State			
Terengganu Selatan FA	1,500	1,462	97
Terengganu Utara FA	1,300	705	54
Marang	1,030	893	87
Sub-Total	3,830	3,060	80
Kedah	8,285	4,714	57
Johor	3,901	1,670	43
Terengganu	3,830	3,060	80
TOTAL	16,016	9,444	59

Source: Results of interview survey of AFA managers.

**Table 4.8.7 Number of AFA Member by Ethnic Group in Each Model Area (1990)**

	KEDAH STATE		JOHOR STATE		TERENGGANU STATE		TOTAL	
	AFA Member	%	AFA Member	%	AFA Member	%	AFA Member	%
Malays	4,027	84.7	1,152	68.9	2,234	99.17	7,512	85.6
Chinese	722	15.2	519	31.1	22	0.9	1,263	14.4
Indians	1	0.0	1	0.1	0	0.0	2	0.0
Others	4	0.1	0	0.0	0	0.0	4	0.1
TOTAL	4,754	100.00	1,671	100	2,356	100	8,781	100

Remarks: AFA members of Terengganu consists of Terengganu Selatan and Marang FA  
Source: Results of interview survey of AFA managers.

**Table 4.8.8 Composition of AFA Member by Category (1990)**

	11(1)A %		11(1)B %		11(1)C %		11(2) %	
Kedah	3,683	77.5	423	8.9	465	9.8	183	3.8
Johor	1,350	80.8	168	10.1	111	6.6	42	2.5
Terengganu	1,793	85.1	130	6.2	181	8.6	3	0.1
TOTAL	6,826	80.0	721	8.5	757	8.9	228	2.7

Remarks: 11(1)A; Members engaged in fishing for more than 120 days.  
11(1)B; Members engaged in fish processing and marketing.  
11(1)C; Members deriving 60% or more of income from fishery.  
11(2); Members involved in research in fishing industry.

Source : AFA members of Terengganu consist of data from Kuala Terengganu Selatan and Kuala Terengganu Utara, 1990.

**Table 4.8.9 Profit/Loss Account of NFA Activities (1987-1988)**

Unit: M\$

	1988			1987		
	Sales	Net Profit	%	Sales	Net Profit	%
Diesel oil	12,863,184	697,136	69.8	9,871,891	596,327	53.1
Fish marketing	22,256	2,274	0.2	20,787	1,039	0.1
Fishing gear	494,087	68,043	6.8	530,751	147,383	13.1
Processed products	44,867	-9,272	-0.9	46,639	-24,878	-2.2
Insurance	16,989	16,740	1.7	17,258	17,199	1.5
Mussel culture (S)	208,804	57,072	5.7	402,103	-47,751	-4.3
Mussel culture (P)	563,346	216,000	21.6	142,346	37,857	3.4
Ice plant (Perlis)	278,718	-120,641	-12.1	136,146	116,384	10.4
Ice plant (Chen)	1,391,007	441,121	44.2	925,890	280,329	24.9
Ice box	766,377	-370,161	-37.1	---	---	0.0
Total	16,649,635	998,312	100.0	12,076,570	1,123,889	100.0

Source: Penyata Tahunan 1988, NEKMAT

Remarks: S; Selangor, P; Perak, Chen; Chendering

**Table 4.8.10 Gross Sales, Net Profit and Growth Rate of 61 AFA (1987-1989)**

Year	Gross Sales (M\$)	Growth Rate	Gross Sales (M\$)	Growth Rate
1987	23,586,095	—	1,282,934	—
1988	32,380,334	137 %	1,802,205	140 %
1989	54,738,243	169 %	2,631,978	146 %

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1987~1989, LKIM

**Table 4.8.11 Net Profit of AFA by Activity (1987-1989)**

	1987		1988		1989	
	(M\$)	(%)	(M\$)	(%)	(M\$)	(%)
Diesel oil	788,005	61.4	1,048,981	58.2	1,479,994	56.2
Fish marketing	106,666	8.3	116,209	6.4	128,073	5.0
Ice sale	94,772	7.4	113,133	6.3	146,059	5.6
Lorry transport	93,051	7.3	374,602	20.8	414,380	15.7
Cockle culture	87,935	6.8	21,119	1.2	113,432	4.3
Auction	48,379	3.8	-65,747	-3.7	75,319	2.9
Others	64,124	5.0	193,906	10.8	274,717	10.4
Total	1,282,934	100.0	1,802,205	100.0	2,631,978	100.0

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1987~1989, LKIM

**Table 4.8.12 Composition of Net Profit of AFA Activity (1988)**

Unit : %

	Diesel Oil	Ice Sales	Fish Market	Fishing Gear	Trans port	Auction	Other	Total
Kuala Kedah	24.0	2.7	-22.0		94.9	NA	-	100.0
Yan	83.6	-	16.5		-	NA	-	100.0
Tanjung Dawai	73.0	1.4	26.9		-	-5.1	4.4	100.0
Kuala Sedili	95.0	-	-6.9		-	11.9	-	100.0
Mersing	111.7	-	-		-6.6	-5.2	-	100.0
Endau	94.9	9.3	NA		-	-4.2	-	100.0
K. Tereng. (Selantan)	23.7	32.0	45.9	-1.9	-3.8	4.2	-	100.0
K. Tereng. (Utara)	59.3	NA	NA	-9.2	-	49.7	-	100.0
Marang	13.9	13.6	-	58.8	1.9	11.8	-	100.0

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1988, LKIM

Remarks: -; No activity, NA; Data no available

**Table 4.8.13 Utilization of Activity by AFA Members (1988)**

Unit : M\$

	Sales	Net Profit	No. of Members (1988)	Utilization Per Member	Net Profit Per Member
Kedah state					
Kuala Kedah	11,471,022	394,876	2,244	5,112	176
Yan	119,983	10,655	683	176	16
Tanjung Dawai	1,563,872	97,081	1,237	1,264	78
Total/average	13,154,877	502,612	4,164	3,159	121
Johor state					
Kuala Sedili	798,713	21,646	270	2,958	80
Mersing	448,851	47,986	938	479	51
Endau	1,897,731	182,142	320	5,930	569
Total/average	3,145,295	251,774	1,528	2,058	165
Terengganu state					
Tereng. (Selantan)	946,360	45,103	1,438	658	31
Tereng. (Utara)	455,413	16,876	671	679	25
Marang	291,209	16,453	875	333	19
Total/average	1,692,982	78,432	2,984	567	26
Total	17,993,154	832,818	8,676	2,074	96

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1988, LKIM

**Table 4.8.14 Utilization of Activity by AFA Members (1989)**

Unit : M\$

	Sales	Net Profit	No. of Members (1989)	Utilization Per Member	Net Profit Per Member
Kedah state					
Kuala Kedah	17,957,554	555,963	2,491	7,209	223
Yan	87,951	11,668	731	120	16
Tanjung Dawai	1,553,004	102,989	1,314	1,182	78
Total/average	19,598,509	670,620	4,536	4,321	148
Johor state					
Kuala Sedili	977,202	28,557	300	3,257	95
Mersing	1,059,233	90,256	985	1,075	92
Endau	3,584,287	247,776	344	10,419	720
Total/average	5,620,722	366,589	1,629	1,153	225
Terengganu state					
Tereng. (Selantan)	1,716,843	175,021	1,472	1,166	119
Tereng. (Utara)	877,213	25,319	698	596	36
Marang	593,167	52,227	594	999	88
Total/average	3,187,223	252,567	2,764	1,153	91
Total	28,406,454	1,289,776	8,676	3,274	149

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1989, LKIM

**Table 4.8.15 Sales Per AFA Staff Member (1989)**

Unit : M\$

	Sales	Net Profit	Profit Ratio %	No. of Members (1989)	Sales Per Staff Member	Net Profit Per Staff Member
Kedah state						
Kuala Kedah	17,957,554	555,963	3	32	561,174	17,374
Yan	87,951	11,668	13	3	29,317	3,889
Tanjung Dawai	1,553,004	102,989	7	18	86,278	5,722
Total/average	19,598,509	670,620	3	53	369,783	12,653
Johor state						
Kuala Sedili	977,202	28,557	3	12	81,434	2,380
Mersing	1,059,233	90,256	9	13	81,479	6,943
Endau	3,584,287	247,776	7	19	188,647	13,041
Total/average	5,620,722	366,589	7	44	127,744	8,332
Terengganu state						
Tereng. (Selantan)	1,716,843	175,021	10	14	122,632	12,502
Tereng. (Utara)	877,213	25,319	3	8	109,652	3,165
Marang	593,167	52,227	9	11	53,924	4,748
Total/average	3,187,223	252,567	8	33	96,583	7,654
Total	28,406,454	1,289,776	77	130	218,511	9,921

Source : LAPURAN PERSTASI PROJEK EKONOMI PNK BAGI TAHUNAN, 1989, LKIM



## 4.9 Financial Analysis of Fisheries Related Organization

### (1) The LKIM Complexes

The income and expenditure of the LKIM complexes in Malaysia from 1987 to 1989 is shown in Table 4.9.1. Of the 13 complexes, only three complexes; Kuala Kedah, Genting and Bukit Kayu Hitam showed continuous net profit from 1987 to 1989. The complex in Mersing showed profit in 1987 and 1988, and a deficit in 1989. The complex in Endau which began its operations in April 1989 showed a profit for 1989. Although nine complexes are operating at a loss, the total profits of the LKIM complexes have increased from M\$1.05 million in 1987 to M\$1.97 million in 1989. The net profit of three or four complexes, particularly the complex at Bukit Kayu Hitam whose profit in 1989 was M\$2.17 million, compensates the losses.

From a financial viewpoint, the capacities of these complexes were over planned and the volume of fish to be handled was over-projected (Table 4.6.2). The total volume of fish landed at the complexes in 1988 and 1989 was about 30 percent of the total planned capacity. It reflects insufficient prior investigation of the fishermen's and traders' needs. In addition to this, there is a lack of entrepreneurial and management skills.

For the model area, in 1989 the volume of fish landed in Chendering, Kuala Sedili and Bintawa complexes were below 40 percent of the planned capacity, and were operating at a deficit. The Kuala Besut and Pulau Kambing complexes also showed a deficit, although the landed volume of fish was 100 percent and 97 percent, respectively of the planned capacity. The landed volume of the Kuala Kedah complex was 36 percent of the planned capacity, but it showed a surplus account.

The summary of income and expenditure of LKIM complexes in the model area is shown in Table 4.9.2. The main source of revenue for the complexes are from rental, service charges, auction (Kuala Kedah, Kuala Sedili and Mersing) and import charges (Mersing and Pulau Kambing). Rental fees are collected for the use of the fish market and fish packing halls, cold rooms, shops and storerooms. Service charges are collected for the use of fork-lifts, ice crushers,

parking lots, and the entry of lorries, trucks, and motor cycles. Import charges indicated in the revenue for Mersing are the commissions of M\$1.00 per box of fish landed at private jetties; and for Pulau Kambing import charges levied on fish brought from Thailand during monsoon the season.

The complexes in Mersing, Kuala Sedili, Kuala Kedah, and Pulau Kambing indicate profits before depreciation, and the remainder are in deficit. The complexes with a net profit are only Mersing and Kuala Kedah; this can be attributed to the considerable amount of import charges accrued in Mersing and the auction commissions generated in Kuala Kedah.

The revenue generated from the services rendered at the the LKIM complexes do not even cover the operating expenditures which include depreciation costs, with the exception of Mersing and Kuala Kedah complexes.

In the income statement of the complexes in the model area, the amount of rental fees and service charges collected appear to be reasonable. However, the commission on direct consignments is not collected at all the complexes. Auction is another profitable source of revenue, and currently it is implemented at only a few of the complexes.

Salary/wages, utilities, repair/maintenance are a major portion of the expenditures and these expenses are not commensurate with the services rendered, in terms of the actual landed volume of fish in the complexes.

Depreciation costs are high and cannot be absorbed fully by the present complex operation over an extended period of time.

In order for the complexes to enable themselves to at least to break even, a summary of the following solutions are given below.

- a) Expenditure such as electrical costs, over-staffing, etc. has to be reduced where possible and cost consciousness on the part of the management must be instilled.

- b) The auction is instituted at only a few complexes. Efforts should be made to conduct auctions and fishermen and traders should be made aware of the benefits of the auction. However, auctions can be conducted mainly for local consumption for the time being.
- c) Commission fees on direct consignments are collected only at some complexes. Collection of this commission fee should be instituted and if it is possible, should be increased from the present M\$0.10 to M\$0.20 /kg.
- d) Low landing volume of fish in complexes may be attributed to strict operational hours (8:00 - 17:00) of the complexes and such services as diesel oil and ice sales are offered only during these hours. Flexible hours should be instituted according to the arrival of fishing boats. This would encourage the use of facilities by fishermen and traders.

1) Kuala Kedah

- Surplus
- Main source of revenue: Auction fees
- Expenditures: Appears to be reasonable.
- Immediate Goals: A commission is not collected against direct consignments at this complex. The immediate goal is how to receive a commission from both auction and direct consignment.

2) Kuala Besut

- Large Deficit
- Main source of revenue: Service fees, rental fees
- Expenditures: Exceptionally high depreciation costs, wages, salaries, and repair costs
- Immediate Goals: Income is low and operational costs are high, despite the large amount of fish landed. Therefore, it is necessary to introduce the auction and direct consignment to generate revenue from commissions and to institute a countermeasure to cut expenses.

3) Chendering

- Large deficit
- Main Source of Income: Service fees, rental fees

- Expenditures: Exceedingly high depreciation costs, wages, salaries, and repair costs
  - Immediate Goals: The auction has been introduced from March 1990. However, it is essential to receive commissions from both auction and direct consignment.
- 4) Pulau Kambing
- Large Deficit
  - Main Source of Revenue: Service fees
  - Expenditures: Comparatively high depreciation costs, wages and salaries, and repair costs
  - Immediate Goals: Income is low despite the large amount of fish landed. Moreover, operating costs are high. Therefore, it is necessary to increase commission and to institute a countermeasure to cut expenses.
- 5) Mersing
- Surplus
  - Main Source of Income: Import charges
  - Expenditures: There are no particular problems.
  - Immediate Goals: Although the auction has been implemented, it is essential to increase revenue commissions from both auction and direct consignment.
- 6) Kuala Sedili
- Deficit
  - Main Source of Income: Service fees
  - Expenditures: Depreciation, repair, water, and electricity costs are especially high.
  - Immediate Goals: It is essential to increase the number of ships utilizing the complex in order to increase revenue from commission and to decrease the complex's high operating costs.
- 7) Bintawa
- Deficit
  - Income is minimal
  - Expenditures: There are no conspicuously high expenditures.
  - Immediate Goals: It is necessary to increase revenue by commission.

(2) Fisheries Development Authority of Malaysia (LKIM)

The income and expenditure of LKIM for 1988 and 1989 is shown in Table 4.9.3. The operating expenditures of M\$22.0 million in 1988 and M\$26.2 million in 1989 was not be covered by government funds, interest, and miscellaneous income which amounted to M\$18.4 million (1988) and M\$20.3 million (1989). In 1989, administrative costs amounted to about 72 percent of the total operating expenditure, and the remainder was allocated as development expenditure. In 1989, the government fund of M\$18.3 million, contributing to 90 percent of the total income, more or less supplied the administrative expenditure of M\$18.8 million; of which M\$12.4 million was emolument in 1989. The overall income/expenditure balance is in the deficit. It is increasing annually from M\$3.6 million in 1988 to M\$5.9 million in 1989.

The performance of the projects undertaken by LKIM are not encouraging, and are not generating profits that can be utilized for development expenditure (projects). Currently, the active projects are aquaculture (culture of cockles, prawns and freshwater fish) which is operating at a loss, and the fishing complex which is operating at a profit. Other projects such as the hire purchase scheme, cage culture, and private projects have been terminated.

(3) Majuikan Sdn. Bhd.

Majuikan Sdn. Bhd., a subsidiary of LKIM, was established in 1989. Its income and expenditure for 1989 is shown in Table 4.9.4. Its source of income is mainly from the sales of fish presently being conducted in Batu Maung, Mersing and Endau. Other income is mainly subsidy from LKIM for losses incurred. The net profit for the first year was M\$44,395. Currently Majuikan is involved in the transport of diesel. In the Sixth Malaysia Plan, It has plans to go into offshore fishing using the confiscated Thai boats.

(4) KO-NELAYAN Complexes

The income and expenditure of fishery centres of KO-NELAYAN in Sabah from 1982 to 1989 is shown in Table 4.9.5. It has shown a continuous deficit, even before depreciation, and its highest loss

was in 1989 at M\$124,954. A source of revenue is from sales which comprise fish, ice and diesel, and rental income of office buildings. Revenues have been increasing from M\$32,259 in 1982 to M\$541,282 in 1987, and it dropped to M\$435,616 in 1989. An overall reorganization of the activities at the centres is necessary in order to increase revenues to cover operating expenditures.

1) KO-NELAYAN Complex in Lahat Datu (1987-1989)

- Main Source of Income: Sales of ice as shown in Table 4.9.6.
- Surplus in profit before depreciation.
- It is necessary to increase revenue from the sale of ice and to cut operating costs. It is possible to increase the profit ratio by establishing a large scale ice plant rather than creating many small ice plants scattered throughout the region. Revenue from other sources such as supply of diesel oil, supply of fishing gear, repair and maintenance of engine, etc. should be introduced.

2) KO-NELAYAN Centres in Papar, Kuala Penyu and Si-Pitang (1989)

- Main Source of Income: Sales of ice as shown in Table 4.9.7.
- Only Kuala Penyu shows a profit before depreciation.
- It is necessary to increase revenue from the sale of ice and to cut operating costs. It is possible to increase the profit ratio by establishing a large scale ice plant rather than creating many small ice plants scattered throughout the region. Revenue from other sources such as supply of diesel oil, supply of fishing gear, repair and maintenance of engine, etc. should be introduced.

(5) SAFMA

The overall income and expenditure of SAFMA from 1984 to 1989 is shown in Table 4.9.8. Sales of processed prawns is the main source of revenue, in addition to boat repair and other income. The total revenue is on the increase and it is very dependent on the sale of prawns. The sales of processed prawns amounted to about 50 percent of the total sales of M\$10.8 million in 1988. The revenue did not even cover expenditure costs. Hence the operating income before depreciation has been at a deficit throughout. A profit and loss account of SAFMA activities for 1988 is shown in Table 4.9.10. Only the carrier vessel and slipway indicate a profit before depreciation.

The interest payments on initial investment costs in facilities and large fishing boats, and on depreciation costs are high; and it is difficult to maintain sound operating costs under present conditions. Currently it needs a loan or subsidy to cover liabilities. The solution to this problem is:

- a) Solution 1: It is necessary to reduce administration and operating costs, purchase and sell fish products with high marketing value and upgrade fish product quality in order to increase the price of fish.
- b) Solution 2: It is essential to adopt cost cutting measures such as transferring direct handling of fish products to private parties, procuring handling fees from auctions and other services which may assist the fishing industry.

(6) ANGKASA

ANGKASA, a subsidiary of KO-NELAYAN was acquired in 1981 from Sabah Economic Development Corporation (SEDCO) under debt-financed condition. Despite its debt-finance condition, its net operating losses decreased. Net operating profits before depreciation, tax and interest were made in 1987, 1988 and 1989 (Table 4.9.9).

- A profit remains after interest payments are made. However it is not sufficient to cover depreciation costs.
- The main source of revenue is from the sale of shrimps. However gross profits are low.
- The complex is receiving a deficit-covering loan.
- In order to improve operations and increase revenue, it is necessary to increase the volume of shrimp purchased and sold, to improve shrimp quality, and to increase production of other high-priced fish products (however, it is important to reduce operating and administrative costs).

(7) NFA

The profit/loss accounts of NFA activities for 1987 and 1988 are shown in Table 4.8.9. Profitable activities are the supply of diesel oil, the ice plant in Chendering, and mussel culture in Lekir.

- NFA makes a profit of about M\$0.5 million every year from its economic activities.
- Main Source of income: Sales commission from diesel (75-80% of total sales) is the main source of income, followed by the sale of ice (ice plant in Chendering), and the sale of engine/spare parts. Commissions from the sale of diesel and ice are very profitable. The sale of plastic containers (fish box) commenced in 1988 and it is operating at a loss.
- Expenditures: The ice plant expenditures in Kuala Perlis and the operating costs of fish culture in Kuala Selangor are increasing.
- Immediate Goals: To rectify the uneconomical situation of the small ice manufacturing plants and its deterioration in efficiency and use due to outdated facilities. It is also essential to develop management and entrepreneurial skills through training.

(8) SFA

The profit/loss account of SFA activities throughout Malaysia for 1988 and 1989 is shown in Tables 4.9.10 and 4.9.11. Supply of diesel oil is the main source of sales revenue. However, in 1988 cockle seeds supply was a major source of revenue. As a result, the total profit of M\$158,024 in 1988 dropped to M\$98,458 in 1989. The sales of some activities are not high, and those activities with comparatively high sales indicate net losses. To rectify the uneconomical conditions of these activities, it is necessary to introduce managerial and entrepreneurial skills through training. Financial condition of SFA in model area is summarized below and details are shown in Appendices 4.87 and 4.90

1) Kedah SFA

- Surplus
- Main source of revenue is the sales commissions from diesel oil.
- It has started trawling since November 1989 using a 96-ton boat purchased on BPM loan.

2) Johor SFA

- Surplus
- The main source of revenue is the sales commissions from diesel oil, etc.



3) Terengganu SFA

- Surplus
- The main source of revenue is the sales commission from diesel oil.

4) Sarawak SFA

- Surplus
- The main source of revenue is the sale of fish products. However, gross profits are low and the earnings from the sale of fishing equipment is higher.

(9) AFA

The profit/loss accounts of AFA activities throughout Malaysia are shown in Tables 4.9.12 to 4.9.14. Net profits have increased from M\$1.283 million in 1987 to M\$2.632 million in 1989. The AFAs are involved in a number of activities, but the activities that assures high profits are diesel oil sales, ice sales, fish marketing and oil tank lorry. The present condition and problems of economic activities of AFA in model areas are summarized below and the details are shown in Appendices 4.91 and 4.95.

1) Kuala Terengganu Selatan AFA

- Deficit with the exception of 1988.
- The main source of revenue is the sales commissions from diesel oil and ice. However, earnings are not very high.
- Expenditures: The costs incurred in marketing and sales of diesel oil are high.
- The AFA is receiving a deficit-covering loan.
- Immediate Goals: To eliminate the deficit by increasing revenues from the auction and from the sale of ice.

2) Kuala Kedah AFA

- There has been a surplus in the past three years.
- The main source of revenue is the sales commissions from diesel oil.
- Expenditures: Expenditures are not particularly high.
- Receiving government subsidies as funds on hand.
- Immediate Goals: To eliminate the deficit by increasing revenues from the auction and from the sale of ice.

3) Endau AFA

- There has been a surplus in the past three years.
- The main source of revenue is the sales commissions in diesel oil.
- Expenditures: Expenses related to diesel oil and marketing are high.
- Receiving government subsidies as funds on hand.
- It is necessary to conduct the sale of ice.
- It has started deep-sea fishing since August 1989 using a 87-ton boat purchased on BPM loan.

4) Kuala Sedili AFA

- There is a surplus for 1988.
- The main source of revenue is the sales commission from diesel oil. Auction is being conducted and it is operating at a loss.
- Expenditures: Expenses related to diesel oil and auction are high.
- It is necessary to conduct the sale of ice.

5) Mersing AFA

- There is a surplus for 1988.
- The main source of revenue is the sales commissions in diesel oil.
- Expenditures: Expenses related to diesel oil and marketing are high.
- Receiving government subsidies as funds on hand.
- It is necessary to conduct the sale of ice.

The FA has both the unskilled labour and economic resource base to become viable because it is situated in FDA. However, its management is weak. Currently, its activities are concentrated in the sales of ice, diesel oil, transport, and marketing.

The FA has an opportunity, through good management and proper enforcement of policies, to increase its sales volume through improved services to its members. Efforts should be made to increase the members awareness of FA benefits.

In general the FAs are profitable because of the subsidies which include grants and management input by LKIM. However, despite subsidies, some FAs have been unprofitable in the past. The under-

lying causes that have inhibited the establishment of financially sound FAs are the lack of training in basic economics, of entrepreneurial and management skills, adequate planning and budgeting.

(10) Operation of Large Fishing Boats by FA

1) Fishing Boat Owned by Kuala Kedah SFA

A 96-ton trawler was purchased by Kedah SFA with a loan. The initial investment cost was M\$283,124. The boat is based in Kuala Kedah and started operations in November 1989. An analysis of raw data obtained for six months (seven trips a month) is shown in Table 4.9.15. Although the fish catch is auctioned in Kuala Kedah, its quantity is not available. Fuel and salaries based on a sharing system covers 80 percent of the expenditure. The gross profit varies from M\$1,100 to M\$11,800 per trip. The annual net profit is estimated at M\$89,586. The net profit margin is about 30 percent. At this rate of profit, the Kedah SFA is not heavily burdened in paying the interest, and the initial investment cost can be recovered in about three years.

2) Fishing Boat Owned by Endau AFA

A 87-ton deep-sea trawler was purchased by Endau AFA with a BPM loan. The initial investment cost was M\$308,304. The boat is based in Endau and began operations in August 1989. Cumulative data for three to five trips were analyzed and have been presented in Table 4.9.16. The fish catch is directly consigned and its quantity is not available. Fuel and salaries based on a sharing system covers 80 percent of the expenditure costs. The profit varies from M\$1,517 to M\$4,223 per trip (6-7 days). The annual net profit is estimated at M\$74,628. The net profit margin is about 20 percent. At this rate of profit, the Endau AFA is not overburdened in paying the interest, and the initial investment cost can be recovered in about four years. Given the availability of resources on the east coast, there is potential for increased growth in revenue.

These two fishing operations by AFA and SFA with the assistance of BPM loans, indicate that other FAs with proper capabilities and management can undertake deep-sea fishing.

(11) Fishery Cooperative in Japan

The income and expenditure in 1987 for an average coastal fishery cooperative in Japan is shown in Table 4.9.17. The fishery cooperative on an average makes a profit, though about 20 percent of the 2,148 coastal fisheries cooperatives show deficit. Main source income is from sales of fish and cooperative store which supplies diesel oil, ice, etc. in addition to daily goods, processing, cooperative fishing, and credit. The gross profit margin is about 19 percent. The net profit margin after administrative cost and tax is low. However, it should be noted that the economic activities operate at a profit and the cooperative's aim is not make a large profit, but to provide services and conveniences for its members.

Table 4.9.1 Income and Expenditure of LKIM Complexes in Malaysia (1987-1989)

UNIT: M\$

COMPLEXES	1987			1988			1989		
	INCOME	EXPENDITURE	PROFIT/LOSS	INCOME	EXPENDITURE	PROFIT/LOSS	INCOME	EXPENDITURE	PROFIT/LOSS
Kuala Kedah	131,349	100,647	30,702	147,459	93,810	53,649	145,358	94,419	50,939
Batu Maung	89,120	102,938	-13,818	92,045	107,830	-15,785	103,933	134,058	-30,124
Kuala Besut	163,251	237,565	-74,314	138,913	267,921	-129,007	152,329	208,295	-55,966
Chendering	79,538	169,357	-89,820	74,696	256,230	-181,535	75,034	313,077	-238,042
Pulau Kambang	212,517	240,364	-27,847	121,178	171,213	-50,035	99,208	108,785	-9,577
Kuala Kemaman	44	6,474	-6,430	10,055	51,881	-41,826	7,101	58,066	-50,966
Endau			0			0	114,132	84,307	29,825
Mersing	90,064	71,779	18,286	139,579	81,630	57,949	104,531	110,507	-5,976
Kuala Sedili	107,285	160,883	-53,598	173,232	255,409	-82,177	184,358	218,094	-33,735
Genting	464,192	155,519	308,673	392,244	156,804	235,441	368,533	147,478	221,055
Bukit Kayu Hitam	1,244,935	248,583	996,352	1,706,615	227,867	1,478,748	2,289,548	119,619	2,169,928
Belawai			0	2,922	32,931	-30,009	1,163	52,210	-51,047
Bintawa	60,719	100,095	-39,376	56,574	127,797	-71,223	74,827	103,972	-29,145
TOTAL	2,643,014	1,594,203	1,048,810	3,055,511	1,831,322	1,224,190	3,720,055	1,752,887	1,967,169

SOURCE: LKIM COMPUTER PRINTOUT (1990)

Table 4.9.2 Summary of Income Statement of LKIM Complexes in Model Areas (1988)

UNIT: M\$							
STATE	JOHOR		SARAWAK	KEDAH	TERENGGANU		
Model Area	Mersing	K.Sedili	Bintawa	K.Kedah	Chendering	P.Kambing	K.Besut
REVENUE	139,578	173,232	56,574	147,459	74,696	121,178	138,915
Rental	13,010	24,562	24,580	25,710	34,329	24,490	37,877
Vehicle charge	1,897	1,243	6,674	16,242	26,906	56,293	35,187
Auction commission	362	99,623	0	95,245	0	0	0
Sales commission	0	0	0	0	0	0	3,956
Other service charge	0	0	0	0	0	0	47,449
Import charge	119,159	0	0	0	0	8,925	5
Interest	4,870	13,201	15,189	8,156	12,372	25,895	10,100
Other Source	280	34,603	10,131	2,106	1,089	5,575	4,341
OPERATING EXPENDITURE	68,290	156,480	77,838	61,868	153,135	107,078	178,772
Salary/wages	15,546	11,704	4,560	9,480	50,474	36,373	50,381
Fixed allowance	1,486	1,383	1,452	840	5,018	3,120	4,933
Other allowance	1,764	1,647	578	1,056	6,493	4,176	6,623
Overtime	1,565	2,938	0	1,770	6,634	805	10,233
Utilities	16,823	45,758	36,085	18,453	38,018	20,994	33,899
Rental	70	0	30	0	1,916	700	1,200
Stationery	2,126	1,821	3,331	2,714	3,844	2,837	7,858
Repair/maintenance	7,901	42,450	19,011	14,051	29,511	22,725	39,326
Hospitality/service	12,738	35,127	2,753	3,899	4,421	4,952	7,854
Inventory	1,983	962	2,448	2,985	490	1,433	5,867
Credit	5,074	6,435	972	4,240	1,005	6,560	6,444
Other expense	1,214	6,255	6,618	2,380	5,311	2,403	4,154
PROFIT/LOSS BEFORE DEPRECIATION	71,288	16,752	-21,264	85,591	-78,439	14,100	-39,857
Depreciation	13,341	98,929	49,960	31,942	103,096	64,135	89,149
NET PROFIT/LOSS	57,947	-82,177	-71,224	53,649	-181,535	-50,035	-129,006

SOURCE: LKIM COMPUTER PRINTOUT (1990)

**Table 4.9.3 Income and Expenditure of LKIM (1988 & 1989)**

	UNIT: M\$	
	1988	1989
<b>INCOME</b>	18,367,078	20,279,092
Fund from Federal Govt.	16,940,000	18,338,000
Interest	1,078,021	1,636,584
Misc. income	349,057	304,508
<b>EXPENDITURE</b>	21,954,604	26,194,674
Administrative	16,924,635	18,804,162
Emolument	11,255,008	12,393,294
Service & supply	4,985,887	5,380,980
Pension & allowance	478,114	648,422
Misc. expenditure	14,601	15,877
Depreciation	191,025	365,589
Development	5,029,969	7,390,512
Courses & seminar	1,297,170	1,321,154
Lectures	59,232	45,563
Workshop	25,150	39,788
Research & intelligence	182,516	140,187
Marketing promotion	115,042	109,598
Artificial reef	352,978	523,318
Maintenance	102,365	174,906
Pilot project		555,458
Basic infrastructure for fishermen	712,337	524,904
Fishermen family development	248,485	224,594
Functions	20,287	128,801
Grants to FA	1,044,500	1,063,200
Auditing fee for AFA/SFA	14,330	54,395
Insurance scheme for fishermen	1,632	713
Educational aid fund	48,558	64,528
Study tour	2,111	8,682
Child hosting project	1,400	2,339
Credit scheme incentive	179,480	398,176
Grant to INFOFISH	31,250	34,401
Cleanliness project		33,825
Fishing net project		366,270
Misc. expenditure	222,393	517,957
Depreciation	368,752	528,275
Investment loss		525,000
Salvation	1	4,480
Profit/loss	-3,587,526	-5,915,582
<b>PROFIT/LOSS FROM CONSOLIDATED PROJECTS</b>	-1,357,683	-4,831,965
Aquaculture project	-1,013,174	-654,650
Consolidated fishing complex	1,217,289	1,561,494
Hire purchase scheme	-1,593,780	-208,714
Cage culture project	8,744	3,284
Private projects	-32,194	-246,925
Unoperational/closed projects	55,432	-5,286,454
<b>TOTAL PROFIT/LOSS</b>	-4,945,209	-10,747,547
SOURCE: LKIM COMPUTER PRINTOUT (1990)		

**Table 4.9.4 Profit and Loss Account  
of Majuikan (1989)**

	UNIT: M\$
	1989
INCOME	839,863
Sales (fish)	533,596
Other income	306,267
EXPENDITURE	768,890
Cost of sales	609,642
Administrative	159,248
Gross profit (loss)	70,973
Depreciation	26,578
Net profit (loss)	44,395

SOURCE: MAJUIKAN SDN. BHD. COMPUTER  
PRINTOUT (1990)

**Table 4.9.5 Summary of Income and Expenditure of Fishery Centres  
of KO-NELAYAN (1982-1989)**

	1982	1983	1984	1985	1986	1987	1988	UNIT: M\$ 1989
REVENUE	32,259	141,871	325,500	333,665	408,826	541,282	474,554	435,616
Sales	32,259	141,871	325,500	333,665	395,626	528,082	466,554	435,616
Rental income	0	0	0	0	13,200	13,200	8,000	0
EXPENDITURE	83,809	226,890	383,594	361,392	523,812	554,044	515,634	560,570
Wages & salaries	13,948	115,239	12,767	81,169	117,375	112,536	98,327	104,750
Purchase of diesel	0	40,754	185,195	156,174	163,506	193,361	222,032	242,857
Purchase of ice	0	0	0	0	546	40,366	55,382	19,042
Fishing gear	2,939	0	0	0	0	0	0	0
Electricity & water	33,220	27,945	129,194	82,326	145,900	64,207	57,519	57,751
Repair & maintenance	25,043	30,305	38,355	15,364	8,736	25,158	22,309	34,197
Sundry expenses	2,328	12,295	16,184	24,565	13,152	82,772	28,987	45,984
Sundry tools	0	352	1,899	294	194	215	75	287
Chemicals	0	0	0	0	6,062	0	0	7,500
Vehicle expense	0	0	0	0	9,342	5,161	4,452	22,109
Transport/hire expense	0	0	0	0	17,240	21,232	22,010	20,593
Insurance	3,081	0	0	0	0	0	0	0
Professional fee	0	0	0	1,500	0	0	0	0
Rates & assessments	0	0	0	0	5,582	5,556	5,537	5,500
Other cost	3,250	0	0	0	36,177	3,480	1,004	0
PROFIT(LOSS)	-51,550	-85,019	-58,094	-27,727	-114,986	-12,762	-41,080	-124,954

REMARKS: 1) Audited account from 1982-1985 and unaudited account from 1986-1989

2) Sales are from fish, ice and diesel oil

3) Rental income from office

SOURCE: KO-NELAYAN



**Table 4.9.6 Income and Expenditure of Lahad Datu  
(1987-1989)**

	UNIT: M\$		
	1987	1988	1989
REVENUE	170,877	118,117	141,759
Ice sales	170,877	118,117	141,759
EXPENDITURE	120,967	101,073	89,155
Direct cost	98,242	86,355	58,735
Admin., etc.	22,725	14,718	30,420
Income before deprec.	49,910	17,044	52,604
Depreciation (only machinery)	105,000	105,000	105,000
Income (loss) before interest & tax	-55,090	-87,956	-52,396

SOURCE: KO-NELAYAN COMPUTER PRINTOUT (1990)

**Table 4.9.7 Summary of Income and Expenditure of Papar,  
Kuala Penyu and Sipitang (1989)**

	UNIT: M\$		
	PAPAR	K.PENYU	SI-PITANG
REVENUE	64,874	332,354	5,548
Ice sales	64,874	332,354	5,548
EXPENDITURE	123,193	320,612	37,909
Direct cost	38,784	279,008	9,419
Admin., etc.	84,409	41,604	28,490
Income before deprec.	-58,319	11,742	-32,361
Depreciation (only machinery)	64,000	58,000	90,000
Income (loss) before interest & tax	-122,319	-46,258	-122,361

SOURCE: KO-NELAYAN COMPUTER PRINTOUT (1990)

**Table 4.9.8 Income and Expenditure of SAFMA (1984-1989)**

	UNIT: M\$					
	1984	1985	1986	1987	1988	1989
REVENUE	1,678,842	1,612,321	2,853,827	7,873,111	12,136,949	15,103,312
Sales	1,049,945	937,040	1,975,823	5,229,872	10,827,910	14,380,938
Ship repair	-	2,790	449,312	1,308,953	904,656	552,062
Other income	628,897	672,491	428,692	1,334,286	404,383	170,312
EXPENDITURE	1,982,969	3,608,316	7,075,230	8,973,784	16,132,375	17,880,763
Cost of sales	922,581	1,166,370	2,099,879	5,288,596	9,444,915	12,647,612
Administ, etc.	782,630	1,213,151	2,813,581	1,204,493	3,665,393	1,913,148
Indirect expense	277,758	1,228,795	2,161,770	2,480,695	3,022,067	3,320,003
OPERATING INCOME (LOSS) BEF. DEPRECIATION	-304,127	-1,995,995	-4,221,403	-1,100,673	-3,995,426	-2,777,451
Depreciation	107,628	504,317	1,541,627	1,644,207	1,970,978	1,915,764
PROFIT (LOSS) BEFORE INTEREST & TAX	-411,755	-2,500,312	-5,763,030	-2,744,880	-5,966,404	-4,693,215
Interest on loan	-7,500	45,325	1,096,392	1,259,263	1,364,698	1,420,170
PROFIT (LOSS)	-419,255	-2,545,637	-6,859,422	-4,004,143	-7,331,102	-6,113,385

SOURCE: SAFMA COMPUTER PRINTOUT (1990)

**Table 4.9.9 Income and Expenditure of ANGKASA  
(1987-1989)**

	UNIT: M\$		
	1987	1988	1989
REVENUE	4,076,026	6,538,039	5,195,683
Shrimp sales	3,818,799	6,333,662	4,978,539
Other income	257,227	204,377	217,144
EXPENDITURE	3,867,974	6,358,410	5,040,383
Cost of shrimp sales	3,684,401	6,168,044	4,688,767
Administ, etc.	55,929	123,073	266,767
Other expense	127,644	67,293	84,849
INCOME BEF. INTEREST	208,052	179,629	155,300
Interest	123,238	107,009	83,268
INCOME AFTER INTEREST	84,814	72,620	72,032
Depreciation	231,680	224,374	218,978
INCOME AFT. DEPRECIATION	-146,866	-151,754	-146,946

SOURCE: KO-NELAYAN'S SIXTH MALAYSIAN PLAN (DRAFT)

**Table 4.9.10 Profit and Loss Account of SFA Activities  
in Malaysia (1988)**

UNIT: M\$

ACTIVITIES	SALES	SALES COST	EXPENDITURE	PROFIT/LOSS
Cockle seeds	1,068,142	724,473	224,423	119,246
Diesel supply	3,119,751	2,986,888	19,318	113,545
Social project	19,980		11,047	8,933
Rental of building	4,850		561	4,289
Airconditioning	56,641	54,150		2,491
Rental of boat	7,076	1,723	2,945	2,408
Rental of canteen	2,780		508	2,272
Wooden Jetty	2,680		508	2,172
Art. reef (concrete)	9,600	8,000		1,600
Ice supply	1,400		508	892
Computer	3,794	184	2,783	827
Construction	6,491	6,000		491
Marketing of fish	186			186
Plastic box	920	840		80
Cuttlefish processin	732	695		37
Restaurant	82,644	77,144	5,635	-134
Fish production	15,308	11,199	5,110	-1,001
Artificial reef(Tyre	87,650	67,587	1,300	-1,237
Fishing net	18,800	20,340		-1,540
Handicraft	164		2,041	-1,877
Fishing gear	1,915	7,916		-6,001
Fish supply	16,856	23,306	900	-7,350
Fish culture		848	16,035	-16,883
Management	9,403	300	74,523	-65,420
<b>TOTAL</b>	<b>4,517,764</b>	<b>3,991,593</b>	<b>368,146</b>	<b>158,024</b>

REMARKS: ACTIVITIES ARRANGED IN THE ORDER OF PROFIT.  
SOURCE: LKIM COMPUTER PRINTOUT (1990)

**Table 4.9.11 Profit and Loss Account of SFA Activities  
in Malaysia (1989)**

UNIT: M\$

ACTIVITIES	SALES	SALES COST	EXPENDITURE	PROFIT/LOSS
Diesel supply	5,890,410	5,634,730	6,584	249,096
Cockle seeds	280,407	240,331	26,406	13,670
Net supply	190,007	183,496	0	6,511
Cockle culture	259,501	224,945	32,628	1,928
Building rental	1,970		105	1,865
Computer	3,178	357	1,490	1,330
Plastic box	7,100	4,520	1,900	681
Food supply	655	431		224
Fisf products supply	850	640		210
Stationery supply	662	465		197
Farmers market	225		94	131
Fish medicine	240	226		14
Restaurant	320	280	380	-340
Prawn marketing	112,320	113,023		-703
Handicraft	4,461	5,347	0	-887
Processing	7,639	9,050	0	-1,411
Fish culture	170	6,253	0	-6,083
Management	98,910	3,610	173,668	-78,368
Trawler	45,807		135,415	-89,608
<b>TOTAL</b>	<b>6,904,831</b>	<b>6,427,704</b>	<b>378,669</b>	<b>98,458</b>

REMARKS: ACTIVITIES ARRANGED IN THE ORDER OF PROFIT.  
SOURCE: LKIM COMPUTER PRINTOUT (1990)

**Table 4.9.12 Profit and Loss Account of AFA Activities in Malaysia (1987)**

ACTIVITIES	SALES	SALES COST	EXPENDITURE	UNIT: M\$
				PROFIT/LOSS
Diesel supply	10,758,288	9,524,218	446,065	788,005
Fish marketing	2,614,936	2,194,897	313,373	106,666
Ice supply	1,843,518	1,457,624	291,120	94,772
Oil tanker	3,875,140	2,192,735	1,589,353	93,052
Cockle	357,097	76,857	192,305	87,935
Auction of fish	1,705,747	1,558,826	98,541	48,379
Rental of shop	81,199	29,069	13,567	38,563
Fish processing	351,687	266,912	47,028	37,748
Farmer market	548,438	435,916	84,020	28,502
Fishing net	141,791	130,521	2,807	8,463
Slipway	2,400			2,400
Spareparts	15,741	11,448	2,963	1,330
Constr. materials	28,811	21,057	8,909	-1,155
Social project	9,402	0	11,247	-1,845
Retail shop	992,183	898,293	96,586	-2,696
Cuttlefish process	19,028	20,778	4,444	-6,194
Fish culture	8,281	12,408	12,062	-16,188
Lorry transport	225,570	0	251,174	-25,604
Others	6,838	5,768	268	802
<b>TOTAL</b>	<b>23,586,096</b>	<b>18,837,329</b>	<b>3,465,833</b>	<b>1,282,934</b>

SOURCE: LKIM COMPUTER PRINTOUT (1990)

**Table 4.9.13 Profit and Loss Account of AFA Activities in Malaysia (1988)**

ACTIVITIES	SALES	SALES COST	EXPENDITURE	UNIT: M\$
				PROFIT/LOSS
Diesel supply	14,101,054	12,491,581	560,492	1,048,982
Oil tanker	6,304,432	5,823,468	106,362	374,603
Marketing of fish	2,128,059	1,799,075	212,774	116,210
Ice supply	1,852,146	1,504,848	234,164	113,134
Management	929,960	23,832	798,544	107,584
Fish processing	522,262	360,554	62,604	99,104
Farmers market	533,049	412,316	93,987	26,746
Retail shop	717,422	631,655	64,089	21,679
Cockle (Sales)	338,632	277,597	39,916	21,119
Trash fish	4,023			4,023
Net supply	76,740	69,542	3,684	3,514
Office cleaning	4,629		1,339	3,290
Social project	23,230	20,096		3,134
Construction	40,979	34,111	5,182	1,686
Slipway	1,600			1,600
Fish production	2,963	183	1,469	1,311
Rental of shop	450			450
Rental of jetty	258			258
Spare parts	2,258	1,594	639	24
Cuttlefish process	6,296	5,766	2,351	-1,821
Lorry transport	208,237	1,950	210,602	-4,314
Fish culture	4,761	5,890	8,592	-9,722
Cockle (culture)	285,633	269,774	79,392	-63,534
Fish auction	4,241,250	4,026,118	280,881	-65,748
Others	50,010		51,117	-1,107
<b>Total</b>	<b>32,380,334</b>	<b>27,759,950</b>	<b>2,818,179</b>	<b>1,802,205</b>

SOURCE: LKIM COMPUTER PRINTOUT (1990)

**Table 4.9.14 Profit and Loss Account of AFA Activities  
in Malaysia (1989)**

ACTIVITIES	UNIT: M\$			
	SALES	SALES COST	EXPENDITURE	PROFIT/LOSS
Diesel supply	29,553,493	27,461,545	611,740	1,480,209
Oil tanker	11,105,138	10,499,063	191,695	414,380
Ice supply	2,006,089	1,606,912	253,118	146,060
Fish marketing	1,592,226	1,270,177	193,976	128,073
Cockle	373,490	170,441	89,616	113,433
Auction of fish	6,175,941	5,789,204	311,417	75,320
Management	959,184	87,860	814,299	57,025
Farmers market	608,503	470,580	98,557	39,365
Retail shop	836,563	744,876	55,684	36,003
Lorry transport	242,660	0	213,005	29,655
Fish processing	478,791	403,547	59,758	15,486
Plastic box	17,513	1,197	1,931	14,385
Broiled fish	93,024	60,876	21,568	10,582
Constr. contract	17,803	13,045		4,758
Social project	18,202	14,178	909	3,115
Transportation	28,862		23,862	2,999
Cockle	34,597	10,733	21,510	2,354
Boat	7,029	2,891	2,094	2,044
Trash fish	1,490	0	0	1,490
Fish box	4,925	252	3,649	1,024
Trawler	785			785
Fish basket	1,289	574	0	715
Shop rental	500	0	0	500
Various marketing	37,639	16,165	21,045	428
Kerosene	2,115	1,773		342
Fish crackers	2,280	1,132	810	337
Banana crackers	39			39
Net supply	3,518	3,278	326	-87
Cuttlefish process	6,449	3,905	2,876	-332
Spareparts	2,391	2,553	314	-476
Jetty rental	440		2,012	-1,572
Constr. materials	60,107	63,616	1,950	-5,459
Deepsea fishing	62,715		68,999	-6,284
Others	404,455	296,318	39,597	68,540
<b>Total</b>	<b>54,738,243</b>	<b>48,996,691</b>	<b>3,106,313</b>	<b>2,635,239</b>

SOURCE: LKIM COMPUTER PRINTOUT (1990)

Table 4.9.15 Income and Expenditure of Offshore Fishing Trawler  
Operated by SFA In Kuala Kedah (1989)

FISHING TRIPS	UNIT: M\$						
	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	ANNUAL
REVENUE (from catch)	33,222	30,323	12,168	28,362	17,531	28,341	299,893
OPERATING EXPENDITURE	21,414	15,597	11,068	18,591	6,486	18,342	182,995
Diesel oil	10,861	10,770	7,390	9,550	2,369	9,634	8,429
Water	70	70	70	70	70	70	70
Food	497	381	251	414	244	373	360
Jetty rental	100	100	100	100	100	100	100
Net	55	50	60	200	170	535	89
Other expense	2,629	1,486	1,710	2,260	1,540	2,260	1,981
Air conditioning (RSW)	400	400	400	400	400	400	400
Salary (Pangu system)	6,801	2,340	1,086	5,597	1,593	5,506	3,821
GROSS PROFIT/LOSS	11,808	14,726	1,100	9,771	11,045	9,999	9,742
Depreciation (10%)	2,276	2,276	2,276	2,276	2,276	2,276	2,276
NET PROFIT/LOSS	9,532	12,450	-1,176	7,495	8,769	7,723	7,466
NET PROFIT/TRIP	1,362	1,779	-168	1,071	1,253	1,103	1,067

REMARKS: (1) Assumption that the vessel makes seven trips a month.  
(2) Initial investment cost is \$283,124 (\$280,000 from BPM loan)  
SOURCE: SFA, KEDAH

Table 4.9.16 Income and Expenditure of Offshore Fishing Boat  
Operated by AFA In Endau (1989-1990)

FISHING TRIPS	Unit: M\$					
	(a) 4 TRIPS	(b) 5 TRIPS	(c) 5 TRIPS	(d) 5 TRIPS	(e) 3 TRIPS	(f) 5 TRIPS
					ONE MONTH	ANNUAL
REVENUE (from catch)	23,478	67,241	56,208	54,612	30,809	50,812
OPERATING EXPENDITURE	17,412	46,124	38,627	39,890	23,203	38,812
Diesel oil	4,174	12,440	11,174	14,319	8,478	14,868
Ice/box, etc.	512	2,988	2,236	2,867	1,827	1,657
Food	1,082	1,299	1,234	1,211	589	1,196
Other expense	3,529	1,486	636	1,465	1,459	3,585
Air conditioning (RSW)	700	1,850	1,600	2,100	1,000	2,100
Commission for sales		250	250	300	250	39
Salary (Pangu system)	7,415	25,811	21,497	17,628	9,600	15,406
GROSS PROFIT/LOSS	6,066	21,117	17,581	14,722	7,606	12,000
PROFIT PER TRIP	1,517	4,223	3,516	2,944	2,535	2,400
Depreciation (10%)						
NET PROFIT/LOSS						

REMARKS: (1) a) Aug. 19 - Sept. 5, 1989; b) Sept. 17-Oct. 10, 1989; c) Nov. 14, 1989-Jan. 10, 1990

d) Jan. 15-March 20, 1990; e) March 24-April 18, 1990; f) May 1-June 26, 1990

(2) Assumption that the vessel makes three trips a month (6-7 days/trip).

(3) Initial investment cost is \$308,304

SOURCE: AFA, ENDAU

**Table 4.9.17 Profit and Loss Account of Activities  
of Fishery Cooperative in Japan (1987)**

UNIT: YEN

ACTIVITIES	SALES/INCOME	SALES COST	GROSS PROFIT
Credit	64,092,000	49,672,000	14,370,000
Insurance	1,586,000	262,000	1,321,000
Cooperative store	105,933,000	95,813,000	10,070,000
Sales (fish)	127,069,000	95,148,000	30,902,000
Ice/cold storage	82,490,000	73,152,000	9,191,000
Processing	69,203,000	64,656,000	4,523,000
Coop. fishing	86,614,000	64,745,000	21,639,000
Others	22,892,000	15,867,000	6,984,000
<b>TOTAL</b>	<b>345,076,000</b>	<b>280,006,000</b>	<b>65,070,000</b>
GROSS PROFIT			65,070,000
DEDUCT: OPERATION/ADMIN.COST			58,528,000
OPERATION INCOME			6,542,000
ADD: OTHER INCOME/PROFIT			2,071,000
TOTAL PROFIT			8,613,000
DEDUCT: TAX/OTHER LOSS			4,217,000
NET PROFIT			4,396,000

REMARKS: The activities vary with the cooperatives and the figures are averages of these activities. Therefore, the sum of the averages will not tally with the total.

SOURCE: FISHERMEN COOPERATIVE, FISHERY POLICY DEPARTMENT, FISHERY AGENCY



## **4.10 Organization of Public Fish Marketing Institutions**

### **4.10.1 Organization of LKIM**

The organizational chart of LKIM is shown in Fig. 4.10.1. The LKIM is subdivided into two branches (Development and Services) each of which is headed by a Deputy Director General. The Development Branch has four operational divisions, namely Marketing, Aquaculture, Fishermen's Community Development, and Marine Fisheries Development; and the Service Branch has also four, namely Administration and Personnel, Human Resources and Public Relations, Finance and Account, and Technical. In addition there are two units, Internal Audit and Planning which are attached to the Director General's Office.

There are also nine LKIM State Offices and 11 Fisheries Development Centres in FDAs, which have been established for the purpose of focusing fisheries development in selected coastal areas. The State Directors and the FDA staff are administratively directly responsible to the Director General. However considerable guidance and direction, particularly in relation to the development activities undertaken in the FDA, is provided by the Directors of the divisions responsible for the various development activities.

With regard to staffing, LKIM is presently staffed with 1,057 personnel, although there are 1193 posts approved. The total number of officers and staff in the LKIM office in Kuala Lumpur is 287 (27%) (Table 4.10.1), and the rest (73 percent) is spread throughout Peninsular Malaysia and Sarawak in its nine state LKIM offices and 11 fishermen development areas (FDA).

The functions and responsibilities of each division is summarized as follows:

# DIVISIONS IN LKIM ORGANIZATION AND ITS FUNCTION

DIVISIONS	FUNCTION/RESPONSIBILITIES	REMARKS
(1) MARKETING		
1) Market Intelligence	<ul style="list-style-type: none"> <li>- Collection/compilation/ dissemination of fish market information including:- <ul style="list-style-type: none"> <li>* Fish price data</li> <li>* Supply &amp; demand of fish</li> <li>* Fish market situation</li> </ul> </li> <li>- Information relating to availability and demand for fish products</li> <li>- Provision of support to INFOFISH</li> </ul>	<p>Fish price data</p> <ul style="list-style-type: none"> <li>- DOF covers a wider areas for statistical purpose.</li> <li>- LKIM covers whole sale &amp; retail markets for trade purpose.</li> </ul>
2) Regulatory and Enforcement	<ul style="list-style-type: none"> <li>- Empowered to license fish dealers</li> <li>- Empowered to regulate and &amp; enforce fish trading according to provisions provided under LKIM Act, Fish Marketing Regulation, or any regulation under LKIM Act relating to fish trading. The areas of responsibility include:- <ul style="list-style-type: none"> <li>* licensing of fish dealers</li> <li>* licensing of fish importers and exporters</li> <li>* authorizing fish markets in gazetted Fish Marketing Control Area</li> <li>* regulate the system of marketing including mode of trading &amp; flow of fish wherever required.</li> </ul> </li> <li>- Specify siting and layout, number of stalls, operating hours &amp; procedure, quality control, weighing equipment, etc.</li> </ul>	<ul style="list-style-type: none"> <li>- With regard to quality control, lacks expertise in fish quality, preservation and handling practice</li> </ul>
3) Entrepreneurial Development	<ul style="list-style-type: none"> <li>- Assistance to Fishermen's Association and Bumiputra entrepreneurs to participate actively in marketing of fish through:- <ul style="list-style-type: none"> <li>* credit facilities</li> <li>* upgrading of skills</li> <li>* technical support services</li> <li>* new opportunities in marketing</li> </ul> </li> </ul>	<p>Credit facilities</p> <ul style="list-style-type: none"> <li>- It is not promoted in AFAs currently.</li> <li>- It is recommended directly from BPM revolving fund to AFAs with good performance &amp; high recovery rate.</li> </ul>

DIVISIONS	FUNCTION/RESPONSIBILITIES	REMARKS
4) Development of Market Demand	<ul style="list-style-type: none"> <li>- Expansion of consumers demand for fish through               <ul style="list-style-type: none"> <li>* consumer advertising</li> <li>* consumer education</li> <li>* new product development</li> <li>* trade promotion</li> <li>* better packing</li> <li>* foreign market development</li> </ul> </li> </ul>	
5) Management of Fish Landing Complexes	<ul style="list-style-type: none"> <li>- Management of facilities provided at fish landing complexes which have been constructed at various fishing villages</li> <li>- Encourage utilization of the complexes by fishermen to ensure better system of marketing</li> </ul>	
6) Planning & Development of Fish Landing Complexes	<ul style="list-style-type: none"> <li>- Planning of fish landing/ marketing facilities according to the need of the fishing industry</li> <li>- Development of fish landing complexes according to the plan approved.</li> </ul>	
7) Fish Handling & Quality Control	<ul style="list-style-type: none"> <li>- Planning and implementation of fish handling &amp; quality control programme which include:-               <ul style="list-style-type: none"> <li>* fish quality assurance</li> <li>* training</li> <li>* support services</li> </ul> </li> <li>- Fish quality inspection</li> </ul>	
(2) AQUACULTURE		
1) Technical	<ul style="list-style-type: none"> <li>- Responsible for the study, monitoring and evaluation of individual projects on pilot scale</li> </ul>	<ul style="list-style-type: none"> <li>- Development of hatching &amp; rearing system, training &amp; extension is with DOF.</li> </ul>
2) Operation	<ul style="list-style-type: none"> <li>- Responsible for planning and implementation of projects</li> </ul>	<ul style="list-style-type: none"> <li>- LKIM's involvement is minimal</li> <li>- Aquaculture projects undertaken so far have failed financially</li> <li>- Professional and technical expertise and experience of DOF staff is more extensive than that of LKIM staff.</li> </ul>

DIVISIONS	FUNCTION/RESPONSIBILITIES	REMARKS
(3) FISHERMEN COMMUNITY DEVELOPMENT		
1) Social Development	<ul style="list-style-type: none"> <li>- Socio-economic development of fishermen &amp; fishing communities through:-</li> <li>* Upgrading the skills and entrepreneurship</li> <li>* Encourage self-help projects</li> </ul>	-Currently it is not sufficient. It should be further promoted.
2) Institutional Development	<ul style="list-style-type: none"> <li>- Development of FAs</li> <li>- Registration of FAs</li> <li>- Provision of support services (management support and advice in the economic activities of FAs</li> </ul>	- In order to promote self-reliance, AFAs should employ capable private staff for management
(4) MARINE FISHERIES DEVELOPMENT		
1) Modernization of Fishing	<ul style="list-style-type: none"> <li>- Encourage ownership of fishing vessels</li> <li>- Upgrading of fishing vessels</li> </ul>	<ul style="list-style-type: none"> <li>- Management, research, training and extension with DOF</li> <li>- Similar to aquaculture professional and technical expertise in DOF</li> </ul>
2) Modernization of related industries	<ul style="list-style-type: none"> <li>- Facilitate in the development of related ice plants, etc.</li> <li>- Establishment of fishermen's insurance scheme</li> <li>- Encourage the use of radio communication by fishing boats</li> <li>- Construction of artificial reefs</li> <li>- Encourage the use of better technology</li> <li>- Encourage the development of fish processing to upgrade fish processing industry</li> </ul>	<ul style="list-style-type: none"> <li>- LKIM lacks technical expertise in relation to fishing operation</li> </ul>
(5) TECHNICAL DIVISION		
	<ul style="list-style-type: none"> <li>- Responsible for provision of technical advice &amp; technical service to all LKIM projects including:-</li> <li>* designing, supervision of construction, repair &amp; maintenance of facilities</li> <li>- Responsible for fish landing complexes (overall management/maintenance office plants &amp; chill rooms, slipway &amp; workshop, fish dealers office, fishing handling systems (jibs, cranes &amp; fork-lifts)</li> <li>- Designing, contracting and supervision of construction of small scale jetties, FDA office, etc.</li> </ul>	

DIVISIONS	FUNCTION/RESPONSIBILITIES	REMARKS
	- Provision of advice in connection with engine & construction of vessels acquired through financial assistance scheme	
(6) ADMINISTRATION AND PERSONNEL DIVISION	- Responsible for all office services and supplies, and for vehicles - Responsible for recruitment, promotion, transfer, staff training	
(7) HUMAN RESOURCES DEV. & PUBLIC RELATIONS	- Provision of training - Dissemination of information to fishermen in FDA - Liaison with other fisheries related agencies	
(8) FINANCE AND ACCOUNTS DIVISION	- Preparation of budget estimates and financial control of all budgetary allocations and expenditure	

#### 4.10.2 Organization of KO-NELAYAN

The organizational chart of KO-NELAYAN is shown in Fig. 4.10.2. KO-NELAYAN is subdivided into two branches (Operation & Development and Administration and Finance) each of which is headed by a Deputy General Manager. The Operation and Development branch has three divisions, namely Aquaculture, Fishermen's Community Development and Regional Administration; while the Administration and Finance branch has four divisions, namely Accounts & Finance, Administration & Personnel, Planning & Evaluation, and Internal Audit.

The Aquaculture Division is responsible for training, extension and advisory service, and credit schemes in relation to aquaculture. The Fishermen Community Development Division is responsible for fishermen development area, formation of fishermen associations and loan assistance schemes. The Regional Administration is responsible for activities in Pantai Barat, Beaufort, Kudat, Sandakan and Tawau. KO-NELAYAN has four subsidiaries, namely Safma Sdn. Bhd., Angkasa Sdn. Bhd., Nelayan Jayadiri

Sdn. Bhd. and Nelayan Angkasa Sdn. Bhd. Some of the functions of the operation and development division is summarized as follows:

DIVISIONS	FUNCTION/RESPONSIBILITIES	REMARKS
<u>OPERATION &amp; DEVELOPMENT</u>		
(1) AQUACULTURE	<ul style="list-style-type: none"> <li>- Selection of areas for aquacultural development</li> <li>- Development and expansion of aquaculture industry by encouraging small-scale fishermen</li> <li>- Encouragement of commercial aquaculture</li> <li>- Provision of credit for aquaculture input</li> </ul>	
(2) FISHERMEN COMMUNITY DEVELOPMENT	<ul style="list-style-type: none"> <li>- Development of fishing community status</li> <li>- Formation of fishermen associations</li> <li>- Promotion of industries/activities to improve fishermen income</li> <li>- Administration of economic activities of fishermen</li> <li>- Administration of education and health programs of fishing community</li> <li>- Provision of credit/loan</li> </ul>	
(3) REGIONAL ADMINISTRATION	<ul style="list-style-type: none"> <li>- Overall administration and management of regional or district centres</li> </ul>	

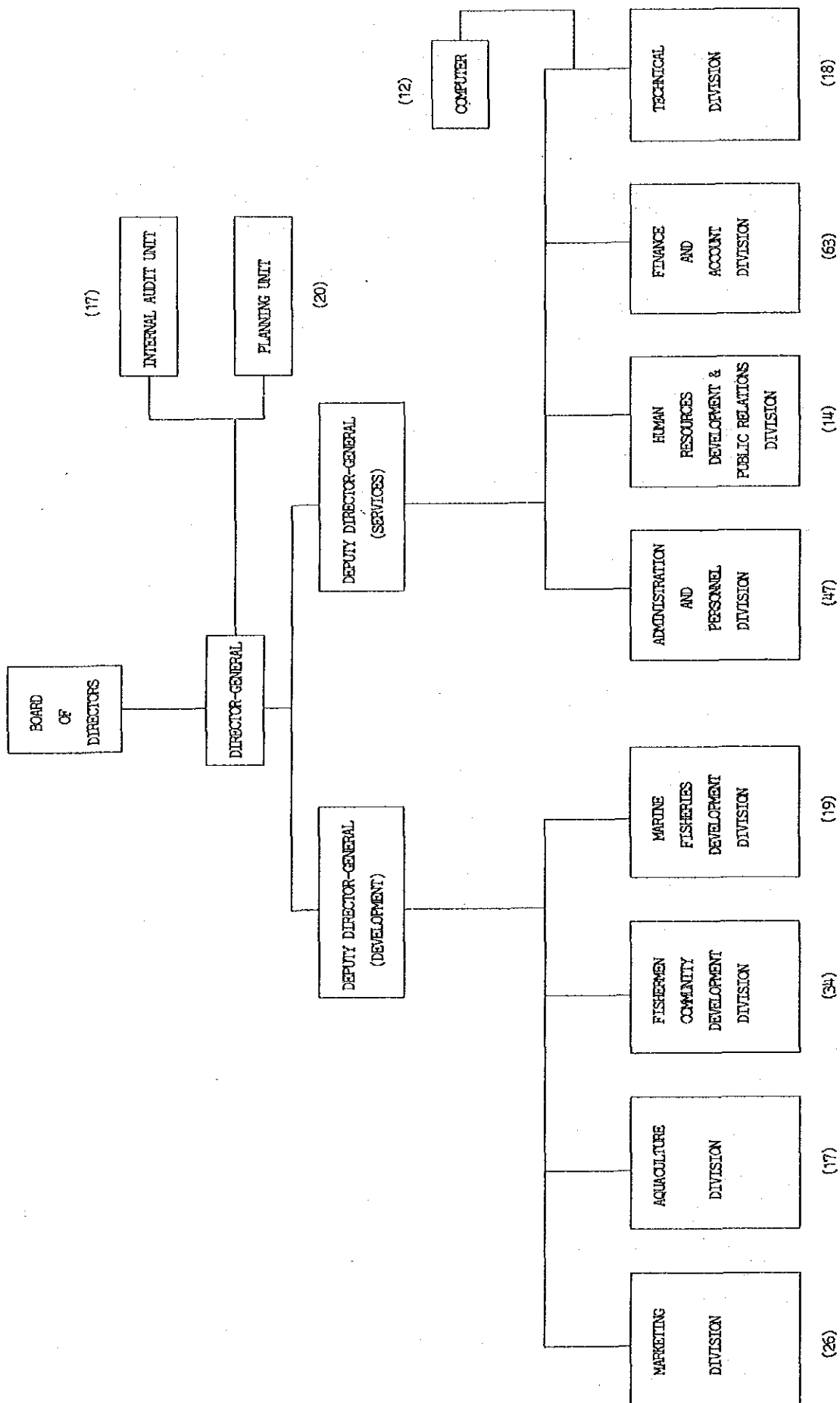
#### 4.10.3 Organization of SAFMA

The Sabah Fish Marketing Sdn. Bhd. (SAFMA) is a subsidiary of KO-NELAYAN. SAFMA was formed in February 1982 as a result of a joint-appraisal on the overall fishing industry in the State of Sabah by the ADB and the State Government of Sabah. The State Government of Sabah provided the necessary equity through KO-NELAYAN; and an ADB loan of US\$11.7 million was obtained to carry out fisheries infrastructure development projects in the fishing industry.

As shown in the organizational chart (Fig. 4.10.3), there are three divisions and one office, namely Finance & Account Division, Administration & Personnel Division and General Manager Division, and Operation Manager Office. The major activities of SAFMA under the operation manager office are shown in the organizational chart.

There are 110 permanent personnel and 103 daily paid staff, amounting to 213 staff members in SAFMA. Of the total 213 staff members, 35 percent or 75 personnel are in Kota Kinabalu Fisheries Complex and 23 percent or 49 personnel are in Semporna Fisheries Complex.

SAFMA also has four subsidiary companies. Safma Fishing Sdn. Bhd. which is 100 percent wholly owned by SAFMA; Semporna Fisheries Sdn. Bhd., 51 percent owned; Labuan Fisheries Sdn. Bhd., 50 percent owned, and Seribena (Marine Supplies) Sdn. Bhd., 30 percent owned.



REMARKS: FIGURES IN PARENTHESES INDICATE THE NUMBER OF OFFICER AND STAFF

Fig. 4.10.1 Organizational Chart of LKIM



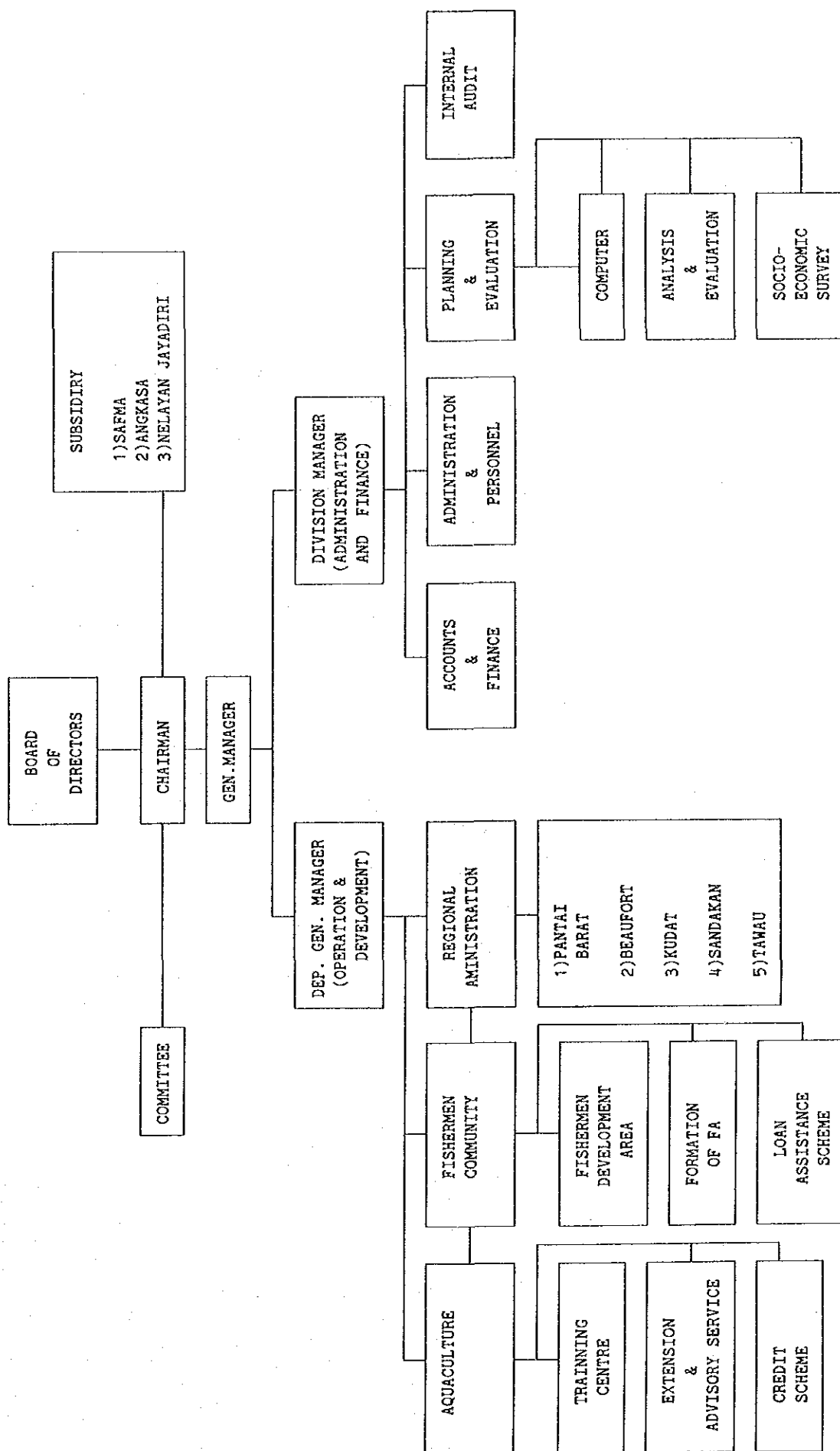
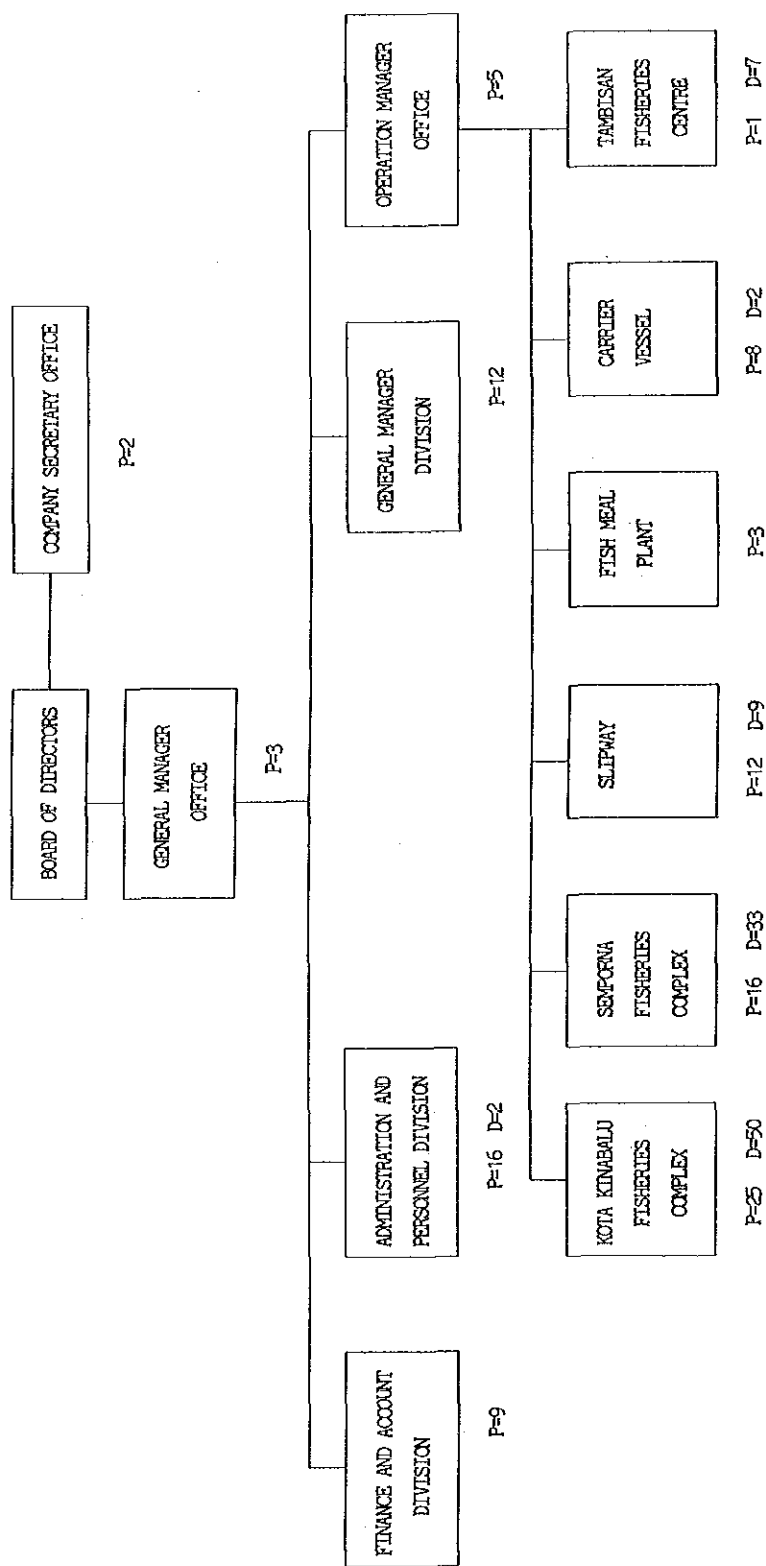
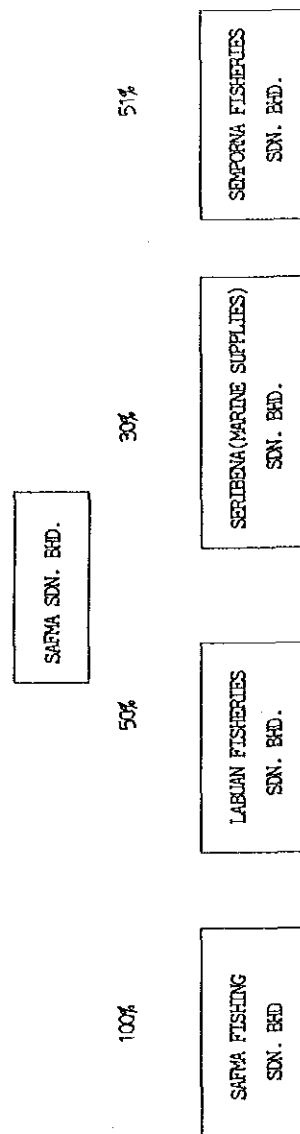


Fig. 4.10.2 Organizational Chart of KO-NELAYAN



(P = Permanent staff, D = Daily workers)

ORGANIZATIONAL CHART OF SAFMA



(Percentage indicates share of SAFMA)

Fig. 4.10.3 Organizational Chart of SAFMA and its Subsidiaries