

An Interim Report
on the
Sri Lanka Fisheries Training Institute (SLFTI)

March, 1979

Sri Lanka Fisheries Training Institute(SLFTI)
Ministry of Fisheries
Crow Island, Mattakkuliya, Colombo 15,
Sri Lanka

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FOREWORD

In order to meet the need for developing the off-shore and deep-sea fisheries of Sri Lanka, the Government of Japan and the Government of Sri Lanka are cooperating in implementing the project of the Sri Lanka Fisheries Training Institute at Crow Island in Colombo.

The agreement for the project was signed in April, 1974. Thereafter, the construction of the building of the Institute was expedited by the Government officials. However, the progress of work was slow.

The opening ceremony for the Institute was held in April, 1975. However, the construction of the hostel was delayed and the inauguration of the class was set back to June, 1975.

There were many difficulties in the initial stage of building the Institute. However, these problems were overcome due to the friendly cooperation between the Japanese advisers and the Sri Lanka Staff.

Now, two classes have graduated from the Institute, and they are working with fishing companies in Sri Lanka and Japanese Fishing Companies. Their training has been appreciated very much, and their strong spirit, diligent work and their sense of discipline have been commended.

This report is intended to explain the problems in the initial stage and to suggest ways and methods to overcome these problems while handing over the running of the Institute to the Sri Lanka Staff smoothly in the near future.

The Japanese Chief Adviser sincerely thanks the officials of the Ministry of Fisheries and others concerned

for encouragement and support given for the successful running of the Institute.

At present, the major share of the running of the Institute is handled by the Sri Lanka Staff. We hope there will not be much difficulty in handing over the running of the Institute in 1980.

On this occasion, the supervision and support rendered by the JICA. HQ, Foreign Affairs Ministry and Ministry of Agriculture, Forestry and Fisheries are appreciated. Of course, the Japanese advisers' work is also very much appreciated, by the Government of Sri Lanka and Government of Japan.

Chief Advisor
Zennosuke TAKAGI

I. NEED FOR PROMOTING THE PROJECT AND ITS PURPOSE

In 1961, the Government of Sri Lanka established the Fisheries Training Centre in Negombo in cooperation with the Japanese Government, for the following purposes:

- (a) To provide practical and theoretical training for fishermen and engine repairmen.
- (b) To promote research and experiments to improve the fishing technology applicable in this country.

After several years, the government appreciating the results achieved by the Negombo Training Centre and established like organizations in Jaffna, Batticaloa and Tangalle;

With this background, the government has taken aim at the development of the off-shore and deep-sea fisheries.

The government of Sri Lanka has requested aid from the Japanese Government on the selection of suitable sorts of fishes and fishing methods, on the exploitation of the off-shore and deep sea fisheries, and also for the establishment of an organization for the purpose of theoretical and practical training of students for the development of off-shore and deep-sea fisheries in Sri Lanka.

II. BACKGROUND OF THE PROJECT

1. Approach

Generally speaking, the coastal fisheries in Sri Lanka have been developed as a subsistence fishing household job.

With the progressive modernization of the fisheries, they will become more capital intensive and industrialized. Especially, off-shore and deep-sea fisheries require much capital and modern technology.

Taking the above into consideration, it is quite important to clearly grasp the circumstances of the related industry, socio-economic condition, industrial circumstances, etc., in order to "most rationally judge the project requests."

2. Social Circumstances

The population of this country is said to be 13,000,000 and increasing at two percent per year, a rather high figure.

Both races and religions were compounded and the compositions are shown as follows:

Races

Sinhala	71%
Tamil	20%
Burgar and others	9%

Religions

Buddhist	67%
Hindu	17%
Christian	9%
Mohammedan	7%

In such a condition of compound races and religions, the policy has been taken by the Government of keeping harmony and equality between the cultures and languages, in order to keep a balance among the communities.

The name of the country had been changed to the "Democratic Socialist Republic of Sri Lanka", and the Government intends to make promote racial and religious harmony within the nation. Never the less, the minority races feelings of racial discrimination and estrangement are deeply rooted.

Another problem is the caste system remaining in this country. Fishermen have been ranked in the lower caste, and they built up closed communities, each in their own caste.

The policy of the last government being socialism, naturally, trade union activities were encouraged and supported. The demands of the labourers were excessive and their work decreased.

The new government takes action to keep the discipline of the labourers, but it may be time consuming to make improvements. The policy of tightening the national morality, has been taken up by the government, and in addition to the Govt. is trying to solve the problems of the races, religions, caste system and other political affairs. However, at present it can not be said that the social status is in normal condition as a free economical state.

Seventy percent of the whole population are Buddhists who don't like to kill any animals, so most fisherman are Christian and have been lower caste.

In such social circumstances the fishermen are not so active in their work and their fishing ground is restricted to only the coastal water of their village. Consequently they are merely poor and subsistence fishermen.

In the future, development of off-shore and deep-sea fisheries, should be taken in the direction of greater industrialization and capitalization. The above mentioned conventionalities should be overcome. But it may take some time to do it.

3. The Basic Educational Background

Educational system of this country

The education system is shown below:

5 year olds enter primary school and take the following path of education -- 5 years of primary school, 3 years of middle school, 2 years of ordinary level high school, 2 years of advanced level high school, 4 years of university study. During the twelve years from elementary to high school, a state examination should be taken after graduating from the ordinary level high school, and according to its result, the student is given permission to apply to the Entrance Examination for the advanced level high school.

As there are many candidate who want to apply to the University, so there are approximately ten times more candidates than students to be admitted entrance.

The University system was framed strictly so that if a student could not pass the prescribed subjects, he would not be given his degree.

Since the new government took the power of state affairs, much has been paid to educations. Accordingly, three campuses were established in the main city, and as a result, number of campuses have been increased from the former five to eight. Also, all campuses were given independent autonomy. Consequently, their seating capacity were increased quite alot.

However, in a view of the subject matter, the school courses have been divided the literary, commerce and science in the high school and their distribution were shown below:

The literary course	}	75%
The Commerce course		
The Science course		25%

In the University the education had been over emphasized on the literary side so that the students of the faculty of literature and law amount to seventy percent of all the students enrolled.

The new government is encouraging the expansion of scientific and technological subjects to promote the industrial development of the country.

A large number of the graduates who have been educated under such strict circumstances are unemployed.

The industries of this country are based on primary monocultural production of tea, coconut and rubber estates, and secondary industries has not been developed yet.

So the unemployment problem is most important has to be overcome by promoting the secondary industries.

Those who graduated with a degree in the social sciences are in an especially difficult employment situation.

Regarding the organization of fisheries education

The five organizations already established under the management of the Fisheries Ministry are:

Sri Lanka Fisheries Training Institute
Negombo Fisheries Training Centre (Sinhala)
Tangalle Fisheries Training Centre (")
Jaffna Fisheries Training Centre (Tamil)
Batticaloa Fisheries Training Centre (")

Besides, under the supervision of the Ministry of Education, fundamental knowledge of the coastal fisheries have been taught at the middle schools located on the coast.

4. Economic Circumstances

The economy of this country has been supported by three export products, tea, rubber, and coconut. However, rice and wheat have to be imported even though the country is an agricultural one.

Accordingly, the economy of this country is strongly influenced by the price fluctuations in the world market of these three export goods.

At present, this country has been specified as one of the most affected countries by the U.N. and the developed countries are strongly requested to aid this country economically and technologically.

Since the new Government was formed, a liberal capitalistic economy has been advocated, state economic policy was relaxed and the policy of promoting industries and increasing productivity has been developed. For example new policies have been developed such as absorbing the unemployed by creating a free trade zone and introducing foreign capital.

Environment of Fisheries Economy

The fisheries is not developed yet and the annual total catch is 136,000 tons, whereas the total annual demand is about 200,000 tons. The shortage is covered by the import of dry fish, salted dry fish etc., in this country surrounded by the sea.

Therefore the price of fish is higher than that of other foods and, also, the price of fish is increasing at a rapid rate.

The source of animal protein is mainly aquatic products in Sri Lanka as there is little stock breeding. The amount of aquatic products consumed by one person in 1978 was 25.96 lbs., which includes imports.

Seventy percent of population in Sri Lanka are Hinayana Buddhists who like fish better than meat.

It is essential to supply more fish.

On the other hand, increase in producing aquatic products will lead to a saving of scarce foreign currency.

It is necessary to modernize the fisheries by investing much capital, such as the construction of large modernized fishing boats and the modernization

of fishing gear and fishing methods to develop off-shore, deep-sea fisheries.

But present Government policies favor private enterprise so that the development of the fisheries industry is expected to rely on the private fishery enterprises. Especially, the sale of two hundred fifty ton class trawlers and three hundred ton class tuna long liners owned by the Ceylon Fisheries Corporation (C.F.C) to private companies, and the limitation of its activities to "Fish buying and fish selling", in other words, fish marketing activities, are planned by the Govt.. But not one buyer or charterer has appeared so far. One longliner, however, was chartered.

In Sri Lanka, capitalists are very deliberate and they invest in safe industries such as agent businesses, light industries, repair businesses and renting houses. The industries which require big capital are run by government corporations or ones begun in the colonial days with British capital. This is caused by big changes from a socialistic and nationalized economy to a liberal and capitalistic one in their economic policy, in accordance with alternations of political power.

Capital is required in off-shore and deep-sea fisheries and they are risky as well. Hence, it is difficult to stimulate investment in fishery without much government support. For example, it is experienced in inviting applications for thirty 38' fishing boats (11 tons) by a loan of Asian Development Bank. The special incentives to the buyers of these fishing boats are:

- (i) Government subsidy of 35% of the purchasing costs of the fishing boats.
- (ii) Low interest bank loans for the remaining 65%.
- (iii) Supply of the necessary fishing nets and gear at import price.
- (iv) Tax exemption for five years.

The buyers of all of thirty boats were finally settled upon by holding a large scale propaganda seminar to which fisheries related interests and entrepreneurs from all over the country were invited, as well as taking the above mentioned special measures.

5. Environmental Base of Fisheries

(1) Natural conditions,

Sri Lanka is an island country with high lands which project in to the Indian Ocean. The continental shelf is narrow, ten to twenty miles from the beach, and steep. It is extremely shallow off Mannar and Palk strait in the North-western part, and the bottom composition is mud. Wadge Bank (on the southern tip of India) has been playing an important role as a trawling ground, but Sri Lanka will be shut out from this region by the declaration of a two hundred mile economic water zone by the Indian Government in the near future. And, not much can be expected from Pedro Bank in the North-Eastern part of Sri Lanka as it is an extremely narrow fishing ground.

The conditions of the fishing ground around Sri Lanka in the Indian Ocean are as follows:

- 1) It is not fortunate enough to have a sea bottom which causes so-called "up - welling".
- 2) The current is liable to flow in a constant direction and there are a few conditions that the current rip is formed by the reverse current.
- 3) Fishing by small type coastal fishing boats is restricted by the influence of monsoon.
- 4) No flow of big rivers and a deficiency of up-welling lead to lack of nutritious salt needed for fish.
- 5) There is little difference between the rise and fall of the tide which necessitates the taking of policies to cope with this when planning coastal aquaculture.

Those are just some of the conditions of the fishing ground in Sri Lanka, but it is clear that the grounds are not particularly blessed.

- (a) It will be necessary to maintain and preserve the resources of the coastal fisheries by allowing only the taking of a sustainable catch in Sri Lanka's fisheries and, especially, to protect the demersal fish such as lobster, prawn, crab etc..
- (b) Productivity must be increased by the introduction of new species or the development of culture fisheries as many brackish

water areas in the coast are still underdeveloped.

- (c) Developing the fisheries by introduction of fishing boats of 40 - 50 ton class which can stand the monsoon in off-shore and deep-sea fisheries should be considered especially since the Government of Sri Lanka promulgated the 200 mile exclusive water zone. The exploitation of fisheries in the zone should be carried out by Sri Lankan fishing boats. During the monsoon, the sea is bit rough which causes up-welling as well as a current forming good condition for fishing. From the Economic view point, fishing boats of 40 - 50 ton are not required so big capital and running expences are also not much.

(2) Present status of the fisheries:

In Sri Lanka, the total catch of fish was 136,000 tons in 1977. It was not sufficient to meet the demand and around 5,000 tons of fish products were imported from foreign countries.

- (a) Fish catch statistics are provided on the following page. (Table I)
The coastal fish catch is increasing annually. However, the catch of off-shore and deep-sea fisheries is decreasing due to the C.F.C. Tuna Longliners and Trawlers idling in the fisheries harbour. On the other hand, fresh water fish catch has noted increases every year.

- (b) Figures for the export of Marine products is given in Table II.

Frozen prawn and lobster were exported to Japan, the U.S.A and the United Kingdom etc., and Sharkfin and dried cucumber were exported to Singapore and Hong Kong. The export of marine products is increasing rapidly.

- (c) Figures for the import of marine products is given in Table III.

In 1974, the import of marine products was substantial. However, after 1975, the import of marine products was cut down owing to a deficit in foreign currency.

But the new Government has relaxed the import policy. The import of marine products is gradually increasing now.

- (d) Tendency of the price of fish appears in Table IV.

The increase in the total fish catch was not high, while the import of marine products was decreased. In the above circumstances, the price of fish increased every year. Especially, the price of good quality fish is very high.

- (e) Statistics for the Fishing Boats appear in Table V.

There are two 300 ton Tuna longliners and five 250 ton trawlers in C.F.C. Others are nine small 10 - 30 ton trawlers and 11 ton A.D.B loans boat numbering 30.

The other mechanized boats are 3.5 ton and outboard engine boats totaling 2,515 and 7,193, respectively.

Non-mechanized boats amounted to 13,581. These are Oru and Teppam etc..

(f) Ice plants and cold storages appears in Table VI

There are in all 33 ice plants.

3 have a capacity of 50 tons/day, 7 of 10 tons/day, and the others are very small factories.

There is a total of 8 cold storage factories.

In Galle Fisheries Harbour there is a 2,400 ton capacity factory, there are 2 of 1,000 ton capacity factories in Colombo, and the others are small size factories.

Fish catch from 1974 - 1977 (Table I)

Unit = ton

Species	1974	1975	1976	1977
1. Coastal Fishes	99,218	113,044	120,849	123,411
Sear	4,360	3,423	4,602	3,715
Horse Mackerel	8,934	6,064	7,516	8,653
Blood fish	22,132	25,425	23,899	23,159
Shark & Skate	15,478	13,271	15,366	11,135
Rock fish	14,137	14,044	13,099	15,640
Shore sein varieties	28,699	42,722	48,785	54,591
Others	5,478	8,095	7,582	6,518
2. Deep-Sea fishes	2,195	955	539	307
3. Inland Water Fishes	7,539	13,097	12,343	12,863
TOTAL	108,952	127,106	133,731	136,581

Export of Marine Products
(From 1975 - 1978 Nov:) (Table II)

Unit = Thousand Rupees

Country Exporting	1975	1976	1977	1978	REMARK
Australia	321	1,442	5,174	5,999	Prawn
Singapore	5,755	76,987	6,964	16,649	Shark fin, sea cucumber
United Kingdom	475	2,157	734	1,068	Prawn
Germany	308	786	1,398	2,361	Prawn
Japan	10,253	38,872	54,538	142,942	Prawn, Lobsters
U.S.A	3,981	22,067	21,997	27,954	Prawn, Lobster
Others	1,091	3,141	3,981	8,372	
TOTAL	22,184	75,452	94,806	205,345	

Import of Marine Products
(from 1974 - 1977) (Table III)

Unit = ton Unit = Million Rupees

ITEMS	1974		1975		1976		1977	
	Q.	V.	Q.	V.	Q.	V.	Q.	V.
Maldiv Fish	3,349	19	1,710	10.2	1,560	9.1	657,8	3.87
Dried Fish	13,206	30	13,334	33.5	5,095	16.4	2,701.3	5.78
Others	-	0.9	-	0.3	843	3.8	1,766.1	10.18
TOTAL	16,556	50	15,045	44.0	7,499	29.3	5,125.2	19.85

Q = Quantity V = Value

Retail Price of Fresh Fish
at St. John's Market, Colombo (Average Price)

Unit = Rupees (Table = IV)

ITEMS	1977	1978	1979	Remark
Sear	6.46	8.50	9.78	Only January & February are covered in 1979.
Paraw	4.80	6.40	7.18	
Balaya	3.69	4.50	5.10	
Shark	3.09	3.82	4.18	
Red Mullet	3.13	4.24	4.50	
Kumbala	3.23	3.73	4.16	
Hurula	2.55	2.95	3.06	
Salaya	1.89	2.30	2.21	

Number of Fishing Boats at the end of 1978

(Table V)

<u>Fishing Boats with Engines</u>	No.
Tuna Longliner	2
Trawler	14
11 ton (38 ft.) boat	32
3.5 ton boat	2,515
Out-Board Engine boat	7,193
<u>Non-Mechanized boat</u>	13,581

Number of Ice Plants and Cold Storages

(Table = VI)

No. of Ice Plants

Total No. of Factories	33
Capacity: 50 tons/day or more	3
10 tons/day or more	7
Less than 10 tons/day	23

No. of Cold Storages

Total	8
Capacity 2,400 ton	1
1,000 ton or more	2
200 ton	3
Less than 100 ton	2

No. of Freezers

6

(3) The present situation of fisheries related industries

(a) Construction and repair of fishing boats

There are 40 shipyards on the Island. These mostly build 3.5 ton fishing boats. These other orders are mostly for non-motorized boats.

The Cey-Nor Project's shipyard has built a 28 ton fishing boat which belongs to the Institute as a training boat. Technical ability for building fishing boats is improving now.

However, the capacity to construct fishing boats is not enough at present.

The Government is taking actions to improve the fishing boat construction industries. It is expected to get foreign aid also.

It is advisable to provide technical assistance for ship building by foreign countries due to the lack of training facilities in the country.

The lecturers of the Institute are desired to be trained in foreign countries also.

(b) The present status of the fisheries harbour

There are four fishing ports, namely Colombo, Galle, Trincomalee and Tangalle, which are equipped with fish landing facilities and other related facilities.

However, most fishing villages are obliged to pull up the boats to the sea beach, or anchor their boats in the lagoon or the mouth of river.

It is necessary to build fishing ports with fish landing facilities and other necessary equipment.

The Management of the port is to be controlled by the fisherman cooperative society in order to run it efficiently.

(c) Machinery repair factory and parts

Engine repair factories of fishing boats are existent in partial fishing ports but generally repairs are being entrusted to automobile repair factories. Therefore, fishing boats must be brought to Colombo for major engine repairs. Furthermore, it is difficult to acquire parts as they are dependent on imports. Restriction of imports is being relaxed and promotion of imported parts is being conducted by the Government.

And the introduction of mobile repair factories is being considered, and foreign aid is hoped for in order to get the necessary equipment.

(d) Ice making and cold storage facilities

There are thirty three ice making plants in total. There are only three with an ice making capacity of more than fifty tons per day; the others produce ten or less ten tons

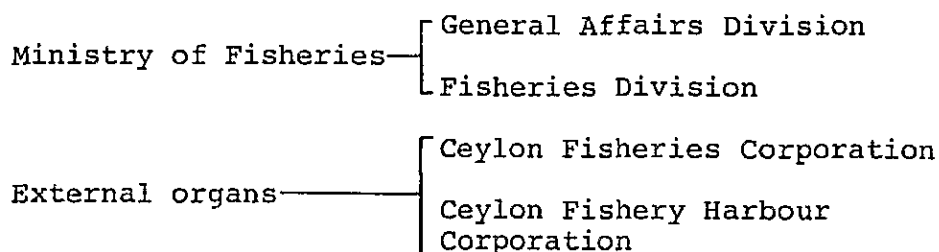
per day. As the demand is not met, the Government is taking a positive attitude towards the construction of new plants, are applications for it from private industries. So it is expected that they will increase sharply hereafter. On the other hand, there are eight cold storage factories which have 5,435 ton storage capacity. As fresh fish is much utilized in Sri Lanka, utilization rate of the cold storage factory of 2,400 ton capacity at Galle Port is low at present.

- (e) As the present situation of fish distribution structure is mentioned in the paragraph on fishery administration, a description is omitted here.
- (f) As the activities of fisheries cooperatives are mentioned in the paragraph on fishery administration, a description is omitted here.

6. Fishery Administration

The Fisheries Division in the Ministry of Industries was independent, and the Ministry of Fisheries was established under the government of Bandaranaike in 1970.

The structure in those days was as follows:



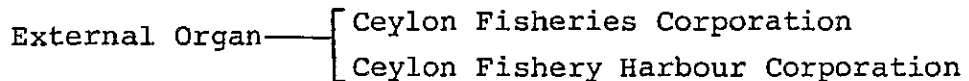
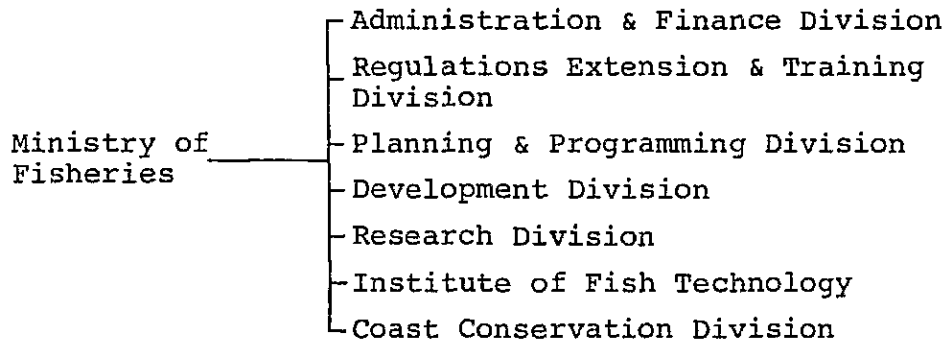
Personnel composition

Minister - Deputy Minister - Secretary - Assistant Secretary - Director - Deputy Director - Assistant Director

Corporation: Chairman - Director - Assistant Director.

As seen above, the Ministry was small-scale with a composition of two Divisions and two Corporations at the time of establishment. At that time, the administrative activities were centered on guidance of cooperatives, extension services, research activities, statistics collection, education and training etc.. Eight years have passed since the Ministry was established and the administration is gradually being replenished, expanded, and infiltrated.

Organization of the Ministry as of January, 1978 is as follows:



- o Further the establishment of a new Training Division in charge of all the business concerning training as well as local Training Centres centering on the Fisheries Training Institute in the near future is practically determined.

Planning the independence of the Ministry of Fisheries and expansion of organization is a positive posture, but the various administrative actions and the present activities are feeble.

In addition inefficient clerical management according to the traditional customs and restrictions of British Colonial days is being executed.

"The first five year fisheries development plan" (1972 - 1977).

This was made as a part of the first five year plan of the nation.

The objective of this plan was to increase the self-sufficiency rate by the improvement of the productivity of the fisheries. That was to increase the annual catch to 170,000 tons which would be 90% of the 190,000 tons, which is estimated to be the total amount demanded.

"The second five year fisheries development plan"

The objective was to increase the total output to 235,000 tons by 1982, and to maintain the 90% self sufficiency rate (forecasting the total amounts demanded to be 270,000 tons owing to the increase of the population).

o To perform the above plan, the following is called for:

(1) Coastal fishery

Mechanization of fishing boats centering on 3.5 ton vessels.

(2) Off-shore and deep-sea fisheries

Introduction of large fishing boats (38',
11 tons).

(3) Promotion of the inland waters fishery

Liberation of fingering in reservoirs and
the modernization and organization of inland
waters fisheries.

o The following enterprises will be carried out in order
to execute the above policies.

(1) Under the promotion of the A.D.B Project.

Introduction of 3.5 ton and 11 ton fishing boats.

(2) Mechanization of fishing boats

Small-type engine - 1,350 units

Outboard engine - 4,438 units

(3) Arrangement and expansion of fishing port and
land facilities

(4) Expansion of ice making and fish storage
facilities

(5) Modernization of the distribution structure

(6) Development of inland water fisheries and
culture fisheries.

(7) Survey for the development of fisheries

(8) The development of propagation and culture
fisheries in the coastal shallow water zone.

o The main activities which are being executed at present are as follows:

(1) Operations aimed at the mechanization fishing boats

Out of purchasing expenses of fishing boat 50% is subsidized for fisheries cooperatives and 35% for individual industries by the Government, and the balance is loaned. This loan funds repayment system involves taking monthly installments from the catch. In all, there are forty shipyards on the island, but the demand is not met as the construction capacity is small.

(2) Operations aimed at the construction of fishing boats, and the inspection, maintenance, and engine repair of fishing boats.

The provision of technical instruction for the fishermen concerning such things as construction of fishing boat and purchase, maintenance and repair of engine is done by the Fisheries Extension Officer. The officers activities were not enough because of the small capacity for boat construction of the shipyards, the shortage of parts for repairing the engines, and the shortage of technical staff and organs of technical instruction and training.

(3) Welfare

Activities are as follows:-

- (a) Accident compensation for death and injury to fishermen.

- (b) Provision of infrastructure facilities such as houses, wells, roads and sheds for migrant fisherman etc..
 - (c) Rescue operation with help from the Police, Navy and Air Force.
 - (d) Acquisition of land for building houses for fishermen.
 - (e) Others.
- (4) The activities of the Fishermen Cooperative Societies

In Sri Lanka the fishermen cooperative societies are under the aegis of the Ministry of Food and Cooperatives, while the Ministry of Fisheries supervises the cooperative indirectly.

The fishermen cooperative societies were established in 1952. In the initial stage, there were 292 Cooperatives on the Island. In 1970, the Government forced the cooperation to amalgamate in order to enlarge them and make their work more efficient.

There are 45 cooperative societies on the Island at present.

The Main features of the project are as follows:

- (a) Mechanization of the fishing boats.
- (b) Supply of fishing gear and other requirements of the fishermen.

- (c) Landing and selling catches from the fishing boats
- (d) Teaching repair and maintenance of the engine as well as the hull of fishing boats to fishermen.
- (e) Giving financial assistance to fishermen.

The activities of the above-mentioned project were not carried out properly, because necessary equipment, instruments, gears, and spare engine parts were lacking. In addition, the progress of the project was not efficient on account of the bureaucratization of the staff accompanying the enlargement of the cooperatives.

(5) Fishery development project

Under the direct supervision of the Director of Fishery, the staff of the same Department were appointed in each district to execute such works as the control of fishing, encouragement of fisheries, carrying out of the fishery development plan, and supervision of the Fisherman Cooperative societies.

The main functions of the project are mentioned below:

- (a) Enforcement of the laws and regulations on fisheries and the control of fishing.
- (b) Drawing the plans of fishery development in each district, and implementation of the plans.

- (c) Guiding and supervising fisherman co-operative societies.
- (d) Construction of roads, construction of houses and acquiring the sites for houses in fishing villages.
- (e) Collecting the repayment of loans from those who had obtained government loans.

The object of the project was to carry out the above, however, the Government staff were generally administrators so that technical fishery advice was not given, and the fishermen were disappointed with the project.

(6) The Project of the distribution of marine products

At first, the activity of the C.F.C. as an autonomous body of the Ministry of Fisheries was carried out in broad fields such as the distribution of fish, fishing, ship building and the supplying of fishing gear.

The fishing section consisted of two tuna long line fishing boats of 300 tonnage, five trawlers of 250 tonnage, and others.

However, almost all of the above boats were moored at Colombo Harbour due to engine troubles or other problems arising on account of their old age.

For this reason, the C.F.C. operation got a deficit account. So selling or chartering these fishing boats to private enterprise, was intended by the Government, and now a tuna

long line fishing boat is operating under charter by a private company in Colombo.

It was planned by the Government to change the activities of the C.F.C. buying fish from fishermen and selling of fish to consumers. Even the ship building section of C.F.C. planned to sell out to private enterprise and the Ceynor Foundation took it over a few months ago.

Fish marketing is the main business of the C.F.C. However, the C.F.C.'s handling of fish was only five percent of the total catch of the country because the fishermen were tightly connected with the middle men and their village bosses. Another cause was the weakness of the marketing system of C.F.C. C.F.C. is hoping to increase on handling of fish upto 50% of total Sri Lanka catch in the near future.

(7) Fishery statistics

The statistical data collected for the use of the fishery administration are:

- (a) Statistics about fishing boats
- (b) Statistics about seasonally moving fishing boats
- (c) Statistics on the fish price at the landing place and the retail price
- (d) Statistics on processed marine products
- (e) Statistics on the fish catch, by species

Since the above statistics were collected by only 14 staff members of the Statistical Division, the catch statistics by species and weight were roughly estimated by eye measurement.

Therefore, there were many deficient points to be considered when using these statistics as data, when designing plans for fishery development.

Hereafter, to improve the collection of statistics on fisheries, it is expected to carry out combined statistics by the fishing method with fish species, and it is advisable to collect fisheries economic statistics.

- (8) Cooperations from foreign countries and international organizations
 - (a) Finance from the A.D.B.
 - (i) The items of the project
 - 200 fishing boats of 28' length, 3.5 tons with engine.
 - 30 fishing boats of 38' length, 11 tons with engine.
 - (ii) The selling condition of these fishing boats

For the hull and engine.

Subsidy funding was given for 50% and 35% of the whole price of the boat to fisherman cooperatives and individual industries respectively.

Ship buyers will be provided the remaining of the financing in the form of low interest loans from the Government Banks.

For fishing gear, and necessities

They are supplied by the Government
at import price.

The way of repaying the loan

In the case of 28 feet fishing boats,
it is to be paid back completely within
7 years.

In the case of 38 feet fishing boats
it is to be paid back completely within
10 years.

Each buyer was provided a tax holiday
for 5 years.

In distributing the above fishing
boats to the enterprises, the 28 feet
fishing boats were easily sold out, but
it was very difficult to sell all 38 feet
fishing boats without the help of a great
propaganda campaign by the Government.

In order to improve the fishery ad-
ministration of these buyers, their catches
were collected together and sent to Colombo
by an apex which was established by each
5 ship owners. The result of this activity
were quite successful and encouraged ship
owners.

- (b) The project by the Cey-Nor Development
Foundation Limited (Assistance of Norway)

The activities of the project:

- (i) Building of fishing boats

- (ii) Processing of marine products and their exporting.
- (iii) Ice plant and cold storage.
- (iv) Fishing net factory
- (v) Operation of fishing.

The activities were carrying out at Jaffna and Karainagar. In the future, the establishment of like projects are being planned on four places in island.

(c) SIDA/FAO Project

The Project was established with financial assistance from the Swedish Government and technical Cooperation from the F.A.O.

The period of the Project was planned from 1976 to 1981.

The purpose of the project is to improve the system of distribution of marine products and the techniques of processing marine products.

(d) Assistance of the People's Republic of China

Fish culture in fresh water, such as hatching and liberation of fingerings of carp and grass carp, began to be practiced in collaboration with the Govt. of China in 1972.

(e) Technical cooperation activity by Japanese Government

Detailed activities will be described afterwards, so the summary is described here. For the period from 1961 to 1967, under an agreement between the government of Ceylon and Japan, the fisheries technical cooperation project was completed at Negombo Fishery Training Centre.

Owing to the efficient completion of the above project a new project was proposed to the Japanese Government by the Sri Lanka Government to train skilled technicians for the development of offshore and deep sea water fisheries, and for technical assistance for the research of off-shore and deep-sea water fisheries development. The period of the project was from 1974 - 1978. The contract was extended from 1978 to 1980.

III. PLANNING OF THE PROJECT

1. Object of the Project

It was considered in deciding the objectives of the Project, that we had to study the socio-economic, educational and administrative conditions of the country and, especially the present condition of related industries of fisheries in order to understand the background of the request for the project.

It was necessary to carry out a survey covering a wide range to get proper understanding of the objectives of the project. Many meetings and discussions were held amongst the Secretary, Director, the other officers in charge, and the Japanese advisors. There were various consultations from the Polytechnical Training Institute, University, Vocational school, Department of Education, and so on.

(1) Present condition of fisheries in Sri Lanka

Fisheries in Sri Lanka are almost all coastal. The boats used are 28 feet (3.5 gross tons) motorized ones, which were introduced only a few years ago and non-motorized boats including canoes and rafts.

On the other hand, the Ceylon Fisheries Corporation (C.F.C) has a few 250 gross ton class trawlers and a few 300 gross ton class tuna long-line vessels. But these could not be kept running properly due to the lack of proper arrangements in addition to the underdevelopment of related industries.

They are lying idle now and up for sale, but no one wants to buy them. One, however, was chartered.

(2) Introduction of fishing techniques

Suitable fishing methods have to be selected for Sri Lanka which introduce modern fishing techniques which are not too difficult, and can be propagated easily to this country.

These were also to be considered the size and scale of capital to be invested by the local fisheries enterprises must also be considered.

It is quite important to study what kind of fish to be chosen, what fishing method is most suitable in the country, technically and economically. Taking the above into consideration, four important fishing methods (big mesh size drift gill net, tuna long line, trawling and skip-jack pole and line) were chosen carefully.

And also it was considered that the introduction of fishing technique should start from the development of offshore fisheries and fishing which is operated within the 200 mile economic zone by less than 100 gross ton fishing vessels.

(3) Level of trainees

Fisheries education in Sri Lanka was begun in 1961 by the Negombo Fisheries Training Centre in collaboration with the Government of Japan. And three more fisheries Training centres were established in 1973.

On the other hand, very fundamental fishery education was begun in 1973 as a vocational class of junior high school in the important fishing regions of the coastal area.

Since the Sri Lanka Fisheries Training Institute is the highest seat of learning for fishery in Sri Lanka, the Government of Sri Lanka hopes to produce the pioneers for the development of the off-shore and deep-sea fisheries which requires scientific and technical knowledge and experience.

Therefore, qualification of candidates has to be limited to those who have completed a science course at the G.C.E. (Advanced Level). Hence, applicants are not available from sons of fishermen who have common sense for fisheries.

These trainees have to start from the basics in learning the basic knowledge of the fisheries, and they have to start by learning swimming and rowing.

(4) Social and religious problems

There were strong pressures from some people at the first stage that trainees should be selected only from the 2nd and 3rd sons of large families of fishermen.

But it came to be understood that if there had been such a restriction, there might be few applicants and good trainees would not be selected. Moreover it was explained that the students in the Fisheries Universities in the developed countries were invited with equal opportunity and this helped them understand.

It had been worried that the range of applicants might be limited by traditional custom (caste regime), but there has not been much anxiety among the younger generation.

2. Planning of the Project

The project was planned under considerations about the request of the Government, present situation of fisheries administration, present condition of fisheries research activities and the fisheries training activities, etc., in Sri Lanka.

- (1) Introduction of useful modern techniques can be applied immediately

The Ministry of Fisheries requested that students be trained as pioneers and sea-going experts for the development of fisheries.

In response to this request, the Training Institute took the character of a vocational training institute, and weight was placed on giving students on-board training.

These were more hours devoted to practical training including both training on-board and in the Institute than class hours. Some important fishing methods which are expected to be developed in the country were selected carefully and taught strictly to the students.

- (2) Introduction of suitable techniques for the present conditions

Coastal fishery is the main fishing in Sri Lanka. Fishing operations are mostly carried out within 25 miles from the beach and a large number of non-motorized boats are engaged in this area.

It would be difficult to develop the fishery from a simple coastal fishery to a deep-sea fishery immediately.

Development process of fisheries in Japan was a same course from coast to off-shore and, gradually, to deep sea.

It was considered to try to plan the improvement and modernization of coastal fishery first, and the development of the off-shore fishery by 50 - 100 gross tons fishing boat second.

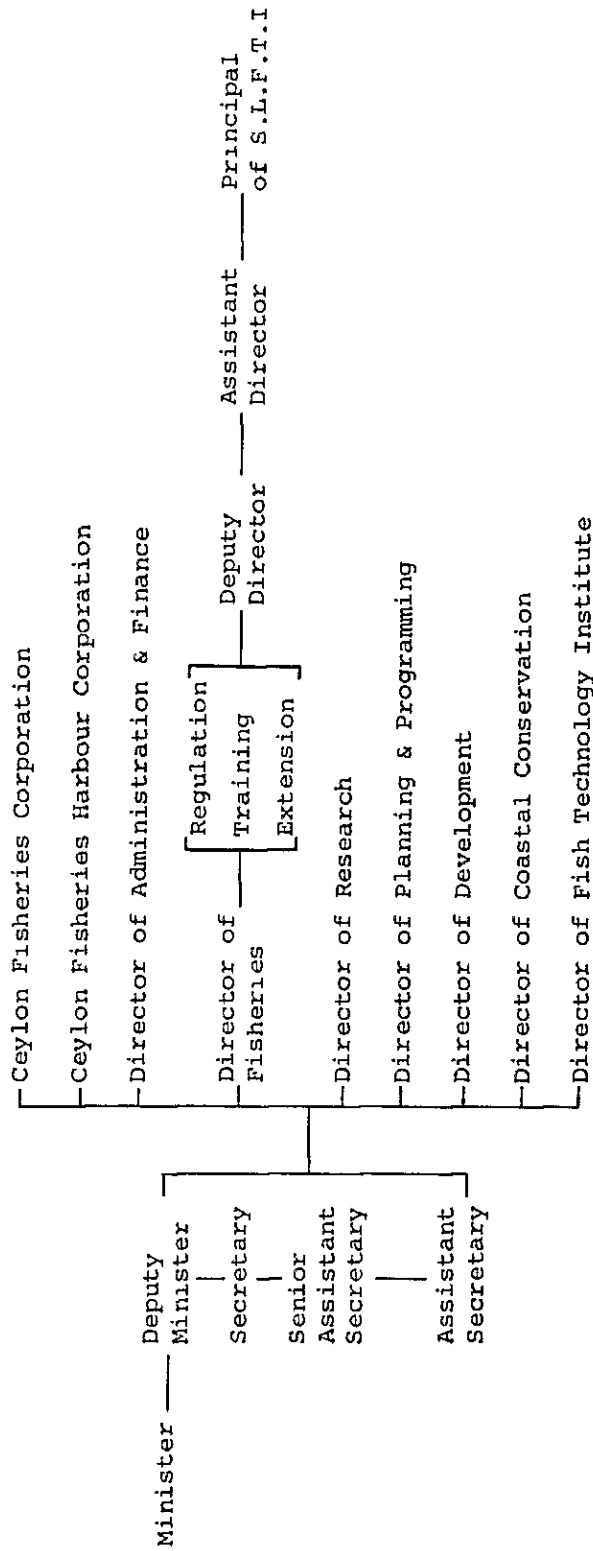
- (3) Deep-sea and off-shore fisheries should be developed as commercial industries

Now, Sri Lanka fisheries are almost all coastal fisheries which are operated as subsistence jobs by the fishing households. However, the off-shore and deep-sea fisheries have to be developed as a commercial industry. Because it requires larger capital, modernized techniques, and high cost labour.

From the view point of technique it is quite necessary to have knowledge of navigation, seamanship, oceanography, meteorology, theory of fishing grounds and biology etc.. And, also, it is required to have knowledge and experience in the selection of fishing grounds and their environmental conditions. In addition, the students were taught fisheries administration and basic knowledge of the fishing industry for the purpose of producing management staff.

IV. FUNCTIONAL SET UP OF THE PROJECT

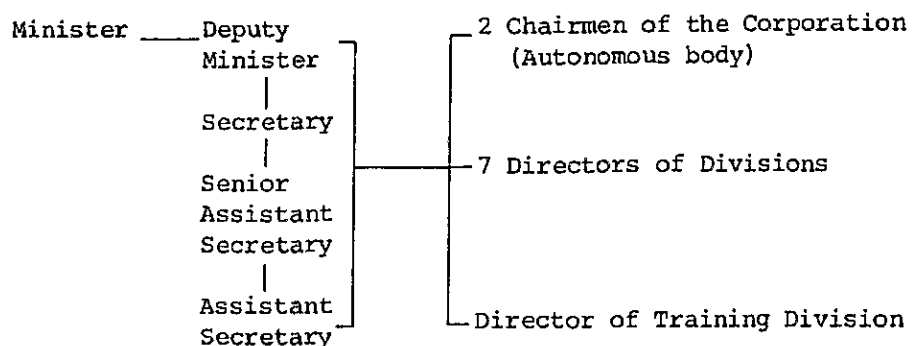
1. Functional Set Up



NOTES (1) The Principal of S.L.F.T.I is a subordinate position to the Assistant Director as shown above on the chart of the functional set up. Administration is managed by this organization so the administrative power of Principal was extremely weak.

(2) Therefore, advice has been given several times to the authority that the position of Principal of S.L.F.T.I ought to be elevated to that of a Director post.

2. Expectable New Organization



NOTE: The Project Formulation Team from Japan came Colombo in November, 1978. The Team also recommended on this strongly. The Minister of Fisheries, Director of Establishment and Ministry of Public Administration had agreed already, so it will be decided formally by the Cabinet Council shortly.

3. Various Meetings in the Institute for Management

The following meetings are held regularly for the smooth management of Institute.

(1) General meeting

Institute staff meeting

Japanese adviser meeting every monday

(2) Meeting for management

Leading member's meeting (Director and other senior officials concerned)

Management meeting (Principal and Sri Lanka staffs, Japanese Chief Adviser and other advisers)

Meetings of each course

The training vessel annual plan meeting (Director, Deputy Director, Director Research, Principal, Captain, Master Fisherman, Sri Lanka staffs, Japanese advisers)

Meeting on the training vessel operation program for each trip (Principal, Captain, Sri Lanka Staff, Japanese advisers)

- (3) Meeting by each theme (The persons concerned)
- (4) Prospectus

Contents are the object of establishment, Aid Agreement, organization, programme for training, the public service regulations and the year's events etc,. This was published already.

4. Practice of Education and Training

- (1) The kinds and terms of each course

- (a) Regular Course

Fishing Course 2 year

Engine Course 2 year

NOTE: Sinhala classes and Tamil classes are adopted every other year in the regular course.

- (b) Postgraduate Course 1 year

NOTE: Some graduates of regular courses are selected for participation.

- (2) Objectives

- (a) Fishing Courses

Not only basic knowledge of coastal, off-shore and deep-sea fishery but also techniques of navigation and seamanship, etc., which are required for operating a 50 - 100 gross tons fishing boat are taught.

(b) Engine Courses

Techniques for chief engineers of 50 - 100 gross tons fishing boat are taught.

(c) Postgraduate courses

The technical side of fishery science and machinery will be stressed. Higher techniques and knowledges that are able to be taken up by lecturers of the Institute, research officers of the research division and managers of fishing enterprises will be taught.

(3) Awarding of qualification and title.

(a) Diploma are given for each course

(b) Fishing Courses

Certification of the following subjects are given to the graduates when they have passed the examination:

Fishing gear

Fishing methods

Navigation

Seamanship

Fishing boats

(c) Engine Course

Certification of the following subjects are given to the graduates when they have passed the examination:

Thermodynamics

Machinery designing

Machinery drawing
 Machinery tools
 Refrigeration & pumps
 Main engine
 Fishing boats

(4) Qualifications for entrance

- (a) Graduates of the science course of senior high school (G.C.E.A.L.)
- (b) Graduates of the Fisheries Training Center under the aegis of the Fisheries Ministry having passed the science course of an ordinary high school (G.C.E.O.L.)

NOTE: Entrance examinations are open and successful candidates are selected from these with higher marks.

(5) The number of trainees

(a) Regular Course

	<u>Fishing Course</u>	<u>Engine Course</u>	<u>Total</u>
1975 (Sinhala Class)	10	10	20
1976 (Tamil Class)	10	10	20
1977 (Sinhala Class)	12	12	24
1978 (Tamil Class)	12	15	27

(b) Postgraduate Course

Nil at present.

- (6) Annual Practice of education
- Terms Three term system
- Vacations 25 days a year
 at the end of the year, 10 days
 In the Spring, 10 days (New year Sinhala & Tamil)
 In the Summer, 5 days
- Hours of class ... More than 1,600 hours over w 2 years.
- Language in the class Singhalese is used in the Singhalese Course.
 Tamil is used in the Tamil Course.
 English is used occasionally.
- Examination A term examination
 A year examination
 A graduation examination
 A graduation thesis
 Supplementary examination ...
 (If anybody got under 50 points he must take this exam,)
 Remaining in class ...
 (When anybody fails a supplementary exam. he must remain in the class)
 Leaving school ...
 (They may be made to leave school by reasons of ill health or bad-behaviour)

(7) Hostel arrangement

All trainees must stay in the Institute's Hostel.

(a) Condition of the Hostel

One room and a two fold bed are given for two persons. A pair of desk and chair is given to each person.

Subsistence allowance

Rs. 8/= was given per day for each person from 1975 to 1978. It was changed to Rs.10 from 1979.

Discipline

Trainees are supervised strictly by the Warden under the Hostel Regulations.

Extracurricular activity

Gymnastic exercises every morning and evening, sports, cleaning of the premises, cultural activity and reading are done under the control of the Warden.

Health and sanitation

Trainees health is taken care of sanitation and also the safety when they have practice on board and workshop. Medical examination for entrance to the Institute is undertaken by the Government Hospital. Entrance is permitted with reference of the diagnosis. Special lectures in personal hygiene are taught by Visiting Lecturers.

(8) Lecture on related subjects by visiting lecturers

Navigation, Oceanography, Meteorology, Biology (esp. ichthyology), Industrial Mathematics, Electronics, Regulation of fisheries, System of fishermen co-operative Society, Hygiene, Radio telephone and English etc, are taught to students by the visiting lecturers. Teaching hours are 40 - 50 hours for each subject.

NOTES: (1) One important problem, is having Navy Officers come to give lessons on Navigation. It is quite necessary to recruit a regular Navigation Lecturer, because Navigation is one of most important subjects in the fishing course.

(2) Visiting Lecturers are dispatched from the University of Sri Lanka, The Ministry of Fisheries, Navy and the Fisheries Corporation etc.. Eleven lectures are participating.

(9) Curriculum

(a) Principles

Balance between theory and practice in the training

The Institute was established under the aegis of the Ministry of Fisheries. The request was for training of students by the Institute to produce the pioneer technicians for the development of fisheries, especially off-shore and deep-sea fisheries.

The curriculum construction, therefore, was planned to train the students to be

Professionally skilled technicians. The rates of class room work and practice was 40% and 60% respectively.

Training at sea is provided to the students for 8.5 months for the fishing course, and 3 months for the engine course. In the case of the engine course, the students have to get one month practical training at a suitable workshop outside of the Institute.

The curriculum was attached to the "Prospectus of the SLFTI".

Training to students starts with very fundamental knowledge and then proceeds to more advanced theory.

The students have no knowledge of fishing. The fishing industry in the country is simple and carried out by the fishermen's families. So the curriculum and syllabus of the fishing course is arranged to train students to get fundamental knowledge in the first year, and then proceed in the second year to more sophisticated theories concerning off-shore and deep-sea fishing techniques, fishing gear, fishing methods for the deep-sea fisheries, and also celestial navigation, electronic aid navigation, and so on.

In the engine course, the curriculum and syllabus were arranged to train main marine engine at first because a small fishing boat has only a main engine. However, the modernized and large scale vessel will have to be equipped with various auxilliary engines and other equipments, so training on them is also needed.

The standard of the Training

The students are G.C.E. (A/L) qualified. The Institute is the highest training organization in Sri Lanka on Fisheries. The Institute is expected to be elevated to the fisheries faculty of the University ultimately.

The graduates of the Institute are the pioneers for the development of fisheries in Sri Lanka and they will function as Captains, Chief Engineers, Managers of fishing companies, and also as fisheries officials of the Government.

The students are taught modern fishing techniques and also the management methods for fishery industries.

(b) Construction of the Details of the Curriculum

The curriculum and syllabus were provisionally prepared at the JICA H.Q. These were almost of the same standard as a fisheries University in Japan. The curriculum covered many subjects and provides for 60% theoretical courses and 40% practical courses. And the training on board was only two months.

A survey was conducted to adjust and apply it to the actual needs of the country. Discussion were held by the Advisers with the Government officials of Ministry of Fisheries, the professors and lecturers of the University and Technical Training Institutes, the Department of Education, and the Department of Pre-vocational Education etc.,

After such surveys and discussions the curriculum was drastically changed as aforesaid. Main features of the curriculum are as follows:

FISHING COURSE

Technical subjects 80 - 90%	}	Navigation, Seamanship 35%
		Fishing Method 40%
		Fishing Gear 25%
Related subjects 10 - 20%	}	Oceanography, biology etc., to be taught as fundamental knowledge in the first year class, - 20%
		And more technical subjects - S.S.B, Radar, Thermo- dynamics, etc. - will be taught in the second year class - 10%

ENGINE COURSE

Technical subjects 80 - 90%	}	Main Engine 70%
		Auxiliary Engines 30%
Related subjects 10 - 20%		- As same as the Fishing Course

Swimming and Boating

The students were trained in swimming and boating in the first year class in order to become familiar with the sea and to install confidence in them, because they have no experience with the subject.

Practice at Sea for the Fishing Course

Sea practice was conducted for a total of 8.5 months during two year course. The Institute has 3 Training boats; practical training is as follows:

"SUDAYA" (11 ton)

The training is conducted for the first year class to gain fundamental knowledge of the ship and its operation. Coastal navigation and coastal fishing operation.

The Trips were mostly one day or one night return trips.

"MUTHUKUMARI" (28 ton)

Unfortunately the boat is still under construction at the Cey-nor Ship yard in Jaffna. It is expected to reach Colombo in April, 1979.

She has a drift gill net, long line fishing, trawl fishing and purse seine fishing facilities. So that she is expected to train the students in many fishing methods together with navigation and Seamanship in the off-shore and in the coastal sea. It is to be engaged for the research work on off-shore fisheries as well.

"SAMUDRA MARU" (76 ton)

She has been engaged in the comprehensive sea training of the students, such as fishing, navigation, seamanship and research work since October, 1975.

The ship provides the final brush-up for students on practical training on the sea.

Practice at sea for the Engine Course

The curriculum for the Engine Course has

been designed to have three months of sea practices.

"SAMUDRA MARU"

Paying primary attention to giving students practical experience in engine operation and maintenance, students are also given practical training on tuna longliner, Skip jack pole and line fishing and stickheld dip net fishing, and so on.

"MUTHUKUMARI" (28 ton)

She is expected to start training operations by April, 1979.

The students will be given such training as drift gill net and small size trawl fishing, which are expected to be important fishing methods in Sri Lanka.

The students will be taught the operation, maintenance and repair of many modern fishing equipment which are installed on this boat.

(10) SYLLABUS

The syllabi were also modified and adjusted according to experience gained in Colomobo as the result of the curriculum construction drastically changed to give more practical lessons to the students.

The syllabi were arranged to show the contents and items of the subject to be taught to the students. They were broken down in to four stages "Subject" "Divisional Subject", "Sub Divisional Subject" and "Specific Items". The syllabi were attached to the "Prospectus of the S.L.F.T.I." which is to be printed in English.

(11) Teacher's Guide (or Teacher's Note)

This can be said to be a guidance for the teaching of students. The guide shows each of the following matters by specific items.

- (a) Specific item ... Concerning to the coverage, depth, main point, etc,.
- (b) Teaching methods ... Text books, material, reference books, etc,.
- (c) Time to be used.
- (d) Attendance and absence.
- (e) Comments by the Lecturer and Adviser.
- (f) Other useful comments.

The purpose of the "Teachers Guide" is to be used for improvements in the teaching of subjects in the future and for the reference of new Lecturers.

On the other hand, it could be used by the supervising and management staff.

(12) Research Works Activities

- (a) Observations on oceanography, meteorology and biological matters are carried out by the students on the training boat and all surveyed items are recorded in the "Research Book". The data will be compiled later on.
- (b) Preliminary Survey for the Settlement of the Sri Lanka Fisheries Training Institute. The present status of fisheries in Sri Lanka such as development of the fisheries, present

status of the fisheries, modernization of fishing methods, fishing operations and fisheries policies, activities of Fishermen's Co-operative Societies were studied by the advisors.

In addition to the conditions and the training in the Poly-technical Training Institute and similar Institutions and pre-vocational training in Middle School etc, were observed by the advisors.

It is quite important to know the background circumstances for the establishment of the Sri Lanka Fisheries Training Institute. Social status, economical conditions, and industries related to the fisheries etc. were observed.

The above surveys were carried out for the purpose of the establishment of the S.L.F.T.I to design curriculum, syllabi and also to select the subjects to be taught by the Visiting Lecturers.

Several discussions were held between the Japanese Advisers and the Officials of Ministry of Fisheries and others concerned.

- (c) Collecting data for teaching, and providing guidance for the students on survey activities and their graduation thesis.

Fishing Course

It is quite important to study the present status of the fishing industry and other circumstances of the country to meet the

requirements of the Project.

Moreover, the students must be familiar with fishing conditions of their country. Therefore, a field surveys to gain a knowledge of the situation of the fisheries were carried out by the students and lecturers under the guidance of Japanese Advisers.

The result of the Survey was of course fed back to the teaching materials, and was filed into the data bank of the Sri Lanka Fisheries Training Institute.

"Subjects and Meeting for Reports"

- (1) The present status of the Skipjack pole and line fishing in the coastal area.
- (2) The present status of Tuna longlining in the coastal area.
- (3) The large mesh drift gill net in Sri Lanka.
- (4) Small trawlers in Sri Lanka.

The result of the surveys were compiled by the students and were reported at the report meeting.

Engine Course

To give training to students at other Institutions and workshops, practical training was given at the following workshops.

In 1977 ... Ceylon Government Railway
(The First Batch) Workshop, Ratmalana.
(1.5 months)

In 1978 ... at the Workshop of the
(The Second Batch) Colombo Port Commission,
Kochikade, (2.0 months)

The reports on the results of the workshop study were made by the students and the reports were read by the students at the meeting. The reports were filed in the data bank of the S.L.F.T.I. It is expected to extend trainings on related sectors, such as Cold Storage, Dockyard etc..

(13) Fundamental Survey for the Development of Aquaculture in Sri Lanka

The Japanese Survey Mission for the Development of Aquaculture in Sri Lanka came here thrice.

The Survey Report "Investigation Report on Establishment of an Aquaculture course in the Sri Lanka Fisheries Training Institute" was submitted to the Govt. of Sri Lanka.

The Government of Sri Lanka has made a "Master Plan for the Development of Coastal Aquaculture in Sri Lanka" and plans to establish a training course in Aquaculture in the Institute.

5. Activities of the Institute

(1) General

The Secretary and other officials of the Ministry of Fisheries took steps to expedite the construction work of the Institute. Especially to expedite the opening of the Institute, the priority was given for the construction of offices, and class rooms. This created handicaps on the workshop for the engine course, because the

budgetary allocation was consumed during the initial two years and finance was not available to install the machines and equipment in the workshop for the engine course.

The opening ceremony was held on the 7th of April, 1975 by the Prime Minister Mrs. Sirimavo Bandaranayake. However, the hostel for students was not completed at that time. So the inauguration of the classes had to be postponed to the beginning of June, 1975.

Under the above circumstances, the lecturers were obliged to install the machines themselves and students worked with Lecturers. However, the engine performance test room has not been completed as yet. To complete the installation of machines may take several months because the budgetary allocation was made in the beginning of January, 1979 in the new Budget.

Therefore, the training for engine course students was affected at times. The students had to go to the Negombo Training Center to get training there.

On the other hand the construction of the auxiliary training boats had been much delayed causing difficulties to the students for training in trawl fishing, drift gill net etc,.

There were many obstacles, such as vacancies of the staff, difficulties in the clearance of equipment sent by the Japanese Govt., and difficulties in getting spare parts locally etc,.

Inspite of the above, the running of the Institute is appreciated by the Authorities.

(2) Students

Item	1st Batch	2nd Batch	3rd Batch	4th Batch
	Sinhala	Tamil	Sinhala	Tamil
No. of Applicants	120	44	80	61
No. of Candidates seated for exam.	88	32	73	44
No. Interviewed	38	32	61	38
No. entered	20	20	24	30
No. graduated	17	12	July 1979	July 1980

The above table shows the situation of the students.

The second batch was not well advertised because of a strike in the Govt. Press Corporation at that time. Some students are remaining. And they will be given supplementary exam.

One more problem with the 3rd Batch Fishing Course, was that six students dropped out in their first year class. The reason was that one student organized a resistance action against the training boat's captain and lecturer.

(3) FLOW CHART (on the following page)

Flow Chart

Project flow	Preparation phase						Implementation phase							
	'60	'65	'70	'71	'72	'73	'74	'75	'76	'77	'78	'79		
Progress of project			• Cooperation requested			• R.D. signed	• Agreement concluded	• Sri Lanka Fisheries Training Institute opened • Training of first batch started • Training on board by Samudra Maru started	• Establishment of aquaculture course requested • Training of second batch started	• First batch graduated • Training of third batch started • R.D. for extension signed	• Cooperative period extended two years • Training of fourth batch started			
Input					• Survey mission dispatched from Japan	• Survey mission dispatched from Japan • Building work of school house started	• Survey mission dispatched from Japan • First batch of experts dispatched from Japan • Materials and equipments contributed first time • Lecturers appointed • Principal appointed • First batch of trainee selected • Shipbuilding of eleven ton boat proposed • Samudra-Maru was delivered	• First batch of scholarship dispatched to Japan • Shipbuilding of twenty eight ton boat started • Second batch of scholarship dispatched to Japan • Director and Principal dispatched to Japan	• Second batch of trainee selected • Deputy Director dispatched to Japan • Materials and equipments contributed second time • Assistant Director dispatched to Japan	• Aquaculture course establishment survey mission dispatched from Japan. • Third batch of scholarship dispatched to Japan • Third batch of trainee selected • Materials and equipments contributed third time • Training on board by eleven ton boat started • Project evaluation done • Materials and equipments contributed fourth time	• Materials and equipment contributed fifth time • Project formulation survey mission dispatched from Japan • Fourth batch of trainee selected			
Output					• Report of survey mission presented				• Syllabus prepared	• Report of aquaculture course establishment survey mission presented • First batch of trainee graduated, employed by UNDP and private co., due to cancellation of Norwegian Trawler plan. • Project evaluation report presented. • R.D. for extension signed.	• Six of first batch graduates employed by Japanese freezing carrier • Second batch of trainee graduated • Four of each first and second batch graduates employed by Hoko Suisan • Twenty eight ton training boat launched			
Related project	• Negombo Fisheries Training Centre established by cooperative agreement between Japanese and Sri Lankan Government.						Fisheries Development Five Years Plan						Second Five Years Plan	
							FAO/UNDP Fisheries Project							
							ADB Project							
							Cey-Nor Project							
							Chinese Inland Fisheries Project							
							SIDA/FAO Project						SIDA/FAO Project	
														[Reference] The Norwegian aided Trawlers Plan and tuna longliners plans aided by The World Bank and CIDA had been considered in 1977, but both were cancelled afterward.

6. The Problems Caused in the Course of the Institutes Operation

A brief of the activities of the Institute is shown in the flow chart. Many problems happened during this period. However, the main problems were described as follows:

(1) The postponement of the opening of class.

The Agreement was signed on the 16th April, 1974 in Colombo. However, the Opening Ceremony was postponed one year, and the opening of the class one year and two months, due to the delay of the construction of the building. Even the opening ceremony was held in the half way constructed artifice. So that class were given in the midst of the loud noise of the construction work.

Especially, the construction of the workshop for the Engine Course was delayed very much. Engine course students had to go Negombo Fishery Training Center to get engine practice.

(2) On-board practice for Fishing Course students was delayed very much.

The Training Vessel "Samudra Maru" provided by the Japanese Government was handed over to the Govt. of Sri Lanka in December, 1974 at Colombo Harbour.

Suggestions were made several times by the Japanese Adviser that the Crew for the "Samudra Maru" should be recruited from civilians as the Institute own crew. However, there was not available such a qualified person with a certificate of Navigation, and also a character good enough to be a Lecturer of the Institute. It was too difficult to recruit such suitable person under the salary scale of the Ministry of Fisheries.

It was decided to request the Navy to provide the crew for "Samudra Maru".

On the other hand, the Ministry of Fisheries did not have any code concerning the "Scheme of Recruitment" for the ship's personnel and also no regulation for the allowances for the crew on board.

Negotiations on the monetary allocation for the crew of "Samudra Maru" were made several times between the Ministry of Fisheries, Navy, and Public Administration. It consumed a long time. Finally, allowance for the crew on board, food allowance, privileges for liquor and tobacco etc, were decided in October, 1975.

After the above, all the crew were provided from the Navy.

- (3) All the crew of the "Samudra Maru" were Navy personnel.

Recommendations that the crew of Samudra Maru be recruited from civilian as the Institute own crew were made several times to the Director of Fisheries by the Japanese Chief Adviser. But the results were negative.

It is quite important to consider that the crew of Samudra Maru were Navy personnel who have not experience in fishing, and also may not have interest in engaging in fishing operations.

Therefore, strong recommendation were made to the authority by the Japanese Chief Adviser as follows:

Concerning the crew for Samudra Maru, the

Captain and Chief Engineer had to gotten from the Navy owing to much difficulty in finding qualified civilians, however, it is quite necessary to recruit other crew from fishermen or the graduates from the Negombo Fishery Training Center because the Samudra Maru is the Fisheries Training Vessel.

But this was refused by the Navy Commander because keeping discipline between civilians and Navy personel is difficult.

- (4) The delay of the construction work of workshop.

The construction of the workshop was delayed a long time. It caused much difficulty in training the engine course students.

Especially, the most important engine performance test room was not completed yet. The installation of the dynamometer and engine etc, is not yet completed. Because the budget for installations of machinery was deficit for a long time. At last it was provided in the 1979 budget. Even now, the installation work goes on.

Even with the above difficulty, the engine course lecturers have done much other works such as machine-tool installation, material testing machines installation and other forging and welding machinery installation, using students as their assistants.

- (5) Delay of the construction of the Auxiliary Training Vessel.

The Govt. of Sri Lanka provided two auxiliary training boats for the Institute.

One is an 11 ton (38 feet) vessel named "Sudaya" on which construction was started in May, 1974 at

Cey-nor Shipyard in Jaffna. Construction work was very slow, and she was cruised to Colombo in June, 1977.

Now, she is used for training the first year class on coastal fishing and coastal navigation, etc..

The other is a 28 ton (50 feet) vessel named "Muthukumari". She was settled in her keel in June, 1975 and launched in December, 1978. She may be cruised to Colombo in April, 1979.

She has multi-purpose fishing facilities, such as drift gill net, long line, trawl and purse seine fishing equipment.

It was desired to begin the training as soon as possible, because the Samudra Maru is not suitable to do any of the above fishing except long line. But it was too delayed; it took nearly four years for construction.

She is the biggest fishing boat constructed in Sri Lanka, so that, the launching ceremony of the ship filled a big space on the newspaper.

Under the above circumstance, the training for students of Fishing Course were affected very much. The students had to go on private fishing company's boats to get training on trawling and other fishing operations.

Now, the Institute has three training boats, the Samudra Maru, Muthukumari and Sudaya. The "Samudra Maru" is equipped with skipjack pole and line fishing and tuna long line fishing facilities.

She is suitable to train students on celestial Navigation and Seamanship on the deep sea, together with Oceanography, Meteorology and Biology observation work.

"Muthukumari" is equipped with drift gill net, long line, trawl, Purse seine, which are expected to be used in the off-shore water in Sri Lanka. Therefore students can be trained in these important fishing methods in Sri Lanka together with coastal and celestial navigation and observatory works.

"Sudaya" is mainly used for training on coastal fishing. The students haven't any experience about the sea. So the first year class students go to sea on the "Sudaya" to get sea experience together with coastal Navigation etc,.

Combined fishing operations using the three training boats, "Samudra-Mar", "Muthukumari" and "Sudaya" is carried out. For instance, Muthukumari and Sudaya will engage in purse seine operations and catch live bait which is required by the Samudra Maru for skipjack pole and line.

(6) Shortness of the training period of the Institute.

The training period of the students is two year course which is not enough for training of the students on theoretical and practical aspects of fishery.

Especially, the graduates were expected to be well trained and skilled master fisherman immediately after graduation. However, the period for sea training is 8.5 months in the 2 year fishing course.

In the future, it is being considered to extend it more years. Because, the Institute will be elevated as a fisheries faculty of the university.

At present, it is recommended to give a chance to the graduates to get more experience at sea and to prepare them to take the examination for the certificate of Navigation.

Now, more than fifteen ex-trainees are apprenticing in a Japanese fishing company. When they get sea period, it is recommendable to come back to Sri Lanka and join to the fishing company in Sri Lanka or Government works and other fishery related industry.

V. TASKS TO BE PERFORMED BY THE END OF THE AGREEMENT

1. Extended Period Was Two Years.

When the Japanese Evaluation Team was in Colombo in November, 1977, the Government of Sri Lanka requested to the Government of Japan that the extension of Agreement be for four years. However, the extension of period was fixed at two years.

It was suggested that the project be handed over smoothly to the Sri Lanka staff during this period.

2. Tasks to Be Carried Out During the Two Year Extension.

(1) The functional set up of the S.L.F.T.I should be expanded.

(a) The Principal post will be elevated.

The functional set-up shown the Principal's position as follows:

Director of Fisheries - Deputy Director
- Assistant Director - Principal of
S.L.F.T.I.

The Principal had to contact the head office even for very minor matter, so that administration work was quite complicated and time consuming. Now, the Government is preparing to establish the Division of Training, and the Director of Training will be posted as the Principal of S.L.F.T.I. The progress of the above was confirmed by the related departments.

It is recommendable to have a post of Deputy Director also.

- (b) Recruitment of lecturers for vacant seats and quality improvement.

At present, there are four vacancies for lecturers. This should be expedited, because the lecturers teaching is most important to the Project.

On the other hand, the qualification and ability and character of lecturers is most important, especially in case of educators.

The Government of Sri Lanka arranged the scheme of recruitment of the lecturers of S.L.F.T.I that they should be qualified with a degree from a recognized university. This is quite reasonable, and it is recommendable to keep it strictly. However, in the above case, they have no knowledge and experience on fishery.

Therefore, it is quite important that lecturers study abroad, or that short term specialists come to train the lecturers.

For the purpose of teaching technical material on fishery, it is strongly recommended to recruit the ex-trainees of the S.L.F.T.I as lecturers and crew for the training vessel.

- (c) Increasing the staff.

For the purpose of the improvement and specialization of the lecturers, it is strongly recommendable to increase the number of staff who can teach specially subjects.

* Ship Manager

It is a quite important job for the supervision of the training vessel such as planning of operations, maintenance of the ship, repair of the ship, and so on. It is also recommendable to have a ship manager supervises the research vessels under the Research Division.

In the above idea, the ships belonging to the Ministry of Fisheries can be supervised systematically and can be used for training and research works for the development of fishery, especially off-shore and deep-sea fishery where it is quite necessary to have various data such as resource of fish, migration of fish, environment of fishing ground etc.,.

Now, Government is gazzeting this post and it may be amended the scheme of recruitment to allow ex-trainees from the S.L.F.T.I. to apply for this post.

* Navigation Lecturer

At present, Navy Officers are carrying out the navigation lesson. However, it is strongly advised to appoint a full-time lecturer. Because the navigation is one of the most important subjects in the fishing course.

* Seamanship Lecturer

Now the Assistant Lecturers are teaching this subject. But as they have not enough experience and knowledge, it is strongly recommended to send them to foreign countries to get training. In this case, it is advisable to go a country using the British style of navigation.

* Laboratory Assistant

It is quite necessary to train the students practically, because the Institute will have to do vocational training. So it is quite important to have laboratory assistants in order to provide complete practical training to the students.

Laboratory Assistant Posts are recommended for the following four subjects:

- (1) Fishing Gear
- (2) Navigation Equipment and Electronic Equipment
- (3) Machine tools and Forging and Welding
- (4) Main Engine

* Masterfisherman

Two posts of Master Fisherman were approved at a very early time. However, qualifications for this post were too strict. Now the Government has amended the qualifications to be applicable to the ex-trainees of the S.L.F.T.I. The Government will make a recruitment announcement soon.

- (d) Recruitment of the Institute's own crew for the training vessel "Samudra Maru".

Now all the crew (including the Captain) are from the Navy. It is urgently required to replace them with the Institute's own crew. For this purpose, Government has amended the "Scheme of Recruitment" for the Crew of training vessels of the S.L.F.T.I. The amendment was to allow the application by the ex-trainees of S.L.F.T.I for apprenticeships for the post of Captain and Chief Engineer. Soon action will be taken on this.

(2) Completion of the facilities and equipment

(a) Efficient running of the three training vessels.

The Institute will have three training vessels, such as the "Samudra Maru", "Muthukumari" and "Sudaya".

The training on board is carried out more easily than before. It is quite important to make a plan of operation for the training vessels.

These vessels must be used not only for the training of students but also for the research and development of fisheries.

(b) The engine course

The engine performance test room's installation work should be expedited to give good and more sophisticated engine practice to the students.

(c) Arrangement of the Library.

At present, the books and desk and chairs are provided by the Funds for the Most Affected Country Allowance.

It is advisable to build the nice Library with comfortable furniture and suitable facilities such as light, windows and air condition, kettle facility, etc..

(d) Audio-visual aids.

At present, the Institute has not an audio-visual aid class room. It is highly efficient to apply audio-visual-aids in

training the students.

Now that the Institute has been provided some audio-visual-aid equipment by the Government of Japan it is advisable to use this equipment as much as possible.

In the future, it is quite essential to build an Audio-visual-aid class room.

VI. RECOMMENDATIONS

1. The Running of the Institute.

- (1) Qualifications to be required of applicants for the entrance examination.

The Institute is the highest fisheries educational organization in the country and it will be elevated to the status of a fishery faculty of the university ultimately.

It is very necessary to select from qualified persons who pass the Science course of the G.C.E. (A.L.) because, to develop the off-shore and deep sea fisheries it is essential to produce skilled seamen who are acquainted with modern fishing techniques and advanced navigation, seamanship systems. These subjects involve high levels of mathematics, physics, and other scientific knowledge.

If the job opportunities for the graduates are not sufficient, it is advisable to reduce the intake of students.

- (2) Improvement of the quality of the Staff.

The teachers play the most important role in the education and training for the students. They must have good knowledge and experience together with a good character for being a teacher.

In the future, the Institute is expected to be promoted to being a university fisheries faculty. In such a case, it is quite essential to recruit lecturers who are fully qualified and also of good character.

The education of the fisheries is very comprehensive, but some subjects are quite specialized. It is quite important to master some specialized subjects, especially because such specialized technicians are very few in this country.

(3) Increasing the staff.

At present, more than ten visiting lecturers are giving lessons to the students. On the other hand, the number of the Institute's own lecturers is quite limited, with only eight lecturers in each medium so that one lecturer has to cover many subjects. For instance, one lecturer in the engine course has to cover 5 - 6 subjects. In such a case, the lecturer has not enough time to study his specialty subject.

It is strongly advisable to increase the number of the lecturers and to give them specialized training.

(4) Strengthening of the practical training.

At present, the curriculum of the Institute is arranged 40% for class lessons and 60% for practical studies. The construction of the curriculum is reasonable. However, the graduates should be well trained so they can work as pioneers on the sea. It is therefore quite essential to train the students strictly. Especially, it is most important to get them good on-board training.

The following should be taken into account:

- (a) Apart from extending the period of training at sea, the practical training system should be made more rigid.

For the purpose of the above, it is advisable to recruit a first mate/practical training lecturer to train the students on fishing, Navigation and Seamanship.

In the engine course, it is advisable to recruit some special technical lecturers, on the main marine engine, refrigeration and so forth, to train the students in the workshop at the Institute and on board also.

If there is possibility to extend the sea training period, it should be considered.

- (b) Strengthening of the practical training in the Institute.

The appointment of laboratory assistants has been suggested long ago. It is quite necessary to have good practical training for the students in the Institute, such as design, cutting, making of fishing gear, operation of the engine, assembling and disassembling of machines, repair of machines, and so on.

It is quite important to have good laboratory Assistants for the above practical training.

It is advisable to recruit the laboratory assistants from ex-trainees.

- (5) The crew including the Captain and Chief Engineer for the training vessel should be Institute's own crew.

At present, Navy personnel have been on the "Samudra Maru" since 1975.

Since the Navy Crew are not conversant with fishing activities, they leave the fishing operation to the Japanese Master fisherman, lecturer and the students. This is quite a difficult problem.

The recommendation to replace the Navy crew of the "Samudra Maru" with the Institute's own crew were made several times. However, the difficulty of recruiting a qualified Captain and Chief Engineer is still there.

The recommendation to amend of the "Scheme of Recruitment" for the Captain and Chief Engineer of training vessels was made by the Japanese Chief Adviser.

The scheme of recruitment should be relaxed to make it possible to recruit the ex-trainees of S.L.F.T.I. as apprentices for Captain and Chief Engineer, and so that the appointment of crew for the training vessel is made easier. Replacement of the navy crew of "Samudra Maru" by the Institute's own is a very urgent step to be taken. Then the introduction of the fishing techniques to the Institute's own staff will be facilitated under the Collaboration with the Japanese Advisor.

- (6) The periodical check up and docking for training vessels.

It is quite essential to have periodical check-ups of the vessel for safety purposes. After the periodical check-up, it is also quite necessary to have a docking for necessary repairs and necessary replacements. Especially, because the vessels are for the purpose of training of students.

- (7) Awarding of the Diploma and Certificate to the technically trained.

In Sri Lanka it is quite important to have a title such as a Diploma or Certificate for students and training in the Institute. These titles will be useful for job opportunities. However, it is recommendable to carry out the necessary examination. If there are some failures of students who do not get satisfactory marks, and the certificate is only given to those who pass it will be appreciated by any one concerned.

- (8) Prevention of student drop out.

The development of off-shore and deep-sea fisheries in Sri Lanka is very slow. Job opportunities for ex-trainees is very poor at present.

Under such circumstances, the students are discouraged and anxious about their future. This causes the drop out of the students.

It is strongly recommended that ex-trainees be recruited to Government posts such as research officers, inspectors, extension officers, instructors and staff for the S.L.F.T.I, etc.. A number of Vacancies are available in these posts.

Especially, the research officer must go to the sea for commercial research work on the sea. It is quite reasonable to recruit ex-trainees to be the research officers who are willing to go sea.

After the off-shore and deep-sea fisheries become available, these ex-trainees should be the pioneers for the development of fisheries in Sri Lanka.

- (9) To furnish Audio-visual-aid.

It is quite essential to provide new educational facilities for a more efficient system of education. An audio-visual-aid is one of the main components of a modernized and efficient education system.

It is advisable to get these facilities from Japan.

2. Recommendation for the Development of the Fishery Industry.

(1) Basic Matters for Development

If the development of fisheries, especially off-shore and deep-sea fisheries, does not go forward, the S.L.F.T.I can not expect to be successful. To exploit the fisheries, it is necessary to have the following three important factors, of marine product resource, capital, and labour (include technical expertise).

- (a) Resource Survey must be carried out.

It is advisable that the Govt. carry out the survey on fish resources itself because the survey will require great cost and time. If the Govt. requests the private sector to carry out the resource survey, it is quite essential to assist them on its expenses and technical aids, etc..

- (b) It is quite necessary to provide monetary assistance.

For the exploitation of the off-shore and deep-sea fisheries, it is evident that larger size ships are required, and the fishing method must use modern facilities. Therefore, it will be required big capital. The Govt.s aid is necessary to assist them.

- (c) Working conditions are very hard.

Working condition on the fishing boat are rather difficult especially, when the sea is rough during monsoon season. In addition, it is quite necessary to have modernized fishing techniques and experience in using it. So, it is strongly recommended to furnish good training facilities and give the students much practice to give them experience.

- (d) Marketing system must be enforced.

Fish are very perishable, it is quite essential to keep the cold storage in good condition, and, of course, the facilities for marketing the fish such as processing, preservation, transportation whole-saling and retailing should be improved. Especially when the fishing industries are developed commercially.

(2) Willingness for Investment by Capitalists in Sri Lanka

- (a) The Capitalists are very careful to invest their capital, because the former Govt. took a socialistic policy and the present Govt. a liberal policy. These changes in government economic policy have obstructed the desire to invest.
- (b) The Capitalists are careful in investing in the fisheries industry.

To establish the off-shore and deep-sea fisheries enterprise a large amount of capital is required.

As you know, the big enterprises needing big

capital are under Govt. Corporations, or were initially founded by British investment capital.

(3) Fisheries Policy for the Development of Fisheries.

- (a) First, it is most important to have carried out the Marine Resources Survey.

The Govt. should take the initiative in carrying it out. It is difficult for the private sector to do the resource survey. It is recommendable that the survey be carried out by the Research Division of the Govt. of Sri Lanka in collaboration with the Institute and other concerns. The survey should be carried out for the purpose of the commercial development of fisheries.

- (b) It is advisable to establish "a financial aid system" sponsored by a Govt. special fund.

The fund will have to provide to the fishermen very soft loans.

- (c) It is also recommendable to encourage fishermen by offering tax holidays and giving grace period as long as possible on loan repayment.
- (d) The related industries have to be developed for getting good earning and profits for the fishermen. To-do this, it is strongly advisable that the C.F.C. has a very important role in assisting the fishermen.
- (e) It is quite important to strengthen the structure of the technical assistant program to constructively give technical guidance to the fisherman.

- (4) It is Advisable to Establish the Govt.'s own Research Organization

The economic policy of the former Govt. was nationalization of industries. In the fishery sector, for instance, it was expected to establish a Trawl Fisheries Corporation in collaboration with the Govt. of Norway and also a Tuna Long Line Corporation, which expected to get a loan from the World Bank.

The present Govt.'s policy is to encourage private enterprises. However, it might be difficult to exploit the off-shore and deep-sea fisheries by private sector.

* Hereagain we stress the establishment of the Govt.'s own research organization for the development of off-shore and deep-sea fisheries because, in the development of deep-sea fisheries it is quite essential to provide big capital and well-trained technical seamen, together with a marine resource survey.

Especially, the resource survey should cover marine resources, an environmental survey of the fishing ground and the biological conditions. In addition to the above, it's also quite necessary to study the economic circumstances, background of the related industry, and other circumstances.

Taking the above into consideration, the Govt. ought to do the above surveys.

- (5) Establishment of the Cooperative Association for the Particular Fisheries.

It is advisable to establish a cooperative association for the particular fisheries which will be the target of the development of off-shore and deep-sea fisheries.

(3) F: The Govt. and the Association will have to work under a very close relationship to assist the fishermen on the finance, and provision of ship and gear, technical guidance and support of the marketing of the fish for the smooth running of the fishery operation, and so on.

(On the other hand, members of the association should work closely with each other on the exchange of technical knowledge, the exchange of information (specially concerned with the exchange of information on the fishing condition on the sea), financial aid, and should get together for selling their catch, and so on.

(6) To Promote Foreign Aid.

(To get foreign assistance on finance and techniques, and to establish joint venture are a much easier and faster way to develop the fisheries.

The above has to be furnished by the Government.

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VII. THE PLAN FOR DEVELOPMENT OF AQUACULTURE IN COASTAL WATER BODIES.

The Govt. of Sri Lanka requested assistance for the development of aquaculture in Sri Lanka from the Govt. of Japan.

The Govt. of Japan despatched survey missions three times. Now, the Govt. of Japan is quite willing to assist the development of aquaculture in the coastal area.

At present, the Govt. of Japan is trying to get financial allocation to assist this.

The items to be carried out under collaboration are as follows:

1. To produce well trained culturists
2. For the above purpose, to have established an aquaculture course in the Institute.
3. To provide class room, laboratory, culture ponds and other necessary facilities.
4. To build the special laboratory for research works on aquaculture at a suitable sea beach.
5. To dispatch some technical advisors.
6. Then, to train the Sri Lankan counterparts.
7. To establish some demonstration farms for aquaculture at suitable places.

* The above are not final decisions.

It will be expected that a new agreement between the nations will be contracted.

JICA