

**BASIC DESIGN STUDY REPORT  
ON  
FISHERIES DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF GHANA**

DECEMBER, 1980

**JAPAN INTERNATIONAL COOPERATION AGENCY  
(JICA)**

512  
89  
SDS

SDS

80-168



**BASIC DESIGN STUDY REPORT  
ON  
FISHERIES DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF GHANA**

JICA LIBRARY



1064196[9]

**DECEMBER, 1980**

**JAPAN INTERNATIONAL COOPERATION AGENCY  
(JICA)**

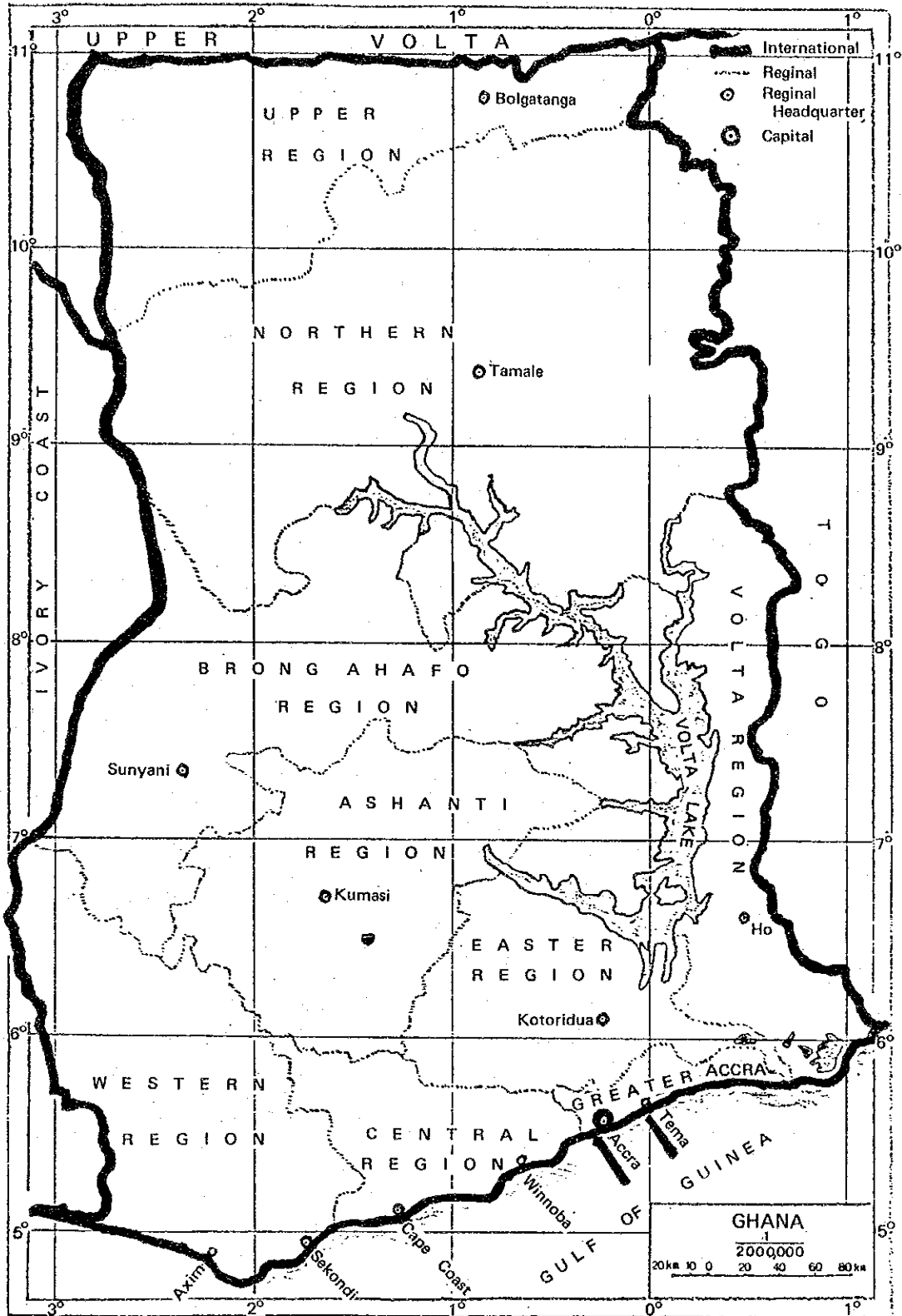
国際協力事業団	
受入 月日 '84. 4. 17	5/2
	89
登録No. 03412	SDS



Signing Ceremony of the Minutes



ADMINISTRATIVE







P R E F A C E

In response to the request of the Government of the Republic of Ghana, the Japanese Government decided to conduct a study on the Fishing Cooperation Project in the Republic of Ghana and entrusted the study to the Japan International Cooperation Agency (JICA). The JICA sent to Ghana a study team headed by Mr. Noriharu Nakamura, Fishing Boat Inspector, Fishing Boat Division, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries from October 10 to 19, 1980.

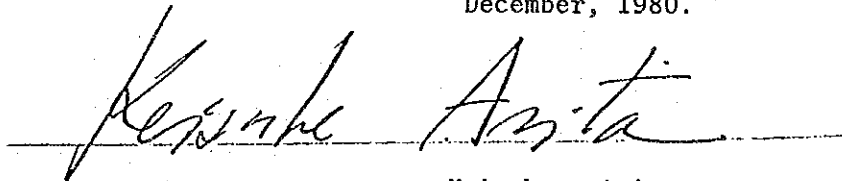
The team consulted with the officials concerned of the Government of Ghana and conducted a survey in the waters of Accra, Tema, and Elmina in Ghana.

After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Republic of Ghana for their close cooperation extended to the team.

December, 1980.

A handwritten signature in cursive script, reading "Keisuke Arita", written over a horizontal line.

Keisuke Arita

President,

Japan International Cooperation Agency.



## TABLE OF CONTENTS

Summary .....	1
Chapter 1      Background and Purpose of Study .....	5
1 - 1    Background .....	5
1 - 2    Purpose .....	5
Chapter 2      Outline of Request .....	9
2 - 1    Background and Circumstances of Request .....	9
2 - 2    Outline of Discussions .....	9
Chapter 3      Basic Design Study .....	15
3 - 1    Outline of Basic Design Study .....	15
3 - 2    Selection of Equipment and Materials .....	15
3 - 3    Summary of Field Study .....	16
Chapter 4      Basic Design .....	25
4 - 1    Basic Design Policy .....	25
4 - 2    Contents of Equipment and Materials for Basic Design .	26
Chapter 5      Conclusion .....	45
5 - 1    Effect .....	45
5 - 2    Recommendations and Suggestions .....	47
Annex	
1      Study Team .....	51
2      Study Itinerary .....	52
3      Roster .....	54
4      Minutes .....	55



## SUMMARY

In order to stabilize the economy and achieve the targeted living standards of the country, the Government of Ghana has planned the two-year Food Production Increase Plan. This Plan emphasizes improving and modernizing canoe fishery to greatly increase the production of fish. In line with this goal, the Government of Ghana requested the Government of Japan for grant assistance in the form of outboard motors, spare parts, repair tools, and fishing nets.

In response to the request, the Government of Japan through the Japan International Cooperation Agency sent a basic design study team to Ghana for 10 days from October 10 to 19, 1980. The Japanese team agreed to prepare and submit a report to both governments for their further study on the implementation of the proposed project.

On the basis of the field survey and discussions with the officials concerned, the Japanese team confirmed that the contents of the request were quite appropriate for the implementation of the Project. A mutual agreement was reached for grant assistance as follows:

### (1) Outboard motors

- |                            |  |
|----------------------------|--|
| 1) Outboard motor (25 HP): | 800 units  |
| 2) Spare parts:            | 5 units of the most consumable group of outboard motors. |
| 3) Repair tools:           | 3 units of the most indispensable group of repair tools  |

### (2) Fishing gear and nets

- |   |               |
|---|---------------|
| 1) Netting materials for purse seining and set nets (various kinds) | about 3 units |
| 2) Mending twines in spools (various kinds)                         | about 3 units |
| 3) Ropes in coils, Floats and lead sinkers (various kinds)          | about 3 units |
| 4) Fishing lines (nylon) and hooks (various kinds)                  | about 3 units |



CHAPTER 1 BACKGROUND AND PURPOSE OF STUDY





## CHAPTER 1 BACKGROUND AND PURPOSE OF STUDY

### 1 - 1 Background

The Government of Ghana has been implementing the Two-Year Food Production Increase Plan to improve and modernize canoe fishery which produces 75% of the annual fish catch in Ghana. The Plan will accelerate productivity in the fishery sector, and as a result, contribute to the total food production in the country. In accordance with the above concept, the Government of Ghana has requested the Government of Japan for a grant assistance in the form of equipment and materials for canoe fishery.

In response to the request, the Government of Japan through the Japan International Cooperation Agency (JICA) sent a study team to the Republic of Ghana for 10 days from October 10 to 19, 1980 to carry out the basic design study as part of a grant assistance to be disbursed during fiscal year 1980.

On the basis of the request, the study team conducted a study corresponding to the study itinerary in order to determine how the grant could most appropriately and effectively be used to meet local conditions. The results of study confirmed that this project would be quite ideal as an object of Japanese grant assistance.

In consideration of the amount of the grant aid allocated under the schedule, the study team examined the contents of the request through the view of counterparts and on a priority basis regarding the quality and the quantity of each commodity. Through mutual consultations, the request was modified and finally concluded as shown in the Minutes (Annex 4).

### 1 - 2 Purpose

The purpose of the study is to draft the most necessary and appropriate basic design for Japanese grant assistance by having a study team conducted the study in Japan and in Ghana covering the following topics: relationship between the Ghana National Plan and the Fisheries Promotion Project; the background, justification, and contents of the request; local conditions; how to effectively select equipment and materials by both parties concerned to be utilized by the government officials in the Republic of Ghana.



## CHAPTER 2 OUTLINE OF REQUEST



## CHAPTER 2 OUTLINE OF REQUEST

### 2 - 1 Background and Circumstances of Request

Civilian administration was restored to Ghana in September 24, 1979 when Dr. Hilla Limann was elected president thus ending 7 years and 8 months of military government rule. Upon commencement of this Third Republic in Ghana, the President proclaimed various reforms.

The main targets of the present government aimed at rebuilding the economy including "restoration" and "redirections" of the economy, fostering able personnel, and redistributing commodity production.

The economic policy lays emphasis on implementing a short-term economic restoration plan rather than the middle and/or long term policies. Agriculture is regarded as one of the most important sectors, and the government has drafted the two-year Food Production Increase Plan on the assumption that appropriate food distribution should help the national economy and the welfare of the people stabilize.

In line with the Plan, the Director General, Ministry of Agriculture, and Director, Fisheries Administration, Ministry of Agriculture have drafted various fisheries projects and directed subordinates to implement them in a concrete manner.

The Government of Ghana requested the Government of Japan through the Embassy of Japan in Accra for grant assistance in the form of equipment and materials necessary to repair outboard motors of its canoe fleet which plays the major role in fishery production in the National Food Production Increase Plan. The government of Ghana has the intention to improve its fleet of canoes in order to increase the fish catch which will help stabilize the economy of Ghana and the welfare of the people.

### 2 - 2 Outline of Discussions

After calling on the Ministry of Agriculture, the study team conducted a series of discussions with government officials of the Fisheries Administration, Ministry of Agriculture. The main points were as follows:

- 1) The canoe fish catch exceeds 60% of the total market supply of fish in the country.
- 2) The fleet of canoes in the country totals about 8,000 units, 50% of which are fitted with outboard motors.
- 3) Of the 4,000 canoes operated by outboard motors, 2,000 are broken and left unrepaired although a license to import the parts has been authorized by the Government of Ghana.
- 4) Of the 4,000 canoes not fitted with outboard motors, 2,000 are expected to obtain motors in 8 years.
- 5) It is of vital importance for the present economy of Ghana to achieve the targeted productivity of fish catch by repairing canoes and improving fishing gear and nets.

In addition to the above meeting, the team went on a study tour of Accra and its surrounding districts: Tema, Winneba, and Elmina.

During the course of the study itinerary, the team conducted field surveys, consulted with government officials through a series of discussions, and expressed its views resulting from the study to the Director General, Ministry of Agriculture at his office on October 16, 1980.

In a meeting with the government officials concerned and the team members, the selection was taken place regarding the equipment and materials to be granted. It was confirmed that outboard motors, the parts, and the repair tools would constitute 60% of the total, and that fishing gear and nets would constitute 40%, and further, that the granted materials and equipment would be delivered to one of the leading ports in Ghana, maintained, and operated by Fisheries Administration, Ministry of Agriculture. The list of the equipment and materials is agreed to as follows:

Equipment & materials

Original request	Final request	Shared percentage (%)
1) Outboard motors 25 HP 40 HP Spare parts for 25 HP motors Repair tools Large machine tools 2) Workshop Prefabricated building	Required Not required Required Required Not required Not required	60%
3) Fishing gear and nets Netting materials for purse seining nets Netting materials for set nets Mending twines Ropes Floats and lead sinkers Fishing lines (nylon) and hooks	Required Required Required Required Required Required	40%





## CHAPTER 3 BASIC DESIGN STUDY



## CHAPTER 3 BASIC DESIGN STUDY

### 3 - 1 Outline of Basic Design Study

The Government of Ghana's policy to stabilize the economy and the welfare of the people, will be helped forward by the Japanese grant assistance in line with the objectives of the Fishery Development Project, by speedily improving and modernizing the administrative and technical qualities of the fleet of canoes, promoting various development activities in the fishery sector, and helping to achieve the Food Production Increase Plan at the earliest possible stage.

All of the top government officials concerned (i.e. Minister, Principal Undersecretaries, Undersecretaries, Director General, Ministry of Agriculture) had the unified opinion that the Fishery Promotion Project would have a strong impact to speed the realization of the Food Production Increase Plan. Furthermore, it was quite clear that Ghanaian officials have given serious consideration to the management and operation plan for the equipment and materials scheduled to be granted, and that the major stumbling blocks to the Fishery Promotion Project would be caused by the shortage of the spare parts for outboard motors and the repair of fishing nets which were almost torn out. Unless solved, the problems will lead to stagnant productivity or even less in canoe fishery.

Judging from the above results of the study, the study team conducted a basic design study of the equipment and materials needed to improve the production of canoe fishery through field surveys and a series of discussions with the government officials.

### 3 - 2 Selection of Equipment and Materials

Based on a financial analysis for the equipment and materials originally requested by the Government of Ghana, outboard motors and the parts (including a prefabricated building for a workshop and large machine tools, etc.) were allocated 25% of the total, while fishing nets were allocated 75%.

Through a series of discussions with the government officials and as a result of the field surveys, the team selected the equipment

and materials scheduled to be granted: 60% for outboard motors, spare parts, and the repair tools, and 40% for fishing nets. Other items in the original request were deleted, such as, the prefabricated building and large machine tools. The Government of Ghana agreed to the team's recommendations. The list of items is briefly summarized below:

1. Outboard motors
  - 1) Outboard motors 25 HP
  - 2) Spare parts For 25 HP
  - 3) Repair tools
2. Fishing gear and nets
  - 1) Netting materials for purse seining and set nets Various kinds
  - 2) Mending twine in spools Ropes in coils Various kinds  
Floats & leads
  - 3) Fishing lines & hooks Various kinds

Regarding the quantities of the equipment and materials, it was mutually agreed that they shall be determined in accordance with the scheduled amount of grant assistance and by the team's fullest consideration of the mutual agreement on the budgetary allocation previously specified.

### 3 - 3 Summary of Field Study

#### 3 - 3 - 1 Accra District

1. The Tema Regional Fishery Office takes charge of the following functions in the Great Accra Region:
  - 1) Issurance of fishing licenses
  - 2) Management and coordination for fisheries, ports and harbours
  - 3) Conducting seminars and guidance regarding all types of qualifications for fishing crews
  - 4) Guidance for the maintenance and repair of engines
2. Due to the lack of dredging works in the inner harbour, Accra Port doesn't provide any facilities for the docking of canoes;

thus they must all be beached at present.

3. In general, canoes are hollowed out of a narrow, light log. At Accra, there were about 250 canoes in total, 90% of which are power-operated.

	Large canoe	Small canoe
Overall Length	11 - 12 M	7 - 8 M
Breadth	1.5 - 1.8 M	1.25 M
Depth	0.8 - 0.9 M	0.6 M
Motor	25 HP	25 HP

4. In the peak season for catching sardines, mainly ring fishing nets are used. These nets are generally 350 - 420 yards long, 40 yards deep, 30 - 33% as the shringage rate, dyed in blue, fitted with No. 100 floats and lead sheets as sinkers.  
  
Being pretty aged, the existing fishing nets have been mended by hand after the daily catch, whereas in Japan they are patched with a new piece. Generally speaking, mending skills are pretty good. The only evident problem was due to the shortage of materials.
5. It was common to let the 25 HP outboard motors be worn out or be repaired by individuals without training since no specified workshops were available.
6. The unloaded fish catches which are bought by middlemen and sun-dried on the sands for 2 to 3 days, are either seasoned with salt or smoked for sale. Fresh fried fish is on sale for home consumption.
7. The Kofifoh Boat Building Co. Ltd., was constructing about 10 G/T purse seining and trawling wooden vessels in order to serve as much improved fishing vessels since canoes are dangerous (poor stability) and have low productivity.

3 - 3 - 2 Tema District

1. Tema Port is situated at the outer port of Accra accessible within a 40 minute drive in the Great Accra Region. It serves as a commercial, fishing port with good ground facilities. The fishing port is divided into three parts: a new area, an old area and a canoe port. The port is outfitted with 12,000-ton capacity cold stores owned by the State Fishing Cooperation to warehouse shells and fishes for domestic consumption and export.
2. A Tema Regional Fishery Office administers the same functions as the office in the Accra district, and provides pilots at the port.
3. The types of canoes, fishing methods, and fishing nets were almost the same as those in the Accra district. The outboard motors and fishing nets were very aged. Owing to different levels of maintenance depending on individual mending techniques and experiences, the equipment lives span two to three years.
4. When visiting Tema Port, the team went onboard the research and training vessel that had been granted to the Government of Ghana in fiscal year 1978. Questions to the captain revealed that the vessel was being operated effectively and appropriately.
5. Tema Port Elements:
  - A. Commercial Port
  - B. New Fishing Port
  - C. Old Fishing Port
  - D. Canoe Port
  - E. Dry dock
  - F. Slipway for small boat
  - G. Cold stores owned by the State Fishing Cooperation
  - H. Warehouses of Commercial Port
  - I. Breakwater
  - J. Pier for merchant vessels
6. About 200 medium-size fishing vessels are based at Tema Fishing Port engaged in purse-seining and trawling fishes with the capacity of 10 to 20 tons per day. These vessels are expected to play an important role in Ghana fisheries in the near future by replacing canoes.

The main particulars of medium-size fishing vessels are:

40 - 45 Feet	Main engine:	88 HP diesel
50 - 55 Feet		100 - 150 HP diesel
60 - 70 Feet		250 - 300 HP diesel

It is said that the average annual fishing operation is 300 days with a fish catch of 5 to 20 tons/day.

### 3 - 3 - 3 Winneba District

Winneba is a fishing village with the population of 15,000 about one-hour's drive from Accra in the central region. The Winneba Regional Fishery Office conducts the functions as those in the other districts: namely,

- 1) Issurance of fishing licences
  - 2) Management and coordination for fisheries, ports and harbours
  - 3) Conducting seminars and guidance regarding all types of qualifications for fishing crews
  - 4) Guidance for the maintenance and repair of engines
2. There are no port facilities, so that canoes are pulled on shore for storage and pushed at sea for fishing operations.
  3. There are two types of canoes like those in Accra and Tema:

	Large canoe	Small canoe
Overall Length	11 - 12 M	7 - 8 M
Breadth	1.8 M	1.25 M
Depth	0.9 M	0.6 M
Motor	25 HP	25 HP

A fishing crew consists of nine members per canoe with fishing nets placed on the temporarily mounted deck and an outboard motor fixed on a triangle-shape support located at the starboard, 3 meters from the stern.

4. In general, fishing nets were well worn and mended a lot by hand like those in the Accra district; they are not durable for a long time. The levels of mending skill, however, is quite good.
5. In a meeting with influential cooperative members in Winneba, the team was informed that they have been suffering from the shortage of outboard motors, spare parts, and fishing nets. Thanks to the strenuous efforts of Mr. Nagafukada, JOCV (Japan Overseas Cooperation Volunteers) expert, the total number of the cooperative members reached 110 in all. According to his explanation, he has been engaging in implementing various activities, such as,
  - 1) Strengthening and fostering the cooperative association
  - 2) Conducting seminars on fishing activities
  - 3) Re-mobilizing a dormant cold store with the capacity of 60 tons and giving guidance on its appropriate utilization
  - 4) Setting up a repair workshop for outboard motors

#### 3 - 3 - 4 Elmina District

- 1) Elmina is located to the west of Winneba about one hour and half away. There is also an Elmina regional fishery office which functions just like those in the other regions. Mr. Opou Mensah provided information about the Elmina office as follows:
  - 2) In the central region there are about 4,000 canoes, 2,500 of which are motor-operated. Half of the motor-driven canoes are out of order due to the lack of availability of spare parts.
  - 3) The fishing methods, fishing gear and nets, fish processings, and the sales are the same as in other regions. The fishing methods used include purse seining, set net, trawling, and line fishing. No long-line fishing was observed.



- 4) The main existing outboard motors were made in USA and Japan. There are no workshops for repairing outboard motors. Generally repairing is done by individuals without training. It is common to leave repair work undone. The life span of equipment is considered to be two to three years.
- 5) There were 150 medium-scale wooden fishing vessels (10 to 20 G/T) in operation as of September 1980: 60% for purse seining and 40% for trawling. This type of wooden fishing vessel will play a larger role for fishing in the future. The dimensions are:

Overall Length:	27, 29, or 35 Feet
Breadth:	9 Feet
Depth:	3 Feet

3 - 3 - 5 Granted Research Vessel, "KAKADIAMAA"

When the study team visited Tema Port, the team members went on board and conferred with the captain of the KAKADIAMAA granted by the Government of Japan to Ghana in 1979.

Capt. B.B. Martei expressed his gratitude on behalf of the Government of Ghana to the Government of Japan for grant assistance and explained the followings;

- 1) There was no problem in operation so far.
- 2) The vessel has been used for observations at fixed stations and conducted research activities on marine resources, but up to date, it hasn't been used for training.
- 3) The weekly cycle of use consists of 5 days' research activities, and 2 days' report-making and inspection of the inboard and fishing nets. The vessel has completed 50 voyages up to date.
- 4) The complement consists of 25 crew: namely, one captain, two navigators, one chief engineer, two engine men, one researcher and his assistant, and 17 other crewmen.
- 5) It is expected that the vessel will unveil oceanographic resources, fishing grounds, and other valuable facts along with the steady progress of the research activities i.e. data collection and its analyses in the coastal waters of Ghana.



## CHAPTER 4 BASIC DESIGN



## CHAPTER 4 BASIC DESIGN

### 4 - 1 Basic Design Policy

Regarding the team's basic design policy based on the scheduled grant assistance, the objectives are as follows:

- 1) To conduct the basic design within the scheduled amount of grant assistance prepared by the Government of Japan.
- 2) To determine the actual needs regarding the contents and the background of the request through study in Ghana and Japan.
- 3) To outline the management and operation plan upon/after delivery concerning the equipment and materials to be granted.
- 4) To allocate an appropriate amount of the project budget for the management and operation concerning the equipment and materials to be granted, and to arrange personnel for the management and operation of the project.
- 5) In consideration of the objectives and the spirit of grant assistance, to confirm that the equipment and materials shall neither be given free nor be an onerous burden to the fishermen.
- 6) To devise the easiest unit distribution system for the equipment and materials (excluding outboard motors) for the designated regional fishery offices in view of the very large variety of items.
- 7) To thoroughly investigate the technical abilities of local fishermen regarding the equipment and materials to be granted.
- 8) To confirm that the equipment and materials to be granted, will contribute to the regional economy through local fishing activities.
- 9) To select the equipment and materials upon consideration of the local conditions.

#### 4 - 2 Contents of Equipment and Materials for Basic Design

The study team conducted a basic design study and reached the following conclusions on the contents of the request originated from the Government of Ghana through a series of discussions with Ghanaian government officials in accordance with the basic design policy.

##### 4 - 2 - 1 Contents of Equipment and Materials

###### 1. Outboard motors

- |                                    |  |
|------------------------------------|--|
| 1) Outboard motors                 | 25 HP, about 800 units                                   |
| 2) Spare parts for outboard motors | 5 units of the most consumable group (listed separately) |
| 3) Repair tools for outboard       | 3 units of the most consumable group (listed separately) |

###### 2. Fishing gear and nets

- |                            |  |
|----------------------------|--|
| 1) Netting materials       | About 3 units of the most consumable group (listed separately) |
| 2) Mending twines          | About 3 units of the most consumable group (listed separately) |
| 3) Ropes in spools         | About 3 units of the most consumable group (listed separately) |
| 4) Floats and lead sheets  | About 3 units of the most consumable group (listed separately) |
| 5) Fishing lines and hooks | About 3 units of the most consumable group (listed separately) |

##### 4 - 2 - 2 Reasons for deciding the quantities of equipment and materials

###### 1. Outboard motors

25 HP outboard motors are very commonly used in Ghana. They were therefore selected as being the easiest to find replacement parts for.

About 800 units were adopted as the quantity in consideration of inflationary impacts.

2. Spare parts for outboard motors

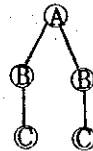
In the Table for Spare Parts of Outboard Motors, the unit quantities of the most consumable spare parts have been selected for 200 outboard motors on the basis of 3 years' continuous investigation of consumed parts. It is estimated that 5 units of spare parts will cover the approx. 1,000 sets of outboard motors designed at this time.

3. Repair tools

In the Table of Repair Tools, the unit quantities include enough tools to permit the following workshop activities:

- Ⓐ Major repair, replacement of spare parts, and adjustments
- Ⓑ Intermediate repair, replacement of spare parts, and adjustments
- Ⓒ General repair, replacement of spare parts, and adjustments

One unit



On the assumption that one unit could perform the above-mentioned classes of repair, replacement of spare parts, and adjustment in each region (the western region, the central region, and the Great Accra region), it has been decided to distribute them on the basis of one unit per region.

4. Fishing gear and nets

In calculating the quantities of fishing gears and nets, it was decided to distribute them to the western region, the central region, and the Great Accra respectively. In terms of the local

requirements one unit will consist of 10 rolls of each different kind of netting including set nets, but excluding a fine web which was replaced by other kinds of nets. Mending twines were included in large quantities in consideration of the local requirements and conditions, while ropes in coils are to be supplied in less quantities on the grounds that the existing ropes can still be utilized. The quantities of lead sheets, floats, nylon lines, and hooks were adjusted up to the maximum amount of the allotted share per region. The details are shown in separate papers.



4 - 2 - 3 List of Equipment and Materials

(1) Outboard Engine Parts

Description	Specification	Quantity per 1 unit	Quantity per 5 units
Engine cover parts	Top cowling Ass'y	10 sets	50 sets
	Rubber seal (1) for starter	30 pcs	150 pcs
	Seal for cover	20 "	100 "
	Bottom cowling	10 "	50 "
	Grommet (1)	100 "	500 "
	Bolt	100 "	500 "
	Grommet (2)	50 "	250 "
	Grommet (3)	50 "	250 "
Starter parts	Stop switch Ass'y	20 sets	100 sets
	Starter Ass'y	15 sets	75 sets
	Starter rope 5 <sup>m</sup> / <sub>m</sub> x 50M	10 line	50 line
	Spring for starter	30 pcs	150 pcs
	Pawl, drive	150 "	750 "
	Circlip	200 "	1000 "
	Spring, pawl drive	50 "	250 "
Crank, cylinder & piston parts	Crank case ass'y	10 sets	50 sets
	Anode	200 pcs	1000 pcs
	Head cylinder	20 pcs	100 pcs
	Gasket, for cylinder head	40 "	200 "
	Thermostat	10 "	50 "
	Gasket, for Thermostat cover	50 "	250 "
	Oil seal (23 x 38 x 7)	50 "	250 "
	Gasket for oil seal housing	100 "	500 "
	Gasket for exhaust out cover	100 "	500 "
	Gasket for exhaust inner cover	100 "	500 "
	Crank ass'y	20 sets	100 sets
	Bearing for conrod big end	30 pcs	150 pcs
	Washer for rod bearing	100 pcs	500 pcs
	Crank pin	100 "	500 "
	Bond #7	30 "	150 "
Roller bearing, for crank	30 "	150 "	
Ball bearing, for crank	40 "	200 "	

Description	Specification	Quantity per 1 unit	Quantity per 5 units
	Piston ass'y (STD)	100 sets	500 sets
	Piston ring set	100 "	500 "
	Piston pin	100 pcs	500 pcs
	Clip for piston pin	200 "	1000 "
	Bearing for piston pin	500 "	2500 "
	Washer for piston pin	100 "	500 "
	O ring, 1.9 $\phi$ x 14.0 $\phi$	100 "	500 "
	Oil seal, 24 x 48 x 8	50 "	250 "
	Oil seal, 13.9 x 25 x 5	50 "	250 "
	O ring 3.0 $\phi$ x 57.2 $\phi$	100 "	500 "
	Plug, spark (B.7HS)	500 "	2500 "
	Connecting rod ass'y	50 sets	250 sets
	Gasket kit, for power head	50 "	250 "
Inlet, carburetor	Gasket, for carburetor	100 pcs	500 pcs
	Seal, for cover	50 pcs	250 pcs
	Gasket, for intake manifold	100 pcs	500 pcs
	Reed valve ass'y	30 sets	150 sets
	Packing, for reed valve seat	100 pcs	500 pcs
	Carburetor Ass'y	15 sets	75 sets
	Gasket, for float chamber	50 pcs	250 pcs
	Float	10 pcs	50 pcs
	Pin, for Float	50 "	250 "
	Main jet	50 "	250 "
	Screw, for throttle	50 pcs	250 pcs
	" , for air adjusting	50 "	250 "
	Spring, for "	50 "	250 "
	Valve seat ass'y	30 "	150 "
	Carburetor repair set	20 sets	100 sets
Flywheel magnet	Flywheel magnet ass'y	10 sets	50 sets
	Ignition coil	30 pcs	150 pcs
	Contact breaker ass'y	150 sets	750 sets

Description	Specification	Quantity per 1 unit	Quantity per 5 units	
	Condenser	30 pcs	150 pcs	
	Packing, for wheel cover	50 pcs	250 pcs	
	Nut hexagon	50 pcs	250 pcs	
	key, for Flywheel	50 pcs	250 pcs	
	Electric parts	Ignition coil ass'y (1)	30 sets	150 sets
		" " (2)	30 sets	150 sets
Plug cap ass'y		30 sets	150 sets	
Upper Casing parts	Upper casing	15 pcs	75 pcs	
	Gasket, for upper casing	100 "	500 "	
	Seal, for pipe (2)	100 "	500 "	
	Gasket, for seal	100 "	500 "	
	Extension, for long	10 "	50 "	
Lower Casing and drive parts	Anode	50 pcs	250 pcs	
	Water tube (1)	15 "	75 "	
	Seal, for water tube	100 "	500 "	
	Straight pin	100 "	500 "	
	Nut, for propeller	30 "	150 "	
	Cotter pin	200 pcs	1000 pcs	
	Propeller Ass'y 10 $\frac{3}{4}$ "	20 sets	100 sets	
	" " 11 $\frac{1}{4}$ "	10 "	50 "	
	" " 9"	10 "	50 "	
	Lower casing comp' (1)	10 "	50 "	
	Bush, for drive shaft	30 pcs	150 pcs	
	Lower casing (2)	10 "	50 "	
	Seal, for lower casing	50 "	250 "	
	Cover, for water inlet (1)	50 "	250 "	
	Plug, for lower casing (2)	100 "	500 "	
	Gasket, for plug	100 "	500 "	
	Screw, for detent	100 "	500 "	
	Gasket, for screw	100 "	500 "	
	Anode	100 "	500 "	
	Cover (2) for water inlet	30 "	150 "	

Description	Specification	Quantity per 1 unit	Quantity per 5 units
	Shift cam ass'y	10 sets	50 sets
	Boot, for shift rod	15 pcs	75 pcs
	Housing, for water pump	10 "	50 "
	Insert, cartridge	15 "	75 "
	Inner plate cartridge	15 "	75 "
	Outer plate "	15 "	75 "
	Impeller, for water pump	15 "	75 "
	Gasket cartridge	50 "	250 "
	Water seal rubber	30 "	150 "
	Drive shaft (762 m/m)	15 "	75 "
	Pin for impeller	100 "	500 "
	Pin for drive shaft	100 "	500 "
	Oil seal 20 x 30 x 6	100 "	500 "
	O ring 1.9 $\phi$ x 14 $\phi$	100 "	500 "
	Needle bearing, for drive shaft	50 pcs	250 pcs
	Thrust needle bearing, "	30 "	150 "
	Pinion sub ass'y	30 sets	150 sets
	Circlip, for pinion	100 pcs	500 pcs
	Ball bearing, for propeller shaft	30 "	150 "
	Gear Ass'y (1) "	30 sets	150 sets
	Ring, for cross pin	50 pcs	250 pcs
	Clutch	30 "	150 "
	Straight pin, for clutch	50 "	250 "
	Propeller shaft	15 "	75 "
	Gear ass'y (2) for propeller shaft	30 sets	150 sets
	Ball bearing "	30 "	150 "
	Oil seal (17 x 30 x 6 )	100 pcs	500 pcs
	Cap for lower casing	20 "	100 "
	O ring, 3.5 $\phi$ x 45 $\phi$	100 "	500 "
	Gasket kit for lower unit	30 sets	150 sets
	Chrome pump kit	30 "	150 "
Bracket parts	Friction plate	50 pcs	250 pcs
	Bushing, for bracket upper	20 "	100 "
	Bushing, for bracket lower	20 "	100 "

Description	Specification	Quantity per 1 unit	Quantity per 5 units
	O-ring, for bracket lower	100 pcs	500 pcs
	Bushing, "	50 "	250 "
	Handle, for trunson clamp	50 "	250 "
	Pin "	100 "	500 "
	Screw "	30 "	150 "
	Pad, "	30 "	150 "
	Tilt rod ass'y	15 sets	75 sets
	Bushing solid	50 pcs	250 pcs
	Bushing	50 "	250 "
	Mount rubber for upper front	30 pcs	150 pcs
	Gasket, for mount rubber (1)	100 "	500 "
	Mount rubber, for upper side	50 "	250 "
	Gasket, for mount rubber (1)	100 "	500 "
	Mount rubber for lower side	50 "	250 "
	Gasket, for mount rubber (1)	100 "	500 "
	Mount rubber, for lower front	30 "	150 "
	Gasket, for mount rubber (3)	50 "	150 "
Control parts	Handle rubber	30 pcs	150 pcs
	Throttle wire comp'	70 sets	350 sets
	Grommet	50 pcs	250 pcs
	Connector shift rod (2)	50 "	250 "
	Nut hexagon	100 "	500 "
Fuel section parts	Fuel tank ass'y	20 sets	100 sets
	Fuel pipe ass'y	30 "	150 "
	Fuel pipe joint comp' (2)	30 "	150 "
	Primary pump ass'y	30 "	150 "
	Fuel pipe joint comp' (1)	30 "	150 "
	Fuel hose 30M	10 "	50 "
	Filter ass'y	30 "	150 "
	Packing for filter	100 pcs	500 pcs
	Element	100 "	500 "
	O ring 2.0ø x 34.5ø	100 "	500 "
	Fuel pipe (1)	50 "	250 "
	Fuel pump ass'y	30 "	150 "
	Diaphragm, for pump	100 "	500 "

Description	Specification	Quantity per 1 unit	Quantity per 5 units
General parts	Spring, for diaphragm	50 pcs	250 pcs
	Gasket for body (1)	100 "	500 "
	Check valve, for pump	100 "	500 "
	Gasket for body	100 "	500 "
	Diaphragm	100 "	500 "
	Gasket, for fuel pump	100 "	500 "
	Grease A 250 g	108 pcs	540 pcs
	Bond #4 200 g	30 "	150 "
	Bond #5 150 g	30 "	150 "
	Bolt 06M12	30 "	150 "
	" hexagon 06M56	50 "	250 "
	" , for clamp	50 "	250 "
	" 10M54	50 "	250 "
	" 06M07	50 "	250 "
	" 06M08	50 "	250 "
	" , hexagon 08M03	50 "	250 "
	" " 08M04	50 "	250 "
	Nut hexagon for carburetor drum	100 "	500 "
	Nut hexagon for starter cover	100 "	500 "
	" for clamp	100 "	500 "
	" "	100 "	500 "
	Bolt hexagon, for mount rubber	100 "	500 "
	" " , for steering handle	100 "	500 "
	" " , for oil seal housing	100 "	500 "
	" , for steering handle	50 "	250 "
" , for ignition coil	100 "	500 "	
" , hexagon (2), for clamp	100 "	500 "	
" , for bracket	100 "	500 "	

Description	Specification	Quantity per 1 unit	Quantity per 3 units
Special and general tools	General tool kit	5 sets	15 sets
	Special tool kit (A) 20 items	2 "	6 "
	" (AA) 8 items	3 "	9 "
	Power unit stand (for 25 HP)	5 pcs	15 pcs
	" (for 40 HP)	5 "	15 "
	Torque wrench 0~13 <sup>m</sup> -Kg	5 "	15 "
	Test propeller (for 25 HP)	3 "	9 "
	" (for 40 HP)	3 "	9 "
	Vernier caliper (0~150 <sup>m</sup> / <sub>m</sub> )	5 "	15 "
	Dial gauge set	3 sets	9 sets
	Pocket tester	3 pcs	9 pcs
	Timing tester (with buzzer)	5 "	15 "
	Coil tester	1 "	3 "
	Timing light	5 "	15 "
	Repair stand	3 "	9 "
	Portable tachometer	5 "	15 "
	Point spanner	5 "	15 "
	Micrometer (50~75 <sup>m</sup> / <sub>m</sub> )	1 "	3 "
	Cylinder gauge (50~100 <sup>m</sup> / <sub>m</sub> )	1 "	3 "
	Tap 5 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	" 6 "	5 "	15 "
	" 8 "	5 "	15 "
	Tap handle L : 8~14 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	" S : 3~6 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	Dise 5 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	" 6 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	" 8 <sup>m</sup> / <sub>m</sub>	5 "	15 "
	Dise handle 20 $\phi$	5 "	15 "
	Dise handle 25 $\phi$	5 "	15 "
	Crimper & terminals set	3 sets	9 sets
Hydraulic press	1 "	3 "	
Bearing separator	2 pcs	6 pcs	
Crank disassy & ass'y tool	1 set	3 sets	
Crank aligner	1 set	3 "	
Magnetic base	2 sets	6 sets	

(2) Netting Materials for Purse Seining

Description			Quantity per 1 unit	Quantity per 3 units
210 <sup>D</sup>	2/3	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	10	30
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
		5" "	"	"
210 <sup>D</sup>	2/4	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	10	30
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
		5" "	"	"
210 <sup>D</sup>	2/6	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	15	45
		1½" "	"	"
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
210 <sup>D</sup>	9	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	15	45
		1½" "	"	"
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
210 <sup>D</sup>	12	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	15	45
		1½" "	"	"
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
		5" "	"	"



Description			Quantity per 1 unit	Quantity per 3 units
210 <sup>D</sup>	15	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	10	30
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
		5" "	"	"
		6" "	"	"
		7" "	"	"
		8" "	"	"
210 <sup>D</sup>	18	1" 400 <sup>MD</sup> x 200 <sup>m</sup>	10	30
		2" "	"	"
		3" 100 <sup>MD</sup> x 100 <sup>m</sup>	"	"
		4" "	"	"
		5" "	"	"
		6" "	"	"
		7" "	"	"
		8" "	"	"

## (3) Netting Material for Set Net

Description			Quantity per 1 unit	Quantity per 3 units
210 <sup>D</sup> 21	21	2" 100 <sup>MD</sup> x 100 <sup>m</sup>	10	30
		3" "	"	"
		4" "	"	"
		5" "	"	"
		6" "	"	"
		7" "	"	"
		210 <sup>D</sup> 27	27	2" 100 <sup>MD</sup> x 100 <sup>m</sup>
3" "	"			"
4" "	"			"
5" "	"			"
6" "	"			"
7" "	"			"
210 <sup>D</sup> 36	36			2" 100 <sup>MD</sup> x 100 <sup>m</sup>
		3" "	"	"
		4" "	"	"
		5" "	"	"
		6" "	"	"
		7" "	"	"
		210 <sup>D</sup> 48	48	2" 100 <sup>MD</sup> x 100 <sup>m</sup>
3" "	"			"
4" "	"			"
5" "	"			"
6" "	"			"
7" "	"			"
210 <sup>D</sup> 60	60			2" 100 <sup>MD</sup> x 10 <sup>m</sup>
		3" "	"	"
		4" "	"	"
		5" "	"	"
		6" "	"	"
		7" "	"	"

(4) Nylon Twine

Description	Quantity per 1 unit	Quantity per 3 units
210 <sup>D</sup> No. 4 x 3 (1 <sup>kg</sup> Spool)	100	300
5 x 3 ( " )	100	300
6 x 3 ( " )	100	300
9 x 3 ( " )	100	300
12 x 3 ( " )	100	300
15 x 3 ( " )	100	300
18 x 3 ( " )	100	300
21 x 3 ( " )	100	300
27 x 3 ( " )	100	300
36 x 3 (2. <sup>5kg</sup> Ball)	100	300
48 x 3 ( " )	100	300
60 x 3 ( " )	100	300

(5) Ropes in Coil (200<sup>m</sup>)

Description	Quantity per 1 unit	Quantity per 3 units
(1) Polyethylene Rope		
1/2" (17.3kg)	3	9
3/4" (37.2 ")	"	"
1" (65.8 ")	"	"
1 1/2" (149 ")	"	"
2" (262 ")	"	"
(2) Nylon Rope		
3/8" (11.2kg)	3	9
1/2" (21.8 ")	"	"
3/4" (45 ")	"	"
1" (78.6 ")	"	"
1 1/4" (123.0")	"	"
1 1/2" (175 ")	"	"
2" (310 ")	"	"
(3) Manila Rope		
1/2" (23.8kg)	3	9
3/4" (52.8 ")	"	"
1" (94 ")	"	"
1 1/4" (145 ")	"	"

## (6) Fishing Lines and Hooks

Description	Quantity per 1 unit	Quantity per 3 units
(1) Nylon Monofilament Lines		
3 $\phi$ 0.29 $\frac{m}{m}$ Length/kg 13,350m	10	30
4 0.33 "	"	"
5 0.37 "	"	"
6 0.40 "	"	"
7 0.44 "	"	"
8 0.47 "	"	"
10 0.52 "	"	"
12 0.57 "	"	"
14 0.62 "	"	"
16 0.66 "	"	"
18 0.70 "	"	"
20 0.74 "	"	"
22 0.77 "	"	"
24 0.81 "	"	"
26 0.84 "	"	"
28 0.87 "	"	"
30 0.90 "	"	"
40 1.05 "	"	"
50 1.17 "	"	"
60 1.28 "	"	"
70 1.38 "	"	"
80 1.47 "	"	"
90 1.56 "	"	"
100 1.65 "	"	"
120 1.80 "	"	"
150 2.00 "	"	"

Description	Quantity per 1 unit	Quantity per 3 units
(2) 2310 Mustad Kirby Sea Hooks		
2 Weight/1000 PCS 8.1kg	10	30
3 5.8 "	"	"
4 4.0 "	"	"
5 2.7 "	"	"
6 1.8 "	"	"
7 1.3 "	"	"
8 1.0 "	"	"
9 0.8 "	"	"
10 0.6 "	"	"
11 0.5 "	"	"
12 0.4 "	"	"
13 0.3 "	"	"
14 0.25"	"	"
15 0.2 "	"	"
16 0.2 "	"	"
17 0.15"	"	"

(7) Leads Sheets

Description	Quantity per 1 unit	Quantity per 3 units
Leads Sheets 2.5 <sup>m/m</sup> x 200 <sup>m/m</sup> x 200 <sup>m/m</sup> 1 C/S (56 sheets)	30 C/S	90 C/S

(8) Plastic/Synthetic Rubber Floats

Description	Quantity per 1 unit	Quantity per 3 units
Floats Cylinder type No. 100 36 <sup>m/m</sup> x 88 <sup>m/m</sup> x 12 <sup>m/m</sup> 500 pcs/case, Wooden box package	20 C/S	60 C/S

## CHAPTER 5 CONCLUSION





## CHAPTER 5 CONCLUSION

### 5 - 1 Effect

Since the civilian administration of the Limann Government took power on September 24, 1979, the Government of Ghana has been energetically engaged in restoration and redirection in various fields. In particular, the government has drafted the 2-year Food Production Increase Plan on the assumption that increased production in agriculture would stabilize the economy and the welfare of Ghana. The Plan includes the following objectives:

- 1) To achieve the production target for food
- 2) To set up concrete development measures for irrigation facilities
- 3) To set up concrete measures for improving the productivity in the fishery sector
- 4) To set up productive targets for livestock and poultry
- 5) To support a food productivity increase campaign by the Government of Ghana.
- 6) To set up concrete government measures to foster the advancement of poor fishermen

The policies and elements of this project have been decided and implemented as part of technical cooperation in response to item 3) above. The basic design study was implemented to examine and analyze the equipment and materials necessary for repairing the fleets of canoes in the various regions. The details were confirmed by the fisheries officials, Ministry of Agriculture and the study members through extensive discussions on how efficiently and effectively they would be utilized and operated by the Ghanaian Fisheries officials after delivery. In the light of the above, it is hoped that the following equipment and materials will be given full consideration to meet the scheduled objectives of Japanese grant assistance. The following effects are expected if the Japanese grant assistance for the equipment and materials are provided to the Government of Ghana.

#### 5 - 1 - 1 Effect on Repairing Canoe Fleets

Fishery in Ghana can be classified into the following types:

- 1) Canoe fishery
- 2) Coastal fishery
- 3) Distant water fishery
- 4) Inland water fishery

It is said that the canoe fishery catch shared 75% of the total of Ghana fishery in 1979, which has increased lately due to increase in coastal fishery. This, however, will cause the number of vessels to increase and create a more serious problem for the investment activities of ports and harbours in Ghana. The distant water fishery has been stagnant due to problems regarding the coastal development of marine resources and the 200 nautical mile limit of territorial waters. At present, the existing outboard motors and fishing gear and nets are aged. The study team sincerely hopes that the Government of Japan will timely pick up outboard motors, fishing gear and nets as part of grant assistance and thus contribute to the improvement & modernization of the Ghanaian fleet of canoes.

Furthermore, the team conducted surveys at predetermined sites and proved that the outboard motors, fishing gear and nets kept aggravating the existing situation due to their age. Therefore the Japanese grant assistance, if realized, will have a significant impact to remobilize the canoe fleet to that extent that the implementation of the fisheries project will be in line with the National Plan.

#### 5 - 1 - 2 Effect on Increasing Food Productivity

The fish catch by canoe fishing was 176,000 M/T in 1978, and 140,000 M/T in 1979. According to the explanation of the Fisheries Administration officials, the decline was caused by the limited supply of spare parts for outboard motors.

In the event that Japanese grant assistance is extended to the Government of Ghana, it will accelerate the mechanization of non-motorized canoes, the remobilization of broken ones by replacing the consumed parts with new ones, and will improve the productivity

of canoe fishery. In other words, this project will contribute to the aims of the Government of Ghana to stabilize the economy and promote the welfare of the people.

## 5 - 2 Recommendations and Suggestions

### 5 - 2 - 1 Effective Use of Equipment and Materials

It is very important to assign well qualified, skilled personnel, to allocate the necessary budget, and to utilize all resources effectively in management, maintenance, and operations.

### 5 - 2 - 2 Improvement for Canoe Fishery

There are many things that the Government of Ghana is incumbent to give a serious consideration to innovate and improve the management scale and the existing facilities of canoe fishery due to the special features of locality and of fish catch mainly originated from canoe fishery.

### 5 - 2 - 3 Fishing Canoe

It is assumed that an existing canoe with single body has poor stability and is difficult to mobilize. It is advisable to examine the introduction of a canoe with two floats to increase stability and to improve the annual rate of mobilization. With proper arrangement, this in turn will surely increase the annual fish catch.

### 5 - 2 - 4 Canoe Fishery Cooperative Association

In Japan, the fishery cooperative associations were organized and consolidated on a nationwide scale with the government subsidies at the beginning stage to provide mutual benefit for its members (fishermen). Since then, the cooperatives have actively been functioning up to date. On the other hand, there are also kinds of canoe fishery cooperative associations in Ghana, the government is incumbent to examine the feasibility of fostering Ghanaian fishery cooperative associations to achieve smooth improvement of productivity in canoe fishery.

#### 5 - 2 - 5 Marketing

The marketing system surveyed at the sites, differs from that in advanced countries, but it seems quite rational to fit the existing state of marketing in Ghana. It is advisable to innovate and improve a marketing system gradually by introducing modernized methods. In this way the Government of Ghana will be able to achieve its aim of increasing marine protein and distributing it smoothly to the people in Ghana.

#### 5 - 2 - 6 Manufacturing and Processing

It is advisable to examine the feasibility of manufacturing processed marine products to offer better quality and the more varieties for the local diet. To date fish has merely been processed by natural seasoning at non-uniformed and low rates of productivity.

#### 5 - 2 - 7 Training of Coastal Fishermen

The Minister of Agriculture conferred with the members of the team about his intention to raise the level of knowledge of fishermen. Indeed, it is urgent and indispensable to foster personnel, by increasing their specialized knowledge with the long-term view for the promotion of fishery in Ghana.

In conclusion, the Japanese study team sincerely hopes that the equipment and materials to be granted will help Ghana promote its fishery sector and establish a base for the development of the whole economy.

## A N N E X



1. Basic Design Study Team

Name	Task	Current Position
NAKAMURA, Noriharu	Leader	Fishing Boat Inspector, Fishing Boat Division, Oceanic Fisheries Dept., Ministry of Agriculture, Forestry and Fisheries
KONDO, Yoshihisa	Planning and Coordination	Project Coordinator, Social Development Dept., Japan International Cooperation Agency
MATSUMARU, Ryo	Fishing Operation	Manager, Fishing Operation Planning Office, Nichiro Gyogyo Kaisha Ltd.
OKADA, Hideo	Engines and Shipbuilding	Staff Manager, Ships Engineering Dept., Nichiro Gyogyo Kaisha Ltd.
TAKAYANAGI, Hisao	Fishing Nets and Gears	Staff Manager, Overseas Operations Dept. Nichiro Gyogyo Kaisha Ltd.

## 2. Study Itinerary

- Oct. 10 (Fri) Lv. Tokyo at 22:30 by JL 421 via Anchorage.
- 11 (Sat) Av. London
- 12 (Sun) Lv. London to Accra via Zurich by SR 801 & 268.  
Av. Accra.
- 13 (Mon) Courtesy call to the Embassy of Japan in Accra.  
General orientation on the study itinerary and the existing conditions in Ghana.  
Courtesy call to Minister, Deputy Minister, Principal Under-secretary, Undersecretary, Director General, and then Director, Fisheries Administration, Ministry of Agriculture.  
General orientation on fishery conditions and the study itinerary.  
Investigation of Accra Canoe Ports and the Kofifoh Shipbuilding Yard.
- 14 (Tue) Visit to Fisheries Administration, Tema Fisheries Research Unit, and Tema Ports where the team boarded the vessel called "KAKADIAMAA" granted last year by the Government of Japan, and questioned the captain regarding the voyage records.  
Visit to the Tema Regional Fishery Office.  
Investigated the general and fishery state in Tema.  
Conferred with staff members of the Inshore Vessel Owners Association.  
Visit to the State Fishery Cooperation where the general conditions of fishery in Tema were explained to the team members and cold stores & other workshop were observed.  
Visit to Tema Canoe Ports.



- Oct. 15 (Wed) Visit to the Winneba Regional Fishery Office.  
Investigated Winneba Canoe Ports, processing factories,  
and fish landing shores.  
Visit to Winneba Fishery Cooperative Association where  
discussions were held with cooperative staff members  
and Mr. Nagafukada, the Japan Overseas Cooperation  
Volunteers (JOCV).  
Visit to the Elmina Regional Fishery Office.  
Investigated the general conditions of fishery in Elmina.  
Visit to the Yartel Shipbuilding Yard in which small-size  
fishing vessels were built.
- 16 (Thu) Discussions with fisheries officials, Fisheries Administr-  
ation, Ministry of Agriculture regarding the equipment &  
materials to be granted; drafted Minutes.  
Visit to Ministry of Finance and Economic Planning.  
Conferred with an international cooperation officer  
regarding the use plan for the equipment & materials to  
be granted.  
Participated in a reception sponsored by the Minister of  
Agriculture.
- 17 (Fri) Conferred with the Director General, Ministry of  
Agriculture regarding the draft Minutes.  
Signed the Minutes by Director, Fisheries Administration  
and the team leader.  
Reported the above to the Minister of Agriculture and  
the Japanese Ambassador in Ghana.  
Participated in a reception sponsored by the Japanese  
Ambassador in Ghana.
- 18 (Sat) Meeting with team members and preparations to compile  
the report.  
Participated in a reception held by the team for the  
officials concerned.
- 19 (Sun) Lv. Accra at 19:00 by WT 90  
Av. at Lagos at 21:00.

3. Roster

3-1 Government Officials

3-1-1 Ministry of Agriculture

Minister	Dr. E.K. Andah
Deputy Minister	Dr. Bawa Awunbila
Deputy Minister	Mr. E.N. Katsuriku
Deputy Minister	Mr. J.A. Gyapong
Principal Secretary	Mr. Ben Sali
Director General	Mr. J.N.N. Adjetey

3-1-2 Department of Fisheries

Director	Mr. Victor N. Dowuona
Deputy Director	Mr. F.M.K. Denyoh
Senior Technical Officer	Mr. E.K. Sam
Tema Office:	
Principal Fisheries Officer	Mr. D.A. Owusu
Elmina Office:	
Principal Fisheries Officer	Mr. S. Opoiw Mensah

3-1-3 Ministry of Finance and Economic Planning

Deputy Principal Secretary	Mr. P.K. Agboh
----------------------------	----------------

3-1-4 Inshore Boat Owners Association

Director	Mr. R.A. Sacket
Director	Mr. L.A. Amuzu

3-1-5 Japan Overseas Cooperation Volunteers

Member	Mr. Yuko Nagafukada
--------	---------------------

3-2 Japanese Officials in Ghana

3-2-1 Japanese Embassy

Ambassador	Mr. Masatada Higaki
Councilor	Mr. Hideo Nomoto
First Secretary	Mr. Takashi Suzuki
Second Secretary	Mr. Nobuo Nagai
Attache	Mr. Kazuyoshi Hirayama

3-2-2 Japan International Cooperation Agency

Representative	Mr. Toichi Hashimoto
----------------	----------------------

MINUTES OF DISCUSSIONS ON SMALL-SCALE  
FISHERIES DEVELOPMENT PROJECT IN GHANA

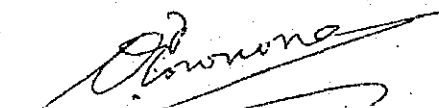
In response to the Government of the Republic of Ghana for technical assistance of the basic design study on the small-scale fisheries development project in the Republic of Ghana, the Government of Japan sent a study team headed by Mr. Noriharu Nakamura, Fishing Boat Inspector, Fishing Boat Division, Oceanic Fisheries Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries to the Republic of Ghana to carry out a basic design study from October 10 to 19, 1980.

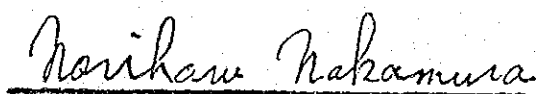
The team conducted the field study and a series of discussions and exchanged views with officials of the Government of Ghana for the small-scale fisheries development project in the whole coastal region of Ghana.

As a result of the study and the discussions, the Japanese team and the Ghanaian Ministry of Agriculture agreed that the Japanese team will prepare and submit a report to both parties for study and implementation.

The major issues regarding the contents of the minutes, confirmed by the Ghanaian and Japanese counterparts are attached herewith in the annex.

In confirmation of mutual agreement we fix our signatures:

  
\_\_\_\_\_  
Mr. V.K. Dowuona,  
Director of Fisheries,  
Accra, Ghana.

  
\_\_\_\_\_  
Mr. Noriharu Nakamura,  
(Leader) Japanese Basic  
Design Study Team

Accra, 16th October, 1980

Annex:

ITEMS OF REQUEST

1. Netting materials for scining (nylon)
2. Netting materials for set nets (nylon)
3. Mending twines (nylon) in spools
4. Ropes in coils (240yds: 200m)
5. Fishing lines and hooks
6. Leads sheets
7. Plastic/synthetic rubber floats
8. Outboard motors, 25hp
9. Spare parts for outboard motors, 25hp
10. General and special tools for outboard engines.

*Pi*

*RM*







JICA