

### 6-1-3 Increase of supply to the interior

Part of landing, about 220 tons, will be supplied to the interior by the utilization of the provided cold room and insulated van trucks, which will contribute to the improvement in nutrition of the people.

Beside the creation of new employment opportunities of fishermen and facility workers, the project will benefit directly about 300 fishermen at Bakau, Barra, and Banjul, and about 100 fish brokers, while through the improvement in distribution of fish it will benefit indirectly the people of Bakau and its neighboring towns plus about 13,000 people of Soma and Mansa Konko in the interior in that they can be supplied with fresh fish.

## 6-2 Economic Analysis

The implementation of the project has to be appraised from the viewpoint of the national economy. To do so, the expected benefit of the project proposed to be implemented in 1992 was calculated, and then compared with other benefits expected from other investment opportunities.

### 6-2-1 Method of Economic Analysis

The economic effect of the project was evaluated calculating an economic internal rate of return (EIRR) of it with the cost/benefit analysis method adopted. Both expected costs and benefits were quantified as many items as practicable; transfer items (tax, subsidiary, etc.) were removed; marketing prices were adjusted in consideration of the economic price (international border price). On the other hand, among benefits unable to be quantified pecuniarily positive factors for the future development in the hinterland were appraised qualitatively.

### 6-2-2 Economic Price

Economic analysis is to appraise the effectiveness of a project from the standpoint of effective redistribution of the national economic resource. But market prices prevailing in a country often do not reflect prices of resources actually consumed due to the excise taxes, domestic tariffs, minimum wages system, and so on in the country. It is therefore necessary to convert the

market price to the economic price (international border price).

There are several methods of conversion, and the method adopted usually in a project involved harbor works is the one called the L-M method or the OECD method; benefits and costs are divided into 5 categories of "trade goods and services," "nontraded goods and services," "skilled labor," "non-skilled labor," and "transfer payment" respectively, and the border price of each category are calculated multiplying various conversion factors (the standard conversion factor, consumption conversion factor, etc.).

However, in this report, besides the 5 categories, assumed general conversion factors based on the current situation of the Gambia and the nature and contents of the project was established and applied.

#### 6-2-3 "Without" case

In the economic analysis of the report, the benefits and costs of the project are compared with the situation of the "without" case (the project is not implemented). This comparison is one of the most important factors in the economic analysis, and the "without" case in the report is established as follows;

"The artisanal coastal fisheries development project in the Republic of the Gambia is not implemented and any new investment is also not made at all on the existing facilities."

#### 6-2-4 Benefit

When the project is implemented (the "with" case), the following benefits are expected.

- ① An increase of production due to the expansion of the fishing fleet and the increase of fishing gear.
- ② A diminution of wastage in post-harvest.
- ③ An increase of employment opportunities and generation of incomes through the construction and management of the project.
- ④ An increase of values added through increasing production of fishery-related industries.

Among them ③ and ④ are not readily expressible by money, and only ① and ② are to be converted pecuniarily as the benefits in analysis.

An increase of annual landing caused by increasing fishing boats to call at

Bakau and newly-granted fishing boats through the implementation of the project is 1,726 tons. At an average price of D 1,600 per ton and an assumed general conversion factor of 0.9 the benefit of ① is ¥ 36.48 million.

Fish spoilage is to be decreased by using ice. Assuming that the present waste rate of 20% is reduced to 5%, 652 tons of fish are to be relieved. Applying the similar procedure to ①, the benefit is ¥ 13.78 million.

#### 6-2-5 Cost

On the analysis, the construction cost, labor cost, maintenance cost, and management cost are to be examined. Replacement investment and the residual value at the last project year are to be neglected.

At an assumed general conversion factor of 0.95, the economic price of the construction cost is ¥ 468.35 million, based on the estimate in the report.

At an assumed general conversion factor of 0.80, the economic price of the labor cost is ¥ 1.86 million.

The maintenance cost is to be calculated at 0.5% of the total investment. Its annual amount is ¥ 2.34 million.

The bulk of the management cost is fuel expenses. Since the market price of fuel oil is almost equal to the border price, a general conversion factor can be established as 0.99, and hence the annual management cost is ¥ 9.29 million.

#### 6-2-6 Evaluation

The economic feasibility of a project can be evaluated using an EIRR, a discount ratio that makes the total cost and the total benefit of a project during the project life equal, and the following formula is effected.

$$\sum_{i=1}^n \frac{B_i - C_i}{(1 + r)^{i-1}} = 0$$

where    n : Project life  
          B<sub>i</sub> : Benefit of the first year  
          C<sub>i</sub> : Cost of the first year  
          r : IRR

Using the figures mentioned above, the EIRR of 4.74% was obtained.

There are various views concerning the determination of the feasibility of a project, and the leading view is that a project is feasible if its EIRR exceeds an OCC (opportunity cost of capital). It is said that the value of OCC in developing countries ranges from 8% to 12%, and the OCC in the Gambia is to be about 8%. The calculated EIRR of the project, 4.74%, is inferior to the benchmark, but in the analysis of the project, as described in 6-2-4, only two benefits were calculated, and on the evaluation of the project the calculated benefits should not always be given priority over such unquantifiable benefits as fishermen's social amenity and relief of poverty. It is certain that the project can, to say the least, create permanent employment opportunities for labor and stimulate business activities and thereby contribute to the economic development of Bakau.

### 6-3 Conclusion and Recommendation

#### 6-3-1 Conclusion

From the standpoint of the expected effects and contribution to the improvement in living conditions of Bakau fishermen mentioned above, it is judged that the project is worth implementing as a grant aid program. At the same time it is recommended that in order to produce a further effect of the project the following should be considered in the future.

#### 6-3-2 Recommendation

##### (1) Construction of a landing jetty

A landing jetty, one of the important components of the original project, was cancelled due to the premises road and the term of works. However, it is thought that a landing jetty is the most important facility not only for the development of Bakau fishing base but also for an integrated function of components of the project. It will serve various purposes; preparation for fishing of fishing boats, secure, prompt, and safe landing, prevention of capsizing of fishing boats at the surf zone, shortening of waiting hours for the wave situation favorable to small hand-liners, increase in landing and supply. The prompt construction of a landing jetty is recommended, which will produce the following effects.

① Increase of fish production

The utilization of a landing jetty will shorten working hours for loading and unloading, resulting in an increased fishing hours and thereby an increased fish production. An estimated increase of fish production is shown in Table-29.

Table-29 Increase of fish production by the utilization of landing jetty

Fishing boats	Reducible hour		Total		Increase of production yearly
	Preparation	Landing	Daily	Yearly	
Hand-liner	30 min	10 min	40 min	210 hours	210 × 2.5=525 kg
Large hand-liner	10 min	30 min	40 min	210 hours	210 × 14=2940 kg
Bottom gill-netter	10 min	20 min	30 min	157 hours	157 × 10=1570 kg
Purse seiner	10 min	40 min	50 min	262 hours	157 × 95=24890kg

Hence the total increase in the year is

Hand-liners	28 boats × 525 kg	= 14,700 kg
Large hand-liners	1 boat × 2,940kg	= 2,940 kg
Bottom gillnetters	6 boats × 1,570kg	= 9,420 kg
(Bottom fish subtotal)		27,060 kg
Purse seiners	7 boats × 24,890kg	=174,230 kg
Grand total		201,290 kg

That is, additional some 200 tons of fish other than an increase of some 1,700 tons fish produced by the project are expected.

② Security of safety

When the fishing boats approach the beach beyond the surf zone, they may capsize or heavily list sometimes, especially in a rough weather, due to a failure of surfing, resulting in loss of catches or fishing gear or in submerged outboard motors. A landing jetty can prevent these accidents completely. After landing the fishermen can unload their outboard motors and fishing gear to make beaching easy with their lightened boats.

③ Increasing fishing boats call at Bakau

Availability of a landing jetty will attract fishing boats which are based on landing spots other than Bakau since they are relieved from beaching for loading and unloading, resulting in better utilization of the shore facilities including the ice-making plant and cold room due to increasing landing and thereby increasing brokers.

④ Structure

In the original plan a landing jetty was designed to have a direct piling structure equipped with 8 steps to meet the tidal requirements of some 2 m at the maximum. However, another design with a modified tip, allowing part of the jetty to be used at low tide, should be examined.

(2) Utilization of the training scheme

The Banjul Fishermen Training Center provided by Japan is now training fishermen for fishing in both the classroom instruction and on-the-job training on board the training vessel. It is thought that to place the trainee fishermen finished the course in the Center under an obligation to use the shore facilities besides the fishing gear supplied by the project will promote a better understanding of ice-making/cold storage technique. Furthermore, it is expected that after these experienced trainee fishermen went home they will contribute to improvement in fishery technology in the whole country.

Cost Benefit Analysis

Year	Cost ('000yen)				Benefit ('000yen)			Benefit / Cost		Net Present Value		(NPV)
	Construction Cost	Management / Operation		Total	Increase of Landing	Diminution of Spoiled Fish	Total	Benefit / Cost	Benefit	Cost	Benefit / Cost	
		Labor cost	Maintenance Cost									
1992	468,350			468,350						0	468,350	-468,350
1993		1,860	2,340	13,490	36,480	13,780	50,260	36,770	640,177	12,879	35,105	
1994		1,860	2,340	13,490	36,480	13,780	50,260	36,770	45,810	12,296	33,515	
1995		1,860	2,340	13,490	36,480	13,780	50,260	36,770	43,736	11,739	31,997	
1996		1,860	2,340	13,490	36,480	13,780	50,260	36,770	41,755	11,207	30,548	
1997		1,860	2,340	13,490	36,480	13,780	50,260	36,770	39,864	10,700	29,164	
1998		1,860	2,340	13,490	36,480	13,780	50,260	36,770	38,058	10,215	27,843	
1999		1,860	2,340	13,490	36,480	13,780	50,260	36,770	36,335	9,752	26,582	
2000		1,860	2,340	13,490	36,480	13,780	50,260	36,770	34,689	9,311	25,378	
2001		1,860	2,340	13,490	36,480	13,780	50,260	36,770	33,118	8,889	24,229	
2002		1,860	2,340	13,490	36,480	13,780	50,260	36,770	31,618	8,486	23,182	
2003		1,860	2,340	13,490	36,480	13,780	50,260	36,770	30,186	8,102	22,084	
2004		1,860	2,340	13,490	36,480	13,780	50,260	36,770	28,819	7,735	21,084	
2005		1,860	2,340	13,490	36,480	13,780	50,260	36,770	27,514	7,385	20,129	
2006		1,860	2,340	13,490	36,480	13,780	50,260	36,770	26,267	7,050	19,217	
2007		1,860	2,340	13,490	36,480	13,780	50,260	36,770	25,078	6,731	18,347	
2008		1,860	2,340	13,490	36,480	13,780	50,260	36,770	23,942	6,426	17,516	
2009		1,860	2,340	13,490	36,480	13,780	50,260	36,770	22,858	6,135	16,723	
2010		1,860	2,340	13,490	36,480	13,780	50,260	36,770	21,822	5,857	15,965	
2011		1,860	2,340	13,490	36,480	13,780	50,260	36,770	20,834	5,582	15,242	
2012		1,860	2,340	13,490	36,480	13,780	50,260	36,770	19,890	5,339	14,552	
Total	468,350	37,200	46,800	185,800	738,150	729,600	1,005,200	267,050	640,176	640,176	0	

Calculation Base      EIRR = 10.00 %  
EIRR = 4.74 %

## APPENDIX





# A P P E N D I X

## I. Basic Design Study

- ① Member List of Survey Team
- ② Field Survey Itinerary
- ③ List of Persons Concerned
- ④ Minutes of Discussions.
- ⑤ Basic Data of Natural Condition in Bakau
  - ⑤-1 Result of Water Level Monitoring
  - ⑤-2 Current Direction and Speed
  - ⑤-3 Typical Section of the Site
  - ⑤-4 Result of the Construction Materials
  - ⑤-5 Result of the Boring Test
  - ⑤-6 Topographic Map and Boring Test Spots
  - ⑤-7 Hypocenter Map of the World
- ⑥ Fish Landing at Bakau
- ⑦ Details of the cost to be borne by the Gambia side
- ⑧ Consumer Price

## II. Draft Final Report Explanation

- ① Member List of Survey Team
- ② Field Survey Itinerary
- ③ List of Persons Concerned
- ④ Minutes of Discussion
- ⑤ Certificate of Land Ownership

## III. List of Collected Materials.

## IV. Photographs



## 1. Member List of Survey Team

## Governmental Officials

1	Masaru OKAMOTO	Leader/ Fishing Port Planning	Director, Office of the Overseas Fisheries Cooperation, Oceanic fishery Department, Fishery Agency
2	Yoshio YABE	Project Coordination Grant Aid Programme	Deputy Director, Study Review and Coordination Div. Grant Aid Design and Study Department. JICA

## Consultants

3	Osamu HIRAOKA	Fishery Development/ Fishery Product/ Marketing Planning	D & A Engineering Co., Ltd
4	Kaname MOTOKI	Fishing Port/ Facility Planning	D & A Engineering Co., Ltd
5	Kazumi YAHATA	Facilities Planning	D & A Engineering Co., Ltd
6	Takeo SHOUJI	Natural Condition Survey	D & A Engineering Co., Ltd
7	Masakazu ISHII	Fishing Boat, Fishing Gear and Method	D & A Engineering Co., Ltd
8	Yukio KAMEI	Cost Estimation	D & A Engineering Co., Ltd

## Field Survey Itinerary

APPENDIX I-②

Date			Governmental Officials	C o n s u l t a n t s				
			Mr. Okamoto Mr. Yabe	Hiraoka, Motoki, Yahata	Ishii	Kamei	Shouji	
1	12/3	Tue.	Tokyo 12:50 → Paris 17:35(AF-275)	-ditto-				
2	4	Wed.	Paris 11:20→ Brussel12:15(AF-1222) Brussel14:00→ Banjul 22:10(SN-509)	-ditto-				
3	5	Thu.	Gambia foreign Office Fishing Office	-ditto-				
4	6	Fri.	Meeting at Fishing Office	-ditto-				Preparation of Site Survey
5	7	Sat.	-ditto-	-ditto-				"
6	8	Sun.	Survey:Mansa konko Ice Making Facility	Minuites	Survey: Landing	Collection of Materials	"	
7	9	Mon.	Dicussion at Fishing Office	-ditto-	-ditto-	-ditto-	"	
8	10	Tue.	Conclution of Minuites	-ditto-				Site Survey
9	11	Wed.	Survey at EC project	-ditto-				"
10	12	Thu.	Dicussion about Itinerary	-ditto-				"
11	13	Fri.	Banjul 09:15→ Dakar10:00(DS-432)	Collection of Materials				"
12	14	Sat.	Dakar 23:25 →	Survey: Italian Project and Mansa kokno Ice Making Facility				"
13	15	sun.	Paris 06:45(AF-316)	Collectionof Materials				"
14	16	Mon.	Paris 15:00 →	"				"
15	17	Tue.	Tokyo 10:55(AF-276)	"				"
16	18	Wed.		Banjul 23:10 →(SN-509)		Collection of Materials	"	
17	19	Thu.		Brusse106:10, 07:30→Paris08:25(SN-921)		"	"	
18	20	Fri.		Paris 15:00 →		"	"	
19	21	Sat.		Tokyo 10:55(AF-476)		"	"	
20	22	Sun.				"	"	
21	23	Mon.				"	"	
22	24	Tue.				"	"	

Field Survey Itinerary

Date			C o n s u l t a n t s	
			Kamei	Shouji
23	25	Wed.	Collection of Materials	Site Survey
24	26	Thu.	"	"
25	27	Fri.	Remove of Equipment and Arrangement of Materials	
26	28	Sat.	Banjul 17:45→ Dakar 23:59→	Dakar 18:20(GH-560)
27	29	Sun.		Paris 06:40
28	30	Mon.	Paris 15:00	
29	31	Tue.		Tokyo 10:55

## 3. List of Persons Concerned

## Ministry of Natural Resources &amp; the Environment

Sarjo Touray : Minister of Natural Resources & The Environment

Sulayman Samba : Principal Secretary Ministry of Natural Resources  
& The Environment

Ousman K.L. Dramaah : Director of Fisheries

Austin Jones : Asst. Director of Fisheries

Alhaji Jallow : Senior Fisheries Officer

Amadou Saine : Fisheries Officer

Madou Jama Suwareh : Fisheries Officer

Ebou Mbye : Principal Fisheries Asst

Matarr Bah : Principal Fisheries Asst

## Fisheries Department

Nobuhumi Hunabashi : JICA Fishing Expert

## Ministry of External Affairs

Omar Njie : Deputy Permanent Secretary

## Japanese Embassy in Senegal

Manami Okada : Attaché

MINUTES OF DISCUSSIONS  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR IMPROVEMENT OF ARTISANAL COASTAL FISHERIES  
IN  
THE REPUBLIC OF THE GAMBIA

In response to the request of the Government of The Republic of The Gambia, the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Artisanal Coastal Fisheries (the Project), and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to The Gambia a study team, which is headed by Mr. Masaru Okamoto, Director, Office of Overseas Fishery Cooperation, Oceanic Fishery Department, Fisheries Agency, and is scheduled to stay in the country from December 4 to December 28, 1991.

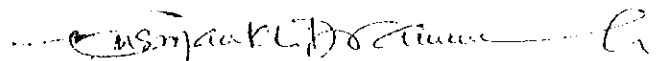
The team held discussions with officials of The Government of The Gambia and conducted a field survey in the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed with further works and prepare the Basic Design report.

Banjul, December 10, 1991

岡本 勝

Mr. Masaru Okamoto  
Leader  
Basic Design Study Team  
JICA



Mr. Ousman Drammeh  
Director  
Fisheries Department  
Ministry of Natural Resources  
and the Environment

DIRECTOR OF FISHERIES



## Attachment

### 1. Objectives

The Project aims to increase in fish production and improve fish handling, processing and distribution in order to improve socio-economic condition of fisherfolk of Bakau area through the provision of fisheries facilities and equipments.

### 2. Project area

The project site is located in Bakau. (Annex-1)

### 3. Responsible organization, executing organization

- (1) Responsible organization: Ministry of Natural Resources and  
the Environment
- (2) Executing organization : Department of Fisheries

### 4. Project components requested by The Government of The Gambia

- (1) Main project components found through discussions between the team and The Gambian side and field survey are shown in Annex-2.
- (2) Both sides agreed that the proposed components will be studied through further field work and, study in Japan and finalized at the discussion of the Draft Final Report.

### 5. Japan's Grant Aid system

- (1) The Gambian side has understood Japanese Grant Aid system explained by the team.
- (2) The Gambian side will take necessary measures described in Annex-3, on the condition the Government of Japan decides to extend the Grant Aid for the Project.

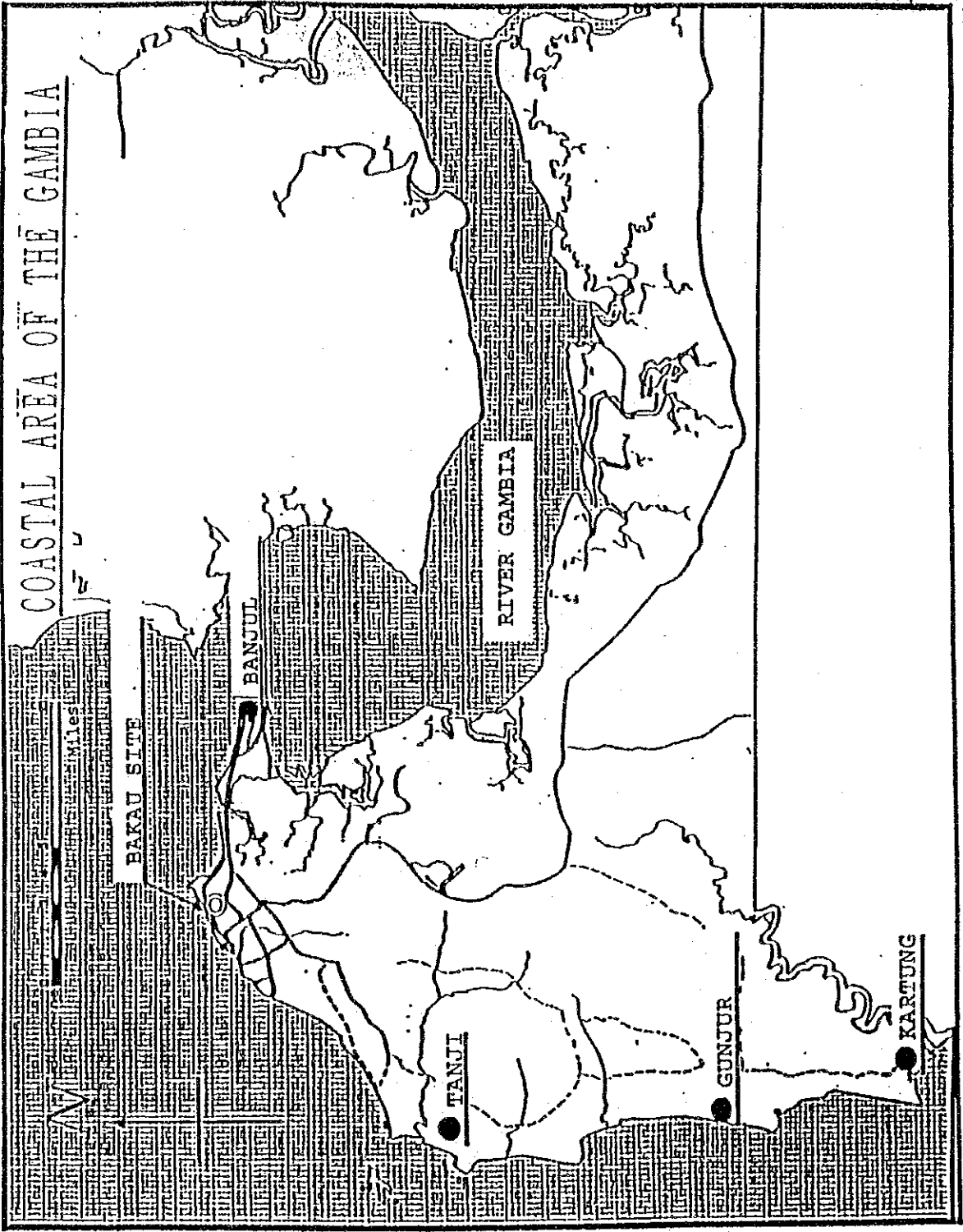
6. Schedule of the study

- (1) The consultants will proceed with further studies in the Gambia until December 28, 1991.
- (2) JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents around February, 1992.
- (3) Based on the Minutes of Discussions and technical examination of the study, JICA will complete the final report and send it to The Government of The Gambia.

7. Proper use of equipments and Counterpart fund

When the equipments are provided under the Project, The Government of The Gambia will take necessary measures to ensure the following:

- (1) To distribute the equipments to qualified people who participate in the Project.
- (2) To sell and/or lease the equipments at reasonable cost and / or charges.
- (3) To raise the fund ( Counterpart fund ) by sales and / or lease and deposit it in an account of The Government of The Gambia/ Department of Fisheries.
- (4) To utilize the above-mentioned fund for revolving the Project properly, such as purchasing of spare parts and / or maintenance of the equipments provided under the Project.
- (5) To inform the balance of the account and purpose of utilization to the Government of Japan.
- (6) To utilize the fund with the authorization of the Government of Japan in advance.



\* Area A shown by broad line is the actual Project site.

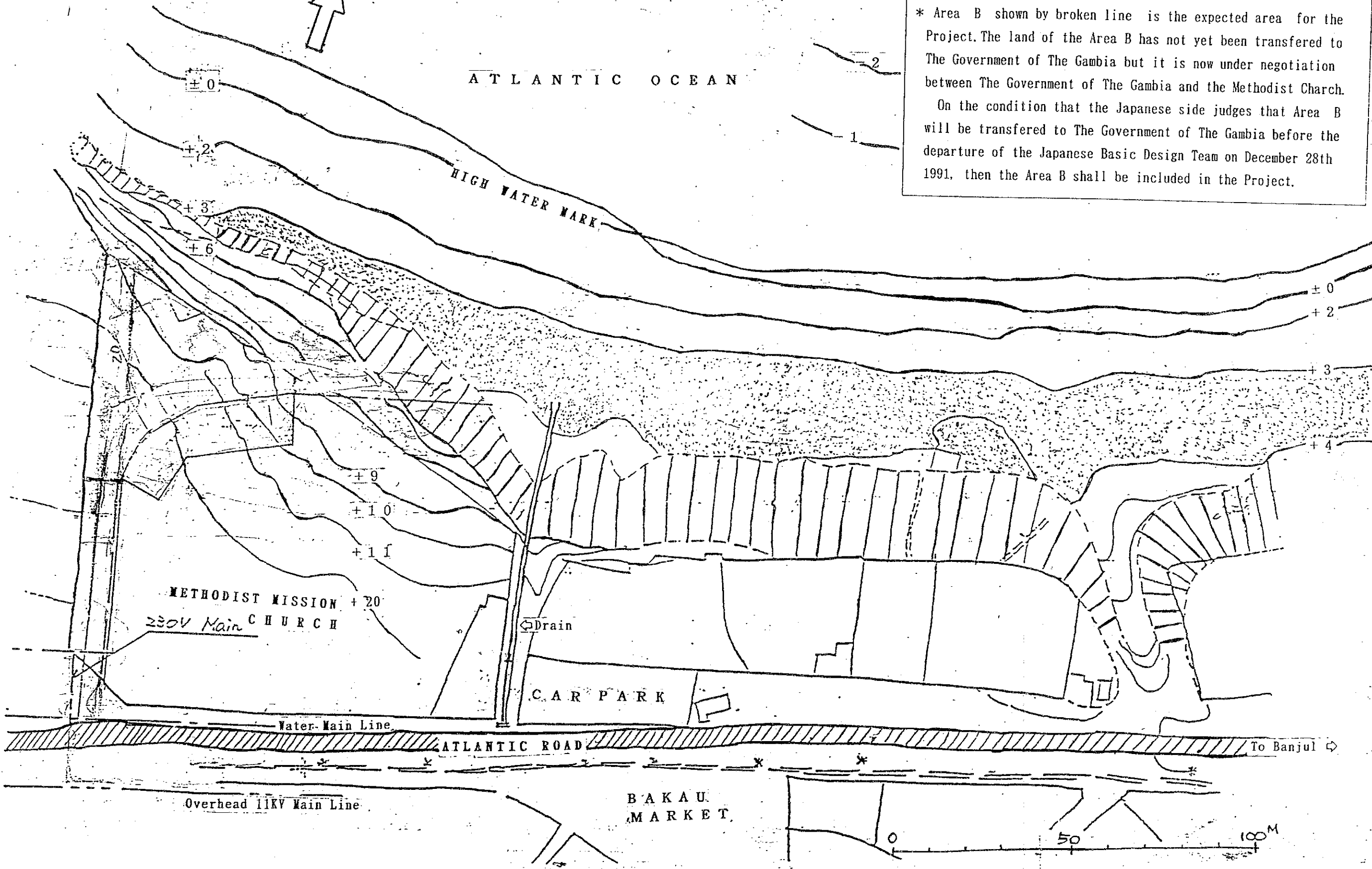
\* Area B shown by broken line is the expected area for the Project. The land of the Area B has not yet been transferred to the Government of The Gambia but it is now under negotiation between the Government of The Gambia and the Methodist Church.

On the condition that the Japanese side judges that Area B will be transferred to the Government of The Gambia before the departure of the Japanese Basic Design Team on December 28th 1991, then the Area B shall be included in the Project.



ATLANTIC OCEAN

\* Area A shown by broad line is the actual Project site.  
\* Area B shown by broken line is the expected area for the Project. The land of the Area B has not yet been transferred to The Government of The Gambia but it is now under negotiation between The Government of The Gambia and the Methodist Church.  
On the condition that the Japanese side judges that Area B will be transferred to The Government of The Gambia before the departure of the Japanese Basic Design Team on December 28th 1991, then the Area B shall be included in the Project.





Annex-2  
Main project components

★ Landing jetty

☆ Ice plant 2.5tons/day

☆ Cold room 10tons, -20 °C

☆ Back up generator

Smoking hut

Rack for drying

☆ Office, Workshop, Store

Fishermen's store

Shade for fish treating

☆ Water tank

☆ Fuel tank

Diesel outboard engine 27hp

13m canoe type FRP boat

Petrol outboard engine 25hp

Spare parts for above outboard engines

Insulated van 2.0t

Tools for maintenance

Purse seine net for canoe

Gill net to catch bonga

Bottom gill net

Materials for fish handling

In the case that the Area B is not included in the Project, then:

1) the item marked ★ shall be deleted from the Project.

2) the items marked ☆ shall be subjected to further study and analysis by the Japanese side upon its return to Japan after which it shall be decided whether the items shall be deleted or included in the Project.

Annex-3

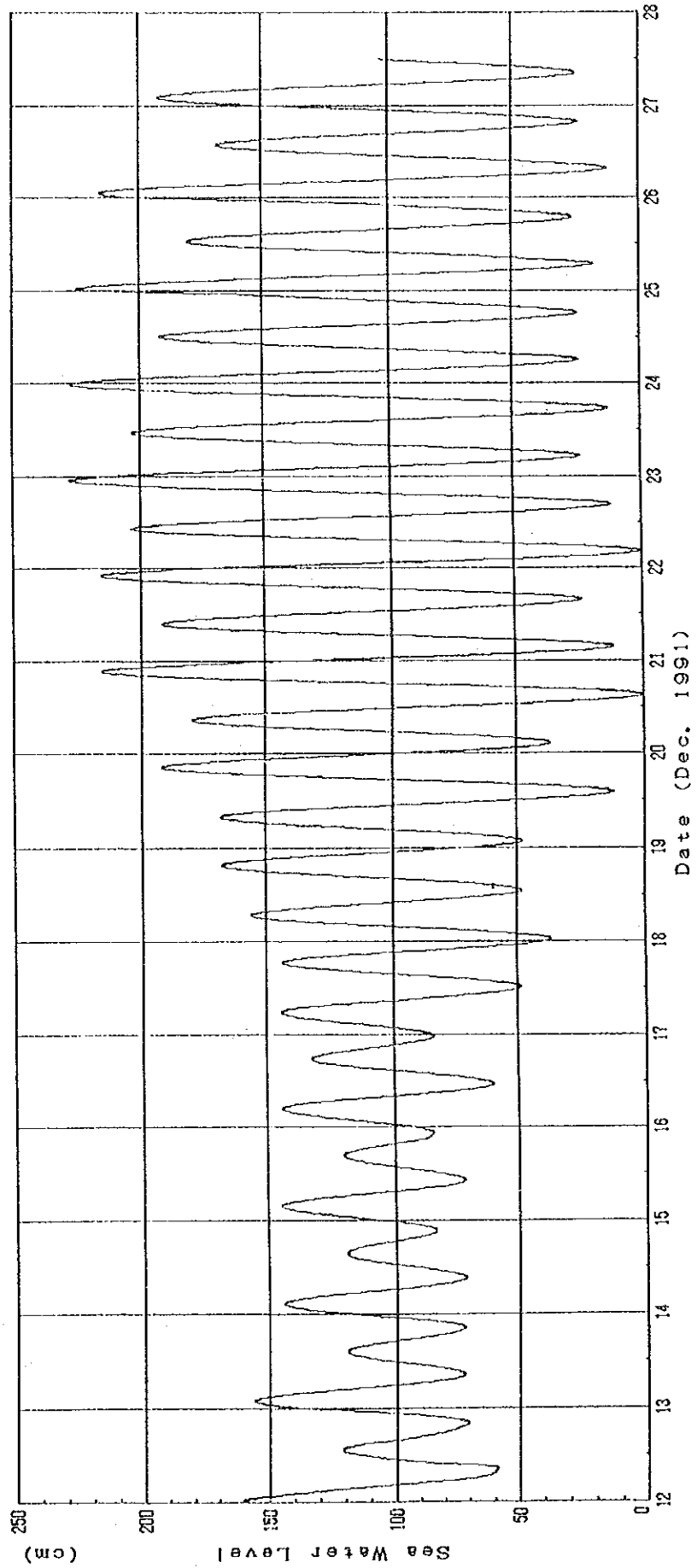
Necessary measures to be taken by The Government of The Gambia in case Japan's Grant Aid is executed.

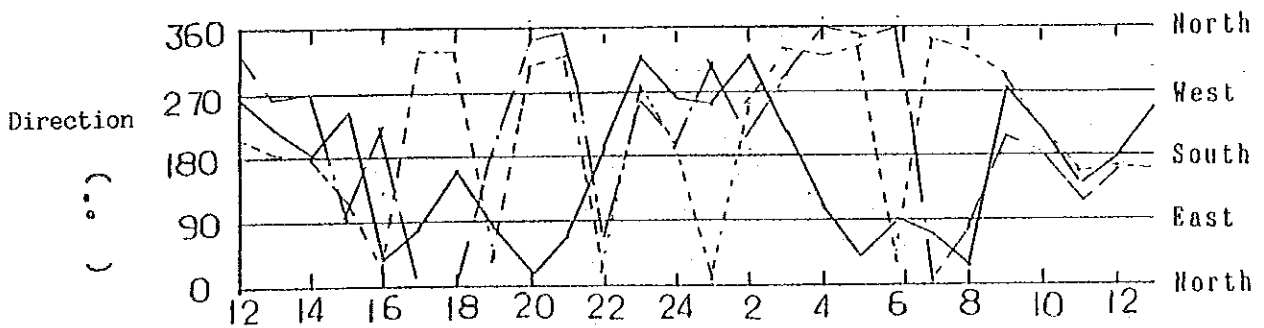
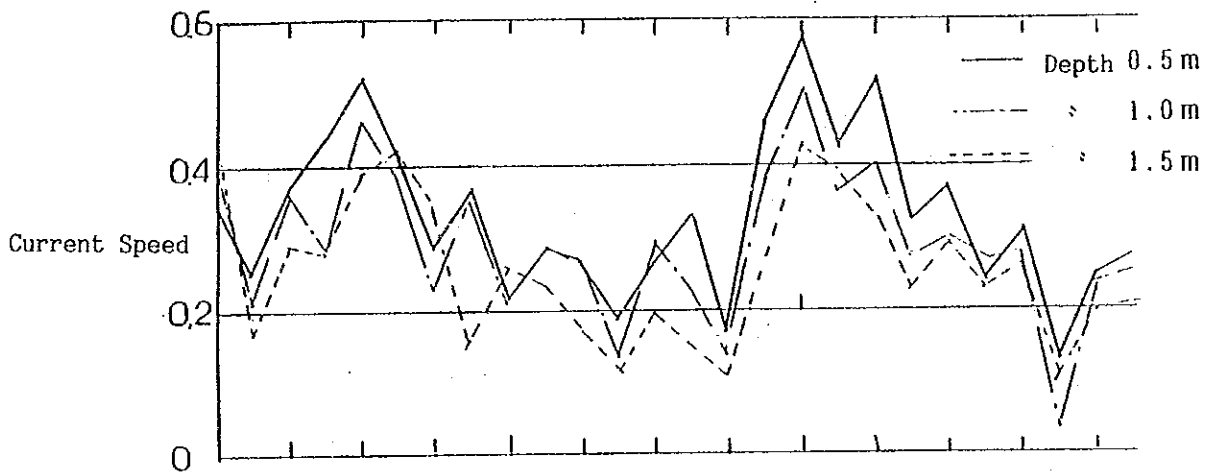
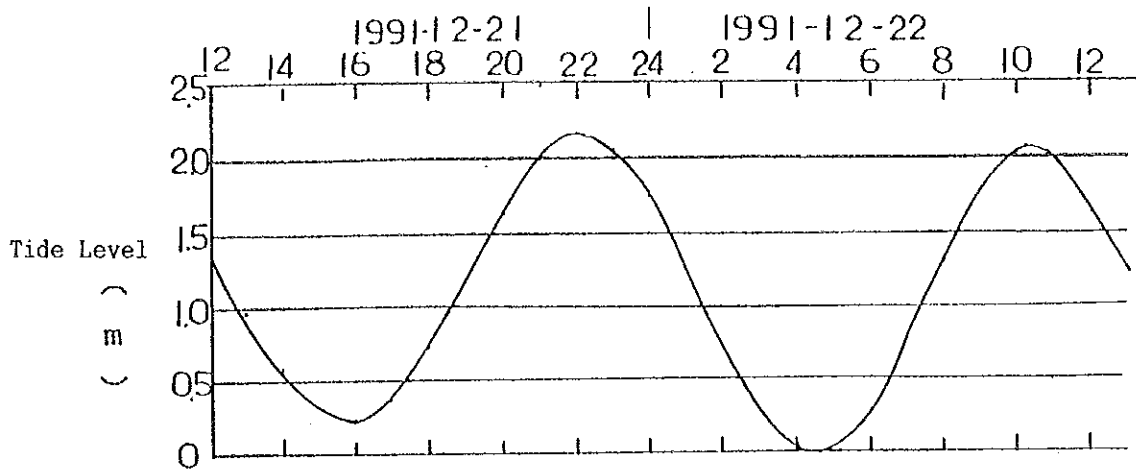
1. To secure the ownership and/or right use of sites for the Project.
2. To clear the site prior to commencement of the construction.
3. To secure yard for stocking material and constructing temporary facilities at the Project site.
4. To provide necessary permissions, licenses and other authorizations for smooth implementation of the Project.
5. To improve the access road to the Project site.
6. To provide facilities for the distribution of the electricity, water supply, drainage, telephone line and other incidental facilities.
7. To ensure prompt unloading, tax exemption, and customs clearance of the goods for the Project at the port of disembarkation in The Gambia.
8. To bear commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.
9. To exempt taxes and take necessary measures for customs clearance of the materials and equipments brought for the Project at the port of disembarkation.
10. To accord Japanese nationals whose services may be required in connection with the supply of products and services under the verified contract such facilities as may be necessary for their entry into The Gambia and stay therein for the performance of their work.
11. To maintain and use properly and effectively the facilities constructed and equipments purchased under the Grant.
12. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipments.
13. To coordinate and solve any matters which may arise with third party and inhabitants living in the Project area during implementation of the Project.



Basic Data of Natural Condition in Bakau

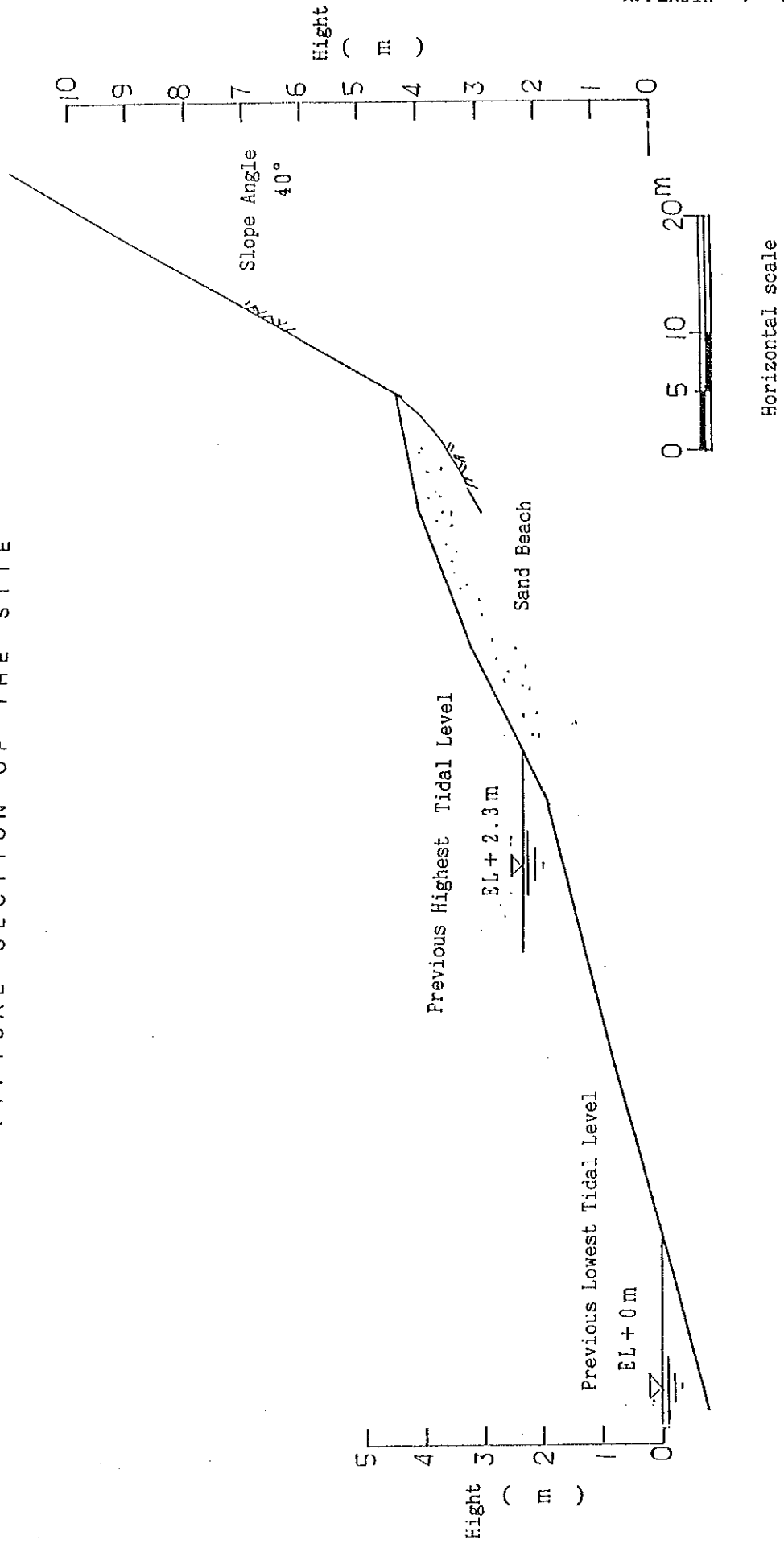
RESULT OF WATER LEVEL MONITORING





CURRENT DIRECTION AND SPEED

TYPICAL SECTION OF THE SITE



RESULT OF  
THE CONSTRUCTION MATERIALS TESTS

INDEX D  
PRELIMINARY TESTING

Laboratory Test	Source	Date	Station	Results	Page Nos.
-----					
Screened Laterite Stockpiles Yundum Camp, 0-5, 5-10, 10-25mm					
Gradation 1	Yundum	15/10/85		35% passing No 200 Sieve	1
Gradation 2	Yundum	15/10/85		26% passing No 200 Sieve	2
Gradation 3	Yundum	15/10/85		15% passing No 200 Sieve	3
Summary Graph		15/10/85			4
Gradation 4	Yundum	16/10/85		30% passing No 200 Sieve	5
Gradation 5	Yundum	16/10/85		25% passing No 200 Sieve	6
Gradation 6	Yundum	16/10/85		14% passing No 200 Sieve	7
Summary Graph		16/10/85			8
Trial Mixes					9
Summary Graph					10
As Dug Laterite Samples - Bafuloto Quarry					
Limits Test 1	Bafuloto	06/11/85		LL=25.0 PI= 8.4	12
Limits Test 2	Bafuloto	06/11/85		LL=24.0 PI= 8.2	13
Gradation 7	Bafuloto	24/10/85		14% passing No 200 Sieve	14
Gradation 8	Bafuloto	24/10/85		15% passing No 200 Sieve	15
Gradation 9	Bafuloto	24/10/85		21% passing No 200 Sieve	16
Gradation 10	Bafuloto	27/10/85		17% passing No 200 Sieve	17
Gradation 11	Bafuloto	27/10/85		17% passing No 200 Sieve	18
Screened Aggregates 60-40, Coarse-Medium (10-25, 5-10mm)					
Gradation 12	Yundum	03/12/85		20% passing No 200 Sieve	20
Gradation 13	Yundum	03/12/85		12% passing No 200 Sieve	21
Summary Graph					25
Proctor 1		27/02/86		2.065g/cm <sup>3</sup> 9.7% Moisture	26
CBR 1	Yundum	28/02/86		62% @ 1.97g/cm <sup>3</sup> 10.1% Moist	27
CBR 2	Yundum	28/02/86		49% @ 1.94g/cm <sup>3</sup> 9.0% Moist	27
CBR 3	Yundum	28/02/86		90% @ 2.08g/cm <sup>3</sup> 9.2% Moist	28
CBR 4	Yundum	28/02/86		39% @ 1.89g/cm <sup>3</sup> 8.5% Moist	28
CBR 5	Yundum	04/03/86		57% @ 1.962g/cm <sup>3</sup>	31
Limits Test 3	Yundum	05/03/86		LL= 28.1 PI= 12.5	32
Memo to File					33
As Dug Laterite Sample - Bafuloto Quarry					
Limits Test 4	Bafuloto	24/02/86		LL= 24.9 PI= 9.4	34
Proctor 2	Bafuloto	24/02/86		2.10g/cm <sup>3</sup> 8.7% Moist	35
CBR 6	Bafuloto	08/03/86		60% @ 1.97g/cm <sup>3</sup> 7.3% Moist	37
CBR 7	Bafuloto	08/03/86		22% @ 1.87g/cm <sup>3</sup> 7.7% Moist	37
CBR 8	Bafuloto	08/03/86		116% @ 2.03g/cm <sup>3</sup> 8.4% Moist	39
CBR 9	Bafuloto	08/03/86		14% @ 1.82g/cm <sup>3</sup> 7.8% Moist	39

CBR 10	Bafuloto	08/03/86	78% @ 1.995g/cm <sup>3</sup>	40	
Memo to File				41	
Screened Aggregates 70-30 Laterite - Beach Sand (42/29/29; 10-25, 5-10, Sand)					
Proctor 3	Yundum	05/03/86	2.09g/cm <sup>3</sup>	9.0% Moist	42
Gradation Summary					44
Limits Test 5	Yundum	11/03/86	LL= 14.9 PI= Non Plastic		45
CBR 11	Yundum	15/03/86	109% @ 2.02g/cm <sup>3</sup>	7.9% Moist	47
CBR 12	Yundum	15/03/86	57% @ 1.97g/cm <sup>3</sup>	7.9% Moist	47
CBR 13	Yundum	15/03/86	176% @ 2.08g/cm <sup>3</sup>	8.5% Moist	49
CBR 14	Yundum	15/03/86	66% @ 1.96g/cm <sup>3</sup>	7.8% Moist	49
CBR 15	Yundum	15/03/86	72% @ 1.986g/cm <sup>3</sup>		50
Memo to File				51	
Summary Graph				52	
Memo - Shoulder Base				53	
Beach Sand					
Gradation 14	Bigilo	21/05/86	.2% passing No 200 Sieve	54	
Proctor 4	Bigilo	16/05/86	1.75g/cm <sup>3</sup>	12.5% Moisture	55

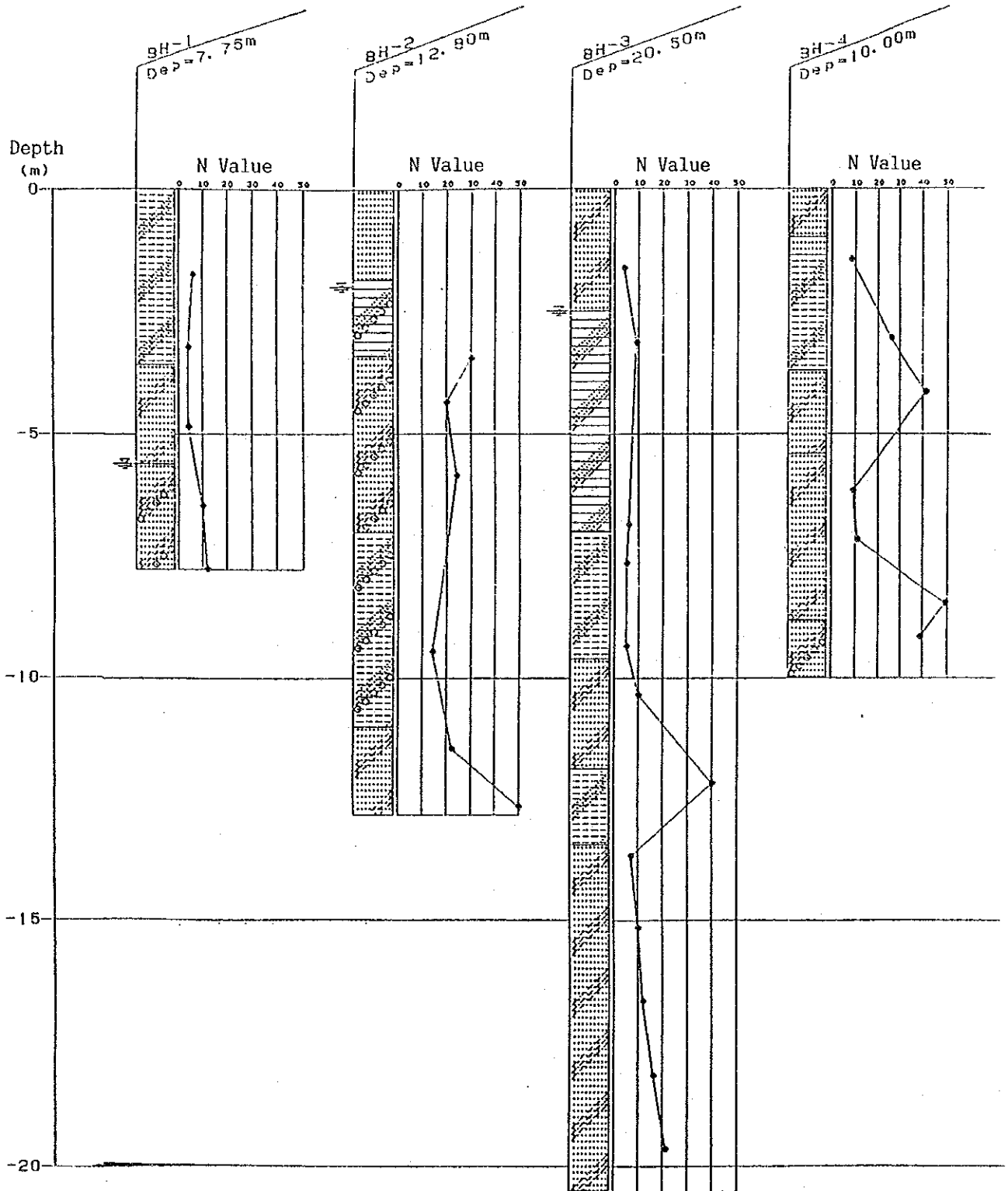
#### SOIL CEMENT

Screened Laterite, Beach Sand, 5-7% Cement (48/32/20 Coarse/Med/Sand)

Gradation 15	Yundum	20/05/86	19.3% passing No 200 Sieve	56
Gradation 16	Yundum	19/05/86	14.4% passing No 200 Sieve	57
Combined Gradation			13.1% passing No 200 Sieve	58
Limits Test 6	Yundum	19/05/86	LL=17.2 PI=3.5	60
Proctor 5	Yundum	21/05/86	2.08 g/cm <sup>3</sup> 8.0% Moisture	62
Soil-Cement 1	Yundum	07/06/86	33.8 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	63
Soil-Cement 2	Yundum	07/06/86	20.1 kg/cm <sup>2</sup> @ 1.84 g/cm <sup>3</sup>	67
Soil-Cement 3	Yundum	07/06/86	29.2 kg/cm <sup>2</sup> @ 1.91 g/cm <sup>3</sup>	68
Soil-Cement 4	Yundum	07/06/86	30.3 kg/cm <sup>2</sup> @ 1.91 g/cm <sup>3</sup>	63
Soil-Cement 5	Yundum	19/06/86	34.5 kg/cm <sup>2</sup> @ 2.05 g/cm <sup>3</sup>	64
Soil-Cement 6	Yundum	19/06/86	34.2 kg/cm <sup>2</sup> @ 2.04 g/cm <sup>3</sup>	64
Soil-Cement 7	Yundum	24/06/86	66.0 kg/cm <sup>2</sup> @ 2.13 g/cm <sup>3</sup>	65
Soil-Cement 8	Yundum	24/06/86	48.0 kg/cm <sup>2</sup> @ 2.07 g/cm <sup>3</sup>	65
Soil-Cement 9	Yundum	24/06/86	35.3 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	65
Soil-Cement 10	Yundum	24/06/86	47.1 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	65
Soil-Cement 11	Yundum	24/06/86	45.5 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	65
Soil-Cement 12	Yundum	26/06/86	45.3 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	66
Soil-Cement 13	Yundum	26/06/86	44.8 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	66
Soil-Cement 14	Yundum	26/06/86	42.7 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	66
Soil-Cement 15	Yundum	26/06/86	38.5 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	66
Soil-Cement 16	Yundum	26/06/86	41.2 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	66
Soil-Cement 17	Yundum	01/07/86	51.4 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	67
Soil-Cement 18	Yundum	01/07/86	32.7 kg/cm <sup>2</sup> @ 1.89 g/cm <sup>3</sup>	67
Soil-Cement 19	Yundum	01/07/86	54.2 kg/cm <sup>2</sup> @ 1.95 g/cm <sup>3</sup>	67
Soil Cement Summary for Blended Aggregates (5.75% cement @ 40 kg/cm <sup>2</sup> )				68

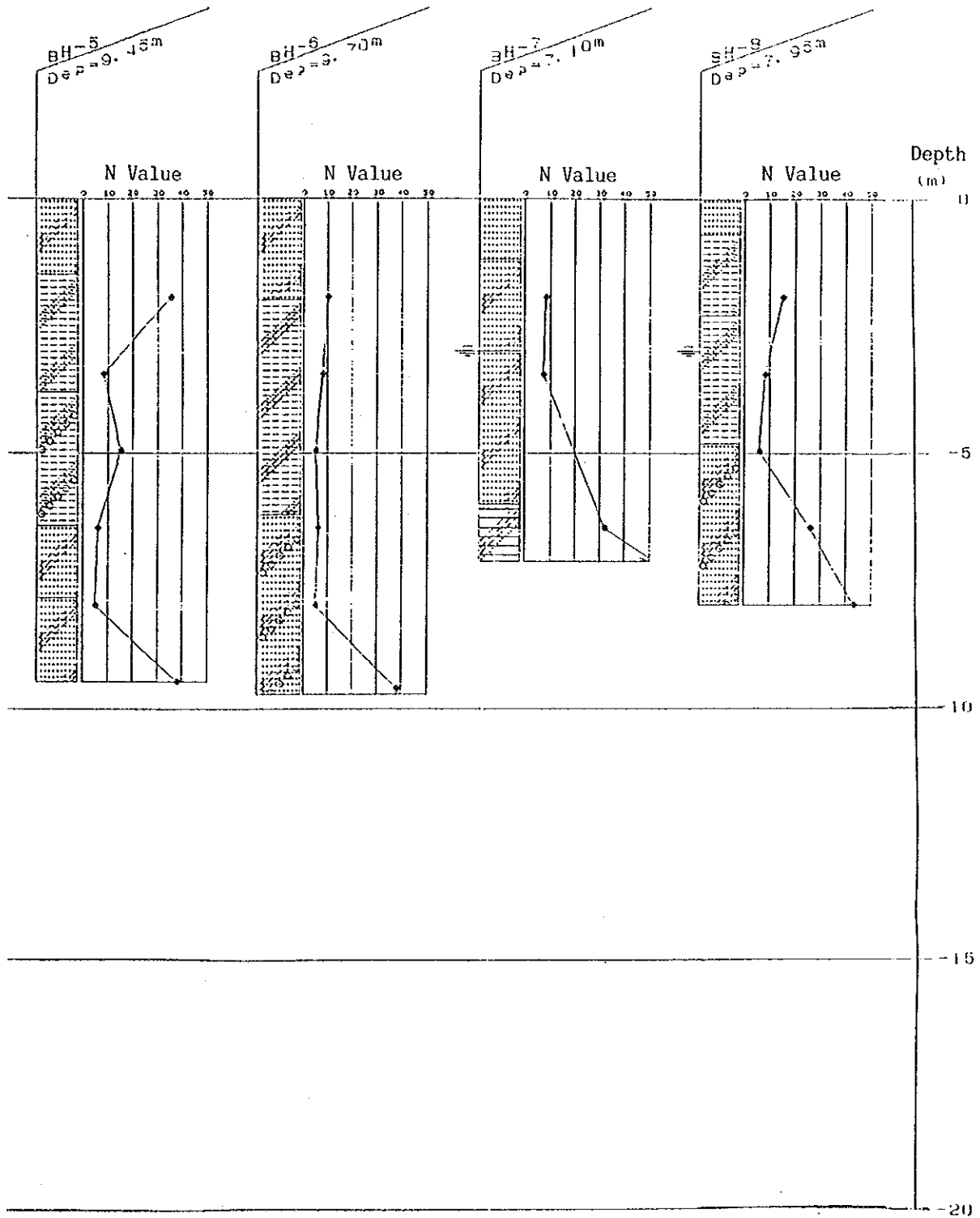
As Dug Laterite (Oversize Removed)				
CBR 16	Bafuloto	27/05/86	47% @ 2.00 g/cm <sup>3</sup> 9.7% Moist	71
CBR 17	Bafuloto	27/05/86	28% @ 1.95 g/cm <sup>3</sup> 9.6% Moist	71
CBR 18	Bafuloto	31/05/86	37% @ 1.971 g/cm <sup>3</sup>	72
Limits Test 7	Bafuloto	24/05/86	LL=24.9 PI=11.7	73
Gradation 17	Bafuloto	24/05/86	17.5% passing No 200 Sieve	74
Proctor 6	Bafuloto	24/05/86	2.075 g/cm <sup>3</sup> 9.0% Moisture	75
Soil-Cement 20	Bafuloto	07/06/86	19.9 kg/cm <sup>2</sup> @ 1.83 g/cm <sup>3</sup>	76
Soil-Cement 21	Bafuloto	07/06/86	31.4 kg/cm <sup>2</sup> @ 1.93 g/cm <sup>3</sup>	76
Soil-Cement 22	Bafuloto	07/06/86	33.6 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	76
Soil-Cement 23	Bafuloto	19/06/86	24.8 kg/cm <sup>2</sup> @ 1.95 g/cm <sup>3</sup>	77
Soil-Cement 24	Bafuloto	19/06/86	36.7 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	77
Soil-Cement 25	Bafuloto	19/06/86	40.6 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	78
Soil-Cement 26	Bafuloto	19/06/86	38.2 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	78
Soil-Cement 27	Bafuloto	19/06/86	42.3 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	78
Soil-Cement 28	Bafuloto	19/06/86	32.4 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	78
Soil-Cement 29	Bafuloto	24/06/86	50.3 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	79
Soil-Cement 30	Bafuloto	24/06/86	46.0 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	79
Soil-Cement 31	Bafuloto	24/06/86	44.7 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	79
Soil-Cement 32	Bafuloto	24/06/86	35.4 kg/cm <sup>2</sup> @ 1.95 g/cm <sup>3</sup>	79
Soil-Cement 33	Bafuloto	24/06/86	41.6 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	79
Soil-Cement Summary for As Dug Laterite			(6.75% Cement @ 40 kg/cm <sup>2</sup> )	80
As Dug Laterite (Oversize Removed) + 30% Beach Sand				
Gradation 18	Yundum	24/05/86	13.7% passing No 200 Sieve	82
Limits Test 8	Yundum	26/05/86	LL=15.8 PI=Non Plastic	83
Proctor 7	Yundum	28/05/86	2.115 g/cm <sup>3</sup> 8.3% Moisture	85
Soil-Cement 34	Yundum	07/06/86	40.7 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	86
Soil-Cement 35	Yundum	07/06/86	32.7 kg/cm <sup>2</sup> @ 1.96 g/cm <sup>3</sup>	86
Soil-Cement 36	Yundum	07/06/86	36.6 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	86
Soil-Cement 37	Yundum	19/06/86	38.0 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	87
Soil-Cement 38	Yundum	19/06/86	48.0 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	87
Soil-Cement 39	Yundum	21/06/86	62.8 kg/cm <sup>2</sup> @ 2.10 g/cm <sup>3</sup>	88
Soil-Cement 40	Yundum	21/06/86	61.0 kg/cm <sup>2</sup> @ 2.06 g/cm <sup>3</sup>	88
Soil-Cement 41	Yundum	21/06/86	50.4 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	88
Soil-Cement 42	Yundum	21/06/86	50.6 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	88
Soil-Cement 43	Yundum	21/06/86	51.7 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	88
Soil-Cement 44	Yundum	21/06/86	34.7 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	88
Soil-Cement 45	Yundum	28/06/86	34.7 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	89
Soil-Cement 46	Yundum	28/06/86	55.8 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	89
Soil-Cement 47	Yundum	28/06/86	42.3 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	89
Soil-Cement 48	Yundum	28/06/86	49.2 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	89
Soil-Cement 49	Yundum	28/06/86	45.7 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	89
Soil-Cement Summary for As Dug Laterite+30% Beach Sand			(5.25% Cement @ 40 kg/cm <sup>2</sup> )	90
Compressive Strength vs Dry Density Summary Graph				92
Compressive Strength vs Cement Content				93
Memo to File - Soil-Cement Mixes				94
Memo to File - French Specification for Soil-Cement				95
Gradation 19	Yundum	28/05/86	11.4% passing No 200 Sieve	96
Gradation 20	Yundum	28/05/86	6.6% passing No 200 Sieve	97
Grading Summary (60/40, 48/32/20)				98
Memo to File				

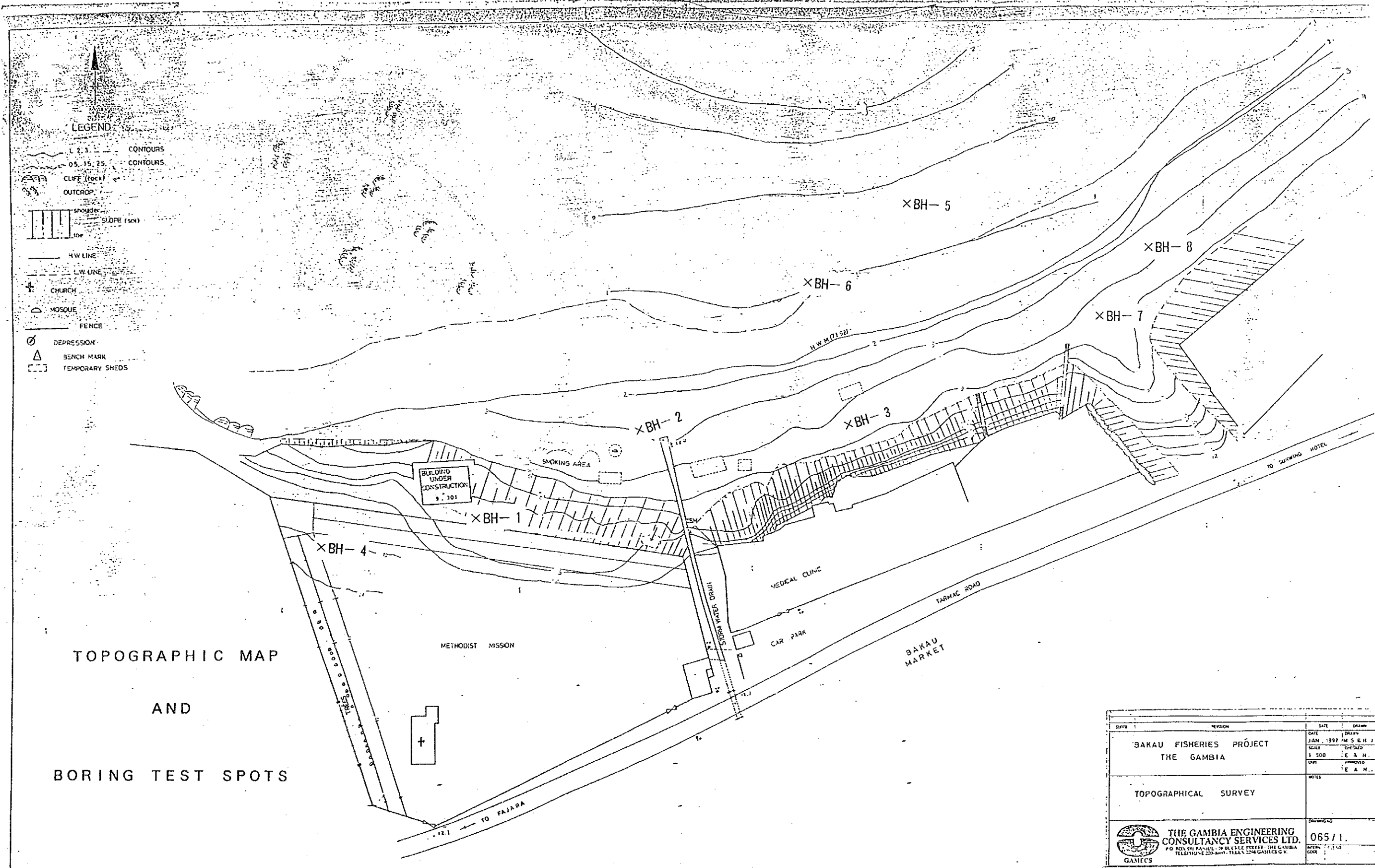
Screened Laterite (70/20/10 Coarse/Med/0-3mm)				
Gradation 21	Bijilo	11/02/88	1.1% passing No 200 Sieve	101
Gradation 22	Yundum	11/02/88	20.1% passing No 200 Sieve	103
Gradation 23	Yundum	15/02/88	34.6% passing No 200 Sieve	105
Gradation 24	Yundum	11/02/88	3.7% passing No 200 Sieve	108
Gradation 25	Yundum	19/02/88	10.9% passing No 200 Sieve	109
Gradation 26	Yundum	19/02/88	6.9% passing No 200 Sieve	111
Proctor 8	Yundum	20/02/88	2.12 g/cm <sup>3</sup> @ 8.0% Moisture	112
Gradation 27	Yundum	03/03/88	17.7% passing No 200 Sieve	113
Gradation 28	Yundum	01/03/88	17.1% passing No 200 Sieve	115
Soil-Cement 50	Yundum	29/02/88	17.5 kg/cm <sup>2</sup> @ 1.96 g/cm <sup>3</sup>	117
Soil-Cement 51	Yundum	29/02/88	9.2 kg/cm <sup>2</sup> @ 1.83 g/cm <sup>3</sup>	117
Soil-Cement 52	Yundum	29/02/88	25.6 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	117
Soil-Cement 53	Yundum	29/02/88	27.5 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	117
Soil-Cement 54	Yundum	02/03/88	23.9 kg/cm <sup>2</sup> @ 2.03 g/cm <sup>3</sup>	118
Soil-Cement 55	Yundum	02/03/88	25.1 kg/cm <sup>2</sup> @ 1.95 g/cm <sup>3</sup>	118
Soil-Cement 56	Yundum	02/03/88	29.5 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	118
Soil-Cement 57	Yundum	02/03/88	30.5 kg/cm <sup>2</sup> @ 2.04 g/cm <sup>3</sup>	118
Soil-Cement 58	Yundum	03/03/88	12.8 kg/cm <sup>2</sup> @ 1.96 g/cm <sup>3</sup>	119
Soil-Cement 59	Yundum	03/03/88	14.9 kg/cm <sup>2</sup> @ 1.97 g/cm <sup>3</sup>	119
Soil-Cement 60	Yundum	03/03/88	25.1 kg/cm <sup>2</sup> @ 2.00 g/cm <sup>3</sup>	119
Soil-Cement 61	Yundum	03/03/88	23.0 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	119
Soil-Cement 62	Yundum	04/03/88	16.2 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	120
Soil-Cement 63	Yundum	04/03/88	17.6 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	120
Soil-Cement 64	Yundum	04/03/88	13.2 kg/cm <sup>2</sup> @ 1.96 g/cm <sup>3</sup>	120
Soil-Cement 65	Yundum	04/03/88	17.0 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	120
Soil-Cement 66	Yundum	05/03/88	20.2 kg/cm <sup>2</sup> @ 1.98 g/cm <sup>3</sup>	121
Soil-Cement 67	Yundum	05/03/88	25.0 kg/cm <sup>2</sup> @ 2.01 g/cm <sup>3</sup>	121
Soil-Cement 68	Yundum	05/03/88	14.5 kg/cm <sup>2</sup> @ 1.94 g/cm <sup>3</sup>	121
Soil-Cement 69	Yundum	05/03/88	18.7 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	121
Soil-Cement 70	Yundum	07/03/88	21.8 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	122
Soil-Cement 71	Yundum	07/03/88	31.9 kg/cm <sup>2</sup> @ 2.02 g/cm <sup>3</sup>	122
Soil-Cement 72	Yundum	07/03/88	27.2 kg/cm <sup>2</sup> @ 1.99 g/cm <sup>3</sup>	122
Soil-Cement 73	Yundum	07/03/88	25.5 kg/cm <sup>2</sup> @ 1.97 g/cm <sup>3</sup>	122
Reject Tests		13/03/88		123
Compressive Strength vs Dry Density Graph				124
Compressive Strength vs Cement Content				125
Memo to File				126



RESULT OF THE BORING TEST

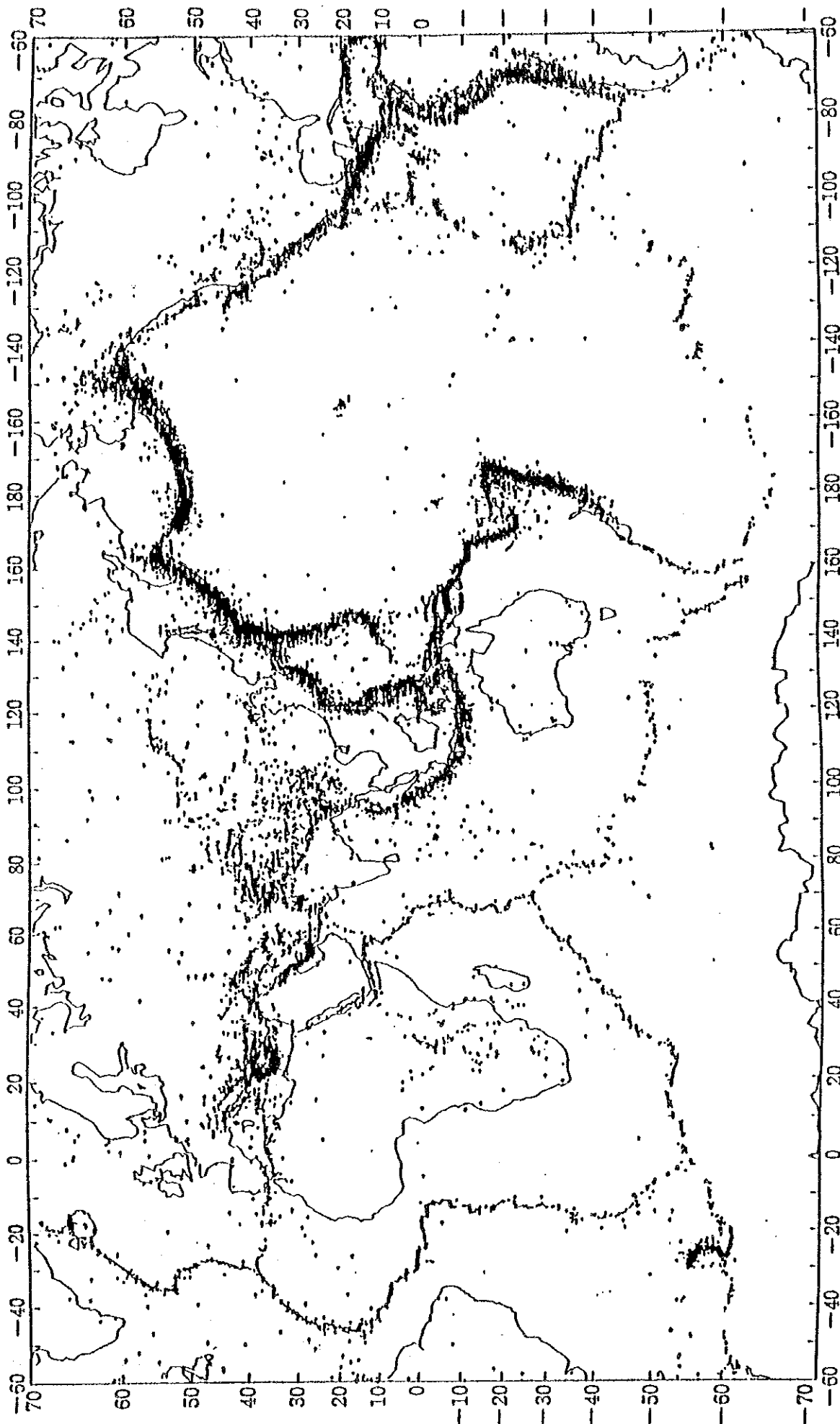








HYPOCENTER MAP OF THE WORLD (M ≤ 4.0 Depth: under 100 km 1964~1982)



(国土地院ヤンタールの図表による)

FISH LANDING IN BAKAU

MT

	Lean Fish		Processing		White Meat												Total				
	Bonga	Sardi-nella	Cat Fish	Shark /Rays	Cassaba Fish	Lady Fish	Banda	Barra-cuda	Kujeli	Grouper	Fotta	Sacca	Mullet	Sole Fish	Shine nose	Tappan -derr		Joter	Lobster	Snapper	Others
1	28.00	*	1.40	53.80	1.00	0.13	1.40	0.80	0.80	1.30	0.30	0.51	*	0.04	0.40	0.34	2.00	*	1.10	0.10	93.42
2	32.10	1.20	2.00	0.50	2.00	*	4.00	4.00	*	1.20	0.50	0.50	*	*	0.80	0.70	2.30	*	4.00	0.20	56.00
3	37.00	1.40	1.20	*	2.20	*	3.00	0.70	*	1.20	0.20	0.80	*	*	0.50	0.60	1.30	*	3.40	0.30	53.80
4	34.10	0.40	0.80	0.40	0.70	0.06	2.00	*	*	1.30	*	0.30	*	0.10	0.04	0.20	0.50	*	0.30	0.10	41.30
5	35.00	0.81	3.00	2.10	3.00	*	3.00	2.00	*	1.30	0.80	*	0.60	*	*	0.70	2.40	*	2.00	*	59.71
6	38.90	0.30	2.10	0.50	3.10	*	2.20	2.00	*	2.00	*	*	*	*	*	0.80	2.00	*	1.40	0.10	58.50
7	33.00	*	1.00	0.70	3.00	*	4.00	5.00	*	2.00	*	1.00	*	*	*	0.80	*	0.60	*	*	52.10
8	17.10	1.00	2.30	1.40	0.60	0.02	3.10	4.00	*	0.40	0.20	0.40	*	*	*	0.60	2.20	*	2.40	*	31.62
9	14.10	0.23	2.20	*	2.40	*	2.40	*	1.10	2.00	*	0.70	*	*	*	1.00	0.80	*	*	*	26.93
10	13.40	0.50	1.10	0.32	1.10	*	2.00	1.10	*	1.30	0.05	0.50	*	*	0.07	1.10	*	*	2.00	0.04	24.58
11	16.00	0.22	2.90	*	2.02	*	2.11	0.74	*	0.57	*	1.08	*	*	*	0.89	1.92	*	0.87	*	29.32
12	17.80	*	10.36	0.02	*	0.10	1.03	0.48	*	0.34	0.22	0.62	*	*	0.59	1.22	0.88	*	2.59	0.07	33.34
SUM	316.50	6.06	30.36	59.74	21.12	0.31	30.24	20.82	1.90	14.91	2.27	6.41	0.60	0.14	2.40	8.95	16.30	0.60	20.06	0.91	560.62
		322.56		90.1															147.94		
	( % )		12.75	25.10															62.15%		

Source; Fisheries Department 1990.

## The Detail of the cost born by The Gambia side

## (1) Cleaning of Site

Removal and rebuilding of wooden rest house

D5,000 × 2 = D10,000

## (2) Fence

Fence D200/m × 90 = D1,600

Acryle stanchion @2.0m Net crimp fence H=2.0m

Foundation 200 × 200 × 400

Gate D6,000 × 2 = D12,000

Angle frame crimp door W=3.0m

sub-total D30,000

## (3) Electricity, Water, Telephone

Electricity Leading-in 15,000

Light pole 10,000

Wiring 30m 25,700

50,700

Water Earth Work 3,300

Connection 10,000

Meter 8,000

21,300

Telephone Telephone Pole 6,500

Wiring, Connecting 1,500

8,000

sub-total D80,000Grand Total D120,000

## APPENDIX I - ⑧

US\$ 1 = D 9.13  
December, 1992

## Consumer Price

Unit: D

Item	Price	Item	Price
Beef (1 kg)	30.00	Gas Cooker (1 Unit)	4,000.00
Chicken (1 kg)	22.00	Refrigerator (1 Unit)	8,000.00
Rice (1 kg)	3.60	Washing Machine (1 Unit)	9,000.00
Salt (1 kg)	14.00	Furniture (Complete)	70,000.00
Sugar (1 kg)	20.00	Copy Machine (1 Unit)	27,000.00
Milk (1 ℓ)	11.00	Color Film (1 Roll)	44.00
Salad Oil (1 ℓ)	17.00	Canned Tuna (200g)	12.00
Cabbage (1 kg)	40.00	Canned Sardine (200g)	10.00
Onion (1 kg)	9.00	Canned Mackerel (200g)	10.00
Potato (1 kg)	15.00		

## Fish Prices

D/kg

Species	Market price	Wholesale price for hotel	Species	Market price	Wholesale price for hotel
Snapper	15.00	18.00	Horse mackerel	7.00	11.00
Ladyfish	15.00	18.00	Mullet	10.00	15.00
Grouper	10.00	14.00	Lobster	100.00	90.00 - 150.00
Sole	13.00	18.00	Shrimp	20.00	15.00 - 45.00
Barracuda	12.00	18.00		7.00	_____

## Prices for Popular Fish D/kg

	Bonga	Catfish
Fresh	1.50~2.50	6.00
Smoked	12.00	_____
Salt/dried	10.00	_____

D/kg

Export Prices	
Shrimp	20.00 - 60.00
Lobster	100.00 - 180.00
Sole	20.00

## 1. Member List of Explanation of Draft Report

## Governmental Officials

- |   |                  |   |  |
|---|------------------|---|--|
| 1 | Mistunobu OHI    | Leader/<br>Fishing Port Planning            | Assistant Director,<br>Office of the Overseas Fisheries<br>Cooperation,<br>Oceanic fishery Department,<br>Fishery Agency |
| 2 | Kastuhiro SASAKI | Project Coordination<br>Grant Aid Programme | Deputy Director,<br>Study Review and Coordination Div.<br>Grant Aid Design and Study<br>Department. JICA                 |

## Consultants

- |   |               |  |                            |
|---|---------------|--|----------------------------|
| 3 | Osamu HIRAOKA | Fishery Development/<br>Fishery Product/<br>Marketing Planning | D & A Engineering Co., Ltd |
| 4 | Kaname MOTOKI | Fishing Port/<br>Facility Planning                             | D & A Engineering Co., Ltd |



## Itinerary of Explanation of Draft Report

Date			Governmental Officials		Consultant	
			Mr. Ohi (Team Leader)	Mr. Sasaki (Coordinator)	Hiraoka	Motoki
1	02/28	Fri.			Tokyo 12:00 → Paris 16:40 (JL405)	
2	29	Sat.	Tokyo 12:00 → Paris 16:40 (JL405)		Paris 11:00 → Dakar 19:40 (RK035)	
3	03/01	Sun.	Paris 15:45 → Dakar 22:05 (AF323)		Dakar 08:00 → Banjul 08:35 (GH561) Site survey	
4	02	Mon.	Courtesy Call to Japanese Embassy Meeting at JICA Office in Senegal		Meeting at Department of Fisheries Explanation of Draft Report	
5	03	Tue.	Dakar 08:00 → Banjul 08:35 (DS231) Explanation of Draft Report		Discussion of Itinerary Explanation of Draft Report	
6	04	Wed.	Discussion with Ministry of Natural Resources & Environment and Local Authorities concerned Explanation of Report. Minutes(draft)		-ditto-	
7	05	Thu.	Confirmation of Project Site Signing Minutes Courtesy Call to The Minister of Natural Resources & Environment		"	
8	06	Fri.	Discussion with Department of Land and Survey Survey : Brikama Ice Plant, EC Project site		Discussion with Department of Land and Survey Inspecting Processing Plant at Banjul	
9	07	Sat.	Survey: Bakau		Survey: Barra Fishing Village Italian Project at Barra Inspection at Sere Kunda Market Hearing survey from Bakau Fishermen	
			Team Leader Ohi	Mr. Sasaki		
			Banjul 17:45 → → Dakar 18:20 (GH560) Dakar 23:59 →	Survey: Ice Plant at Mansa Konko, Italian Project		
10	08	Sun.	Paris (AF316)	Banjul 17:20 → Dakar 18:00 (DS732)	Survey: Old Jeshwang Landing site Ice PLant in Brikama Hearing:Hotels at Bakau	
11	09	Mon.	Paris 15:00 →	Japanese Embassy	Received Land Certificate at Department of Land and Survey Discussion at Department of Fisheries, Collection of Materials Banjul 23:30 →	
12	10	Tue.	→ Tokyo 10:55 (AF-276)	Dakar 13:30 → → Paris 21:55 (RK-008)	→ Brussels(SN-509) Brussel → 06:10, 07:35 → London 07:45 (SN-601)	
13	11	Wed.		Paris 15:00 →	London 19:00 →	
14	12	thu.		→ Tokyo 10:55 (AF-276)	→ Tokyo 15:50 (JL-402)	

## 3. List of Persons Concerned

## Ministry of Natural Resources &amp; the Environment

Sarjo Touray : Minister of Natural Resources & The Environment  
 Bolong Sonko : Permanent Secretary  
 Sulayman Samba : Principal Secretary

## Fisheries Department

Ousman K.L. Drammeh : Director of Fisheries  
 Austin Jones : Assistant Director of Fisheries  
 Alhaji Jallow : Senior Fisheries Officer  
 Amadou Saine : Fisheries Officer  
 Madou Jama Suwareh : Fisheries Officer  
 Peter Ndow : Fisheries Officer  
 Ebou Mbye : Principal Fisheries Asst  
 Matarr Bah : Principal Fisheries Asst  
 Nobufumi Funabashi : JICA Expert

## Department of Lands and Survey in the Ministry of Local Government and Lands

Kebba Njie : Principal Lands and Valuation officer

## Japanese Embassy in Senegal

Morita Mizuho : First Secretary  
 Ohta Kouichi : Second Secretary  
 Masai Ippei : Second Secretary  
 Hirose Sinichi : Third Secretary



MINUTES OF DISCUSSION  
BASIC DESIGN STUDY ON  
THE PROJECT FOR IMPROVEMENT OF ARTISANAL COASTAL FISHERIES  
IN  
THE REPUBLIC OF THE GAMBIA  
(CONSULTATION ON DRAFT REPORT)

In December 1991, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team on the Project for Improvement of Artisanal Coastal Fisheries (hereinafter referred to as "the Project") to the Republic of The Gambia, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

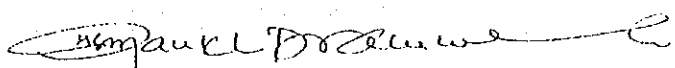
In order to explain and to consult the Gambian side on the components of the draft report, JICA sent to The Gambia a study team, which is headed by Mr. Mitsunori Ohi, Assistant Director, Office of Fishery Cooperation, Oceanic Fishery Department, Fisheries Agency, and is scheduled to stay in the country from March 3rd to 9th, 1992.

As a result of the discussions, both parties confirmed the main items described on the attached sheets.

Banjul, March 5th 1992.

Mr. Mitsunori Ohi,  
 Leader,  
 Draft Report Explanation  
 Team,  
 JICA.



Mr. Ousman K.L. Drammeh,  
 Director of Fisheries,  
 Ministry of Natural Resources  
 and The Environment,  
 The Gambia.

ATTACHMENT

1. Components of Draft Report

The Government of The Gambia has agreed in principle the components of the Draft Report produced by the team.

2. Japan's Grant Aid System

(1) The Government of The Gambia has understood the system of Japanese Grant Aid explained by the team.

(2) The Government of The Gambia will take necessary measures, described in ANNEX, for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.


3. Further Schedule

The team will make the Final Report in accordance with the confirmed item, and send it to the Government of The Gambia by the end of April, 1992.

4. The Government of The Gambia has reiterated its desire to have the landing jetty as a second phase project.

5. The Gambia Government should make arrangements to provide the initial running cost of the facilities (at least for 3 months).

6. It is the responsibility of The Gambia Government to inform fully the residents of the Project area and to seek their consent on the Project components.



*Mustafa D. ...*

THE REPUBLIC  OF THE GAMBIA

Ministry of Natural Resources  
and The Environment  
5 Marina Parade  
Banjul  
The Gambia

MNRE/310/Vol.IV/(32 - SSS)

5 March 1992

Mr M. Ohi  
Team Leader  
Draft Report Explanation Team (JICA)

ARTISANAL FISHERIES DEVELOPMENT PROJECT BAKAU

Attached is a letter received from the Department of Lands and Surveys, ref. SL/358/91/(9) of 4th March 1992, on the access road to the Bakau project site.

As the access road between the Roman Catholic Mission and the Maurel and Prom premises is now confirmed and made available for public use, you are now authorised to use this access for the implementation of the Bakau artisanal fisheries development project.

Assuring you of our continuous cooperation.

  
FOR: PERMANENT SECRETARY

THE REPUBLIC OF THE GAMBIA



Department of Lands & Surveys  
12 Marina Parade  
Banjul

Ref: SL/358/91/(9)

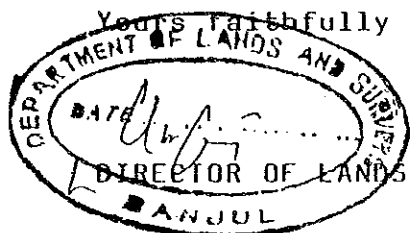
4 March 1992

The Director of Fisheries  
Fisheries Department  
6 Marina Parade  
BANJUL

ARTISANAL FISHERIES DEVELOPMENT PROJECT - BAKAU

Reference is made to your letter Ref: FD/167/77/Vol.VII/(41) dated 19th February 1992 pertaining to the above subject.

I confirm that the access road between the Roman Catholic Mission premises and the Maurel & Prom premises is available for public use. Please consult with the Department of Technical Service for advice if you decide to embark on any reclamation work.

Yours faithfully  
  
DIRECTOR OF LANDS & SURVEYS  
BANJUL

cc: PSMLG&L

": P S M N R S

": D P P & H



INFORMATION FOR JAPANESE MISSION

ATTN: MR. OHI  
TEAM LEADER

The EEC financed project constructed four community fisheries centres (Brufut, Tanji, Sanyang, and Kartong) and improved the facilities in two (Gunjur and Batokunku). These centres have numerous gear stores, drying racks, dried fish stores, workshops, market areas, office, and smoking houses.

The stores and smoking houses are rented out to the users. At Gunjur the market stalls are rented out. The revenue is collected by representatives of the Centre Management Committee (representatives of all operators at the centre headed by the village head, (Alkalo). The revenue is saved at the centre by the Committee; but recently two centres have opened up bank accounts at Serrekunda. The savings and withdrawals are done by three signatories selected from the Committee.

The Committee meets regularly to prepare budgets, project revenue, and discuss centre activities. They are responsible for the repair and maintenance of centre facilities and all expenses, at least for the time being, are paid from the revenue collected. Brufut constructed additional shops for reting from the saving in order to increase the revenue base. Sanyang has plans to construct gear stores to meet the increased demand. Gunjur has constructed several gear stores and a market with stalls for renting to users. So the idea of self-management is developing rapidly at these centres.

The project also delivered fish boxes and insulated containers to the centres for renting out to users at a fee determined by the Committee. The Department's role in the management is restricted to advisory and assistance with recording and minutes writing where necessary.

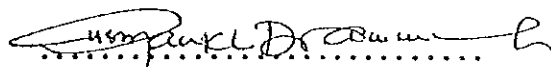
The Italian Government project constructed two centres at Tankular and Kemoto respectively. These centres have facilities like those in the coastal area and are run on the same Centre Management Committee system.

However, advise is being sought on ways of legally leasing these facilities to the community in order to further strengthen the commitment of the committees to the repair and maintenance of the facilities. As soon as the formalities are complete the committees will be required to sign the documents of lease.



In the fixing of rental charges and price of ice, attention will be given to the investment costs of the various facilities, albeit at the duty-free concessionary cost.

The revenue will be spread to indirectly include facilities that cannot be directly charged to the users. For example, the covered area for drying nets, office, main store, and radio communication.



MR. OUSMAN K.L. DRAMMEH

DIRECTOR OF FISHERIES

3-1-1968

## PROPOSED MANAGEMENT OF THE BAKAU CENTRE

The local Bakau Community will be responsible for the organization and management of the centre. So a Centre Management Committee will be nominated by the users of the centre, to be headed by the ALKALO of Bakau as Chairman/President. This Committee will decide on the centre's regulations, budget, and expenditure based on revenue collected from rented facilities. The Department's staff to be assigned to the centre will assist by advising the Committee on routine work matters. Funds required for the maintenance of the facilities will be provided from the centre's revenue funds.

Qualified technicians will be responsible for the operations of the ice plant and coldroom. But the revenue from the facilities will be the responsibility of the Centre Management Committee. Considering the high replacement cost of the parts on these two facilities it will be proposed that their cash input be put in a separate bank account, in order to block the use of the funds in subsidising other centre activities. It will also be recommended to the Committee to open two bank accounts at the local Bakau banks as soon as the facilities are commissioned. These accounts and the facilities will be closely monitored by the Department.

A sub-committee comprising of Department of Fisheries staff, refrigeration technicians, and Centre Management Committee representatives, who should have a commercial background, will be formed under the Centre Management Committee in order to directly manage and control the operations of the ice plant and coldroom. The sub-committee will also be responsible for the revenue collection and the separate bank account mentioned above.

The Department presently has two trained refrigeration technicians who are immediately available for deployment to the Bakau centre when ready. It is hoped that a refrigeration expert will be provided on technical assistance for at least six months to familiarise the Gambian technicians with the machinery and routine maintenance procedure. Meanwhile a Gambian refrigeration technician will be trained in Japan to take over from the expert when his term expires.

The training complex financed by the Government of Japan is directly under the Department. It is used for the training of mechanics and trainee fishermen involved in the Department's fishermen training programme. The tools and related equipment are used in the complex. The fishing materials are given out on loan to bonafide fishermen who are required to deposit 30% of the cost of the materials applied for. These deposits and the repayments are received by the Credit Officer in the Credit Unit of the Department. He deposits all payments into the Japan Grant Aid Account at the Accountant General's Department (Government Treasury) where a receipt is issued. Plans are being worked out to use the funds to either give cash loans for the purchase of fishing equipment or purchase materials and give loans in kind, which might be cheaper for the fishermen. But this will depend on approval from the Japanese authorities.

The operating cost of the fishermen training programme initiated by Japanese technical assistance is provided by the sale of catch. Strict budgetary control is maintained in this programme to reduce subsidy on the programme from other sources. This, we hope, will train the fishermen on the economics of fishing units.

### III. List of Collected Materials

1. Central Bank of The Gambia Annual Report 1989-1990  
Central Bank of The Gambia
2. National Accounts of The Gambia (1982/83-1989/90)  
Central Statistics Department, Ministry of Finance & Economic Affairs
3. The Gambia Round Table Conference  
Executive Summary Program for Sustained Development Sectorial Strategies I  
Government of The Gambia
4. The Gambia Round Table Conference  
Executive Summary Program for Sustained Development Sectorial Strategies II  
Government of The Gambia
5. National Fisheries Management and Implementation Plan (Draft)  
Ministry of Water Resources, Fisheries and Forestry 1989, Feb.
6. Fisheries Acts 1991, June
7. Labor Act 1990
8. Artisanal Fisheries Development Project  
3/8/87 Min. Water Resources Forestry and Fisheries Department
9. Estimates of Recurrent Revenue and Expenditure 1991/92  
With Estimates of Development Expenditure 1991/92
10. Population and Housing Census 1983 Economic Characteristic Volume 3  
Published by The Central Statistics Department,  
Ministry of Economic Planning and Industrial Development May 1990.
11. Population and Housing Census 1983 Volume 4 Statistics on Settlement  
Published by The Central Statistics Department,  
Ministry of Economic Planning and Industrial Development May 1990.
12. Artisanal Fisheries Frame Survey Results 1990. Statistics Unit.



PHOTOGRAPHS





① Project Site  
(Bakau)



② Project Site  
(Bakau)



③ Entrance from  
the Atlantic Road.







④ Present access way from Atlantic Road to Site.



⑤ Present entrance from the access way of ④. Right of the access way is a parking lot.



⑥ Present smoking facility in Bakau





⑦ Hand-liners,  
expecting favorable  
waves for sailing out



⑧ Bakau  
Municipal market

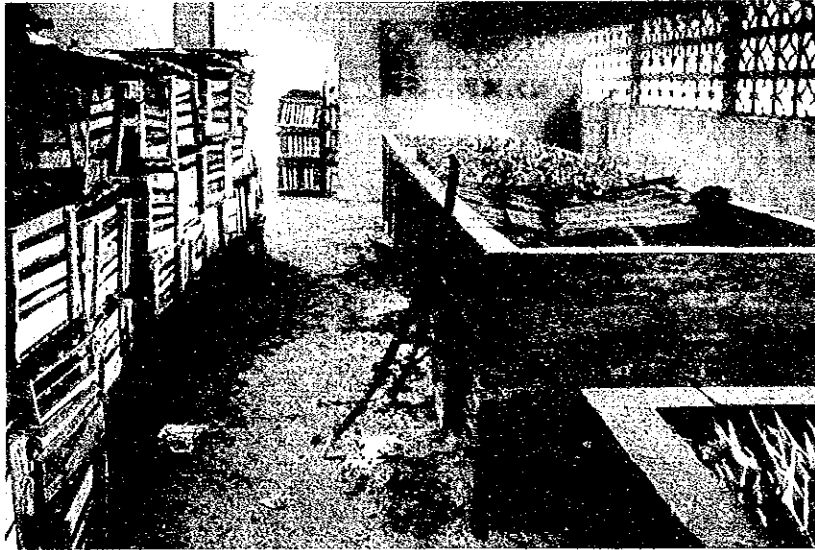


⑨ Fish drying rack





⑩ Bottom fishes  
in market



⑪ Smoking hut, and  
packed products  
in the boxes



⑫ Fisheries Training  
Center in Fisheries  
Department

JICA