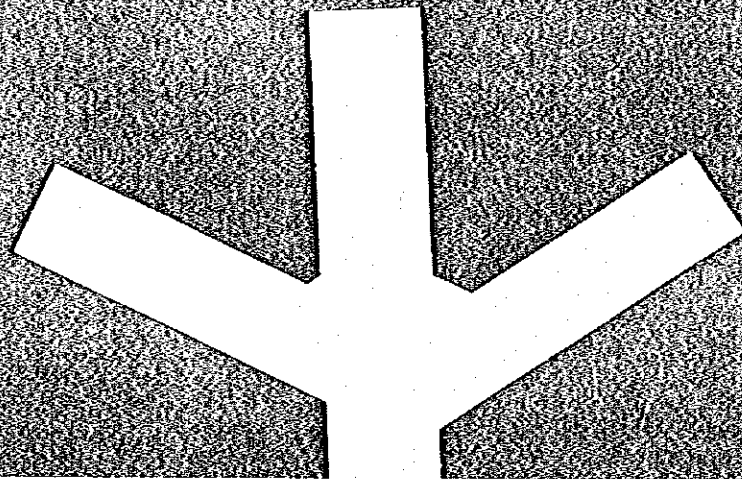


THE FEDERAL REPUBLIC OF NIGERIA
FINAL REPORT
ON
ALTERNATIVE SITES
FOR
THE NEW OCEAN TERMINAL
IN
THE EASTERN COAST



JANUARY, 1982

JAPAN INTERNATIONAL COOPERATION AGENCY

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THE FEDERAL REPUBLIC OF NIGERIA

FINAL REPORT
ON

ALTERNATIVE SITES
FOR

THE NEW OCEAN TERMINAL
IN

THE EASTERN COAST

國際協力事業團	
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PREFACE

In response to the request of the Government of the Federal Republic of Nigeria, the Government of Japan decided to conduct a study on alternative sites for the New Ocean Terminal in the eastern coast of Nigeria, and entrusted the study to the Japan International Cooperation Agency (JICA).

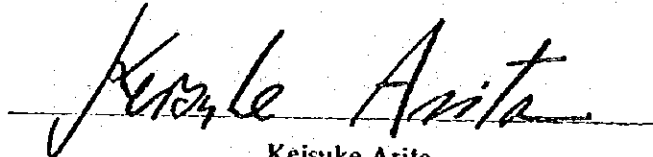
The JICA sent to Nigeria a survey team headed by Mr. Masao Ohno, Executive Director of the Overseas Coastal Area Development Institute of Japan during June and July 1981.

The team exchanged views with the officials concerned of the Government of Nigeria, collected reference materials, and conducted a field survey. After returning 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 Nigeria for their close cooperation extended to the Team.

January, 1982



Keisuke Arita
President
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

January, 1982

Mr. Keisuke Arita
President
Japan International Cooperation Agency

Dear Mr. Arita:

It is a great pleasure for me to submit herewith a Report on Alternative Sites for the New Ocean Terminal in the Eastern Coast, the Federal Republic of Nigeria.

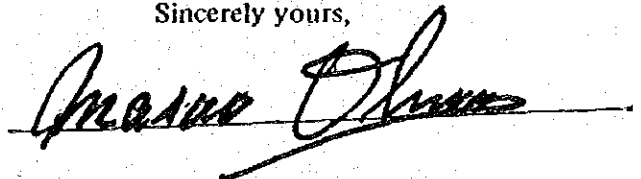
The Japanese study team, headed by myself, was commissioned by the Japan International Cooperation Agency to conduct a field survey on the Project in Nigeria from June 9 to July 13, 1981. Prior to this survey, geographical and oceanographical surveys and a geological investigation were carried out by, respectively, the Kokusai Aerial Survey Company Ltd. and the Pacific Consultants International, from February 25 to June 5, 1981. The findings of the studies conducted are compiled in this report, which includes:

- i) the analyzed results of the data collected during the field survey;
- ii) an evaluation of the suitability of the eastern coast as a location for the New Ocean Terminal;
- iii) a proposition for possible port planning aimed at future regional development of the eastern coast.

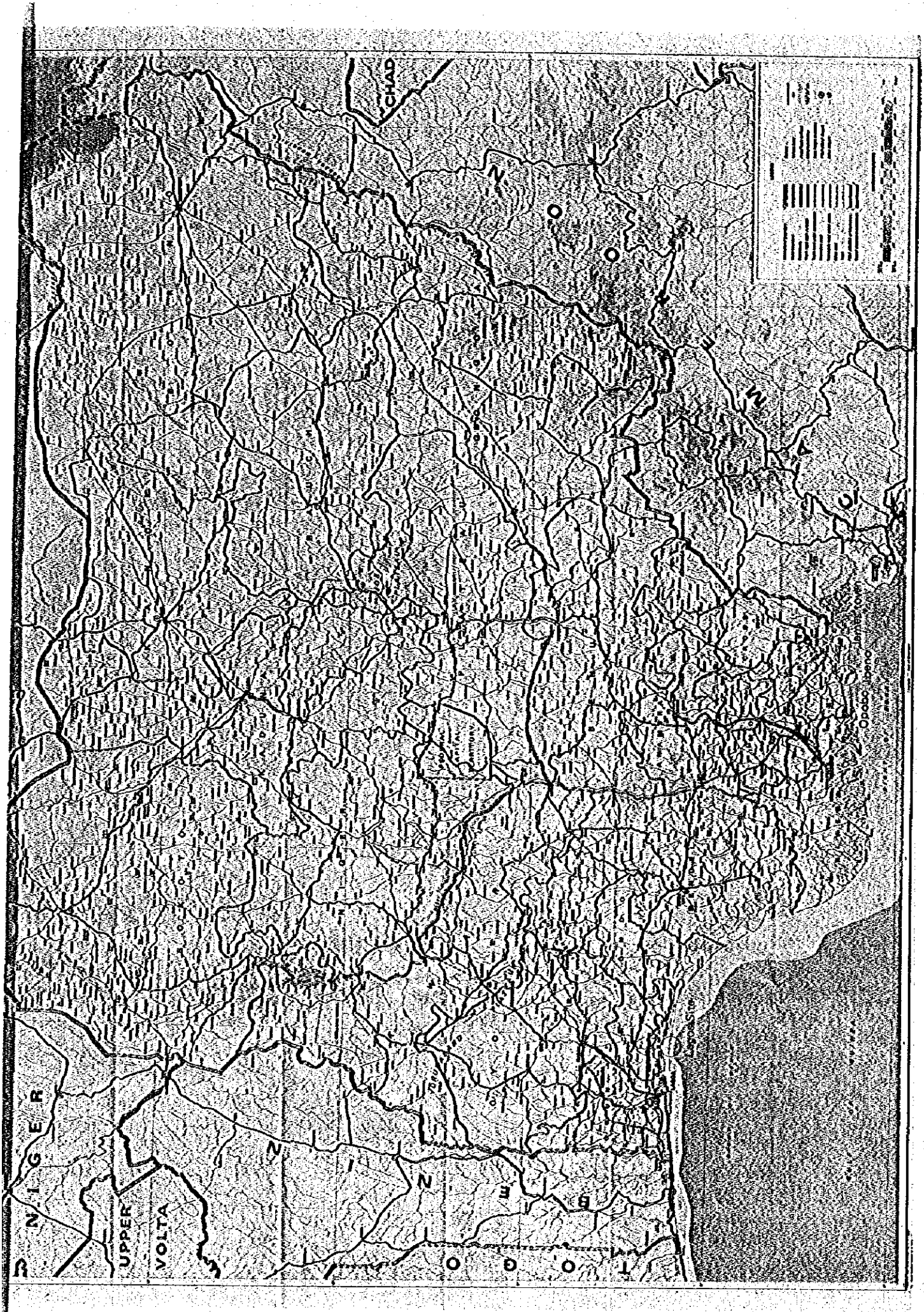
On behalf of the Japanese Study Team, I would like to express my deep appreciation to the Government of the Federal Republic of Nigeria and the Nigerian Ports Authority for their unlimited cooperation and assistance rendered to us. The team was able to obtain a great deal of valuable information as well, through meetings with various agencies and private companies in Nigeria.

I am also indebted to the Japan International Cooperation Agency, the Ministry of Transport and the Ministry of Foreign Affairs of the Government of Japan, and the Embassy of Japan in Lagos, for their valuable support and assistance throughout our study term.

Sincerely yours,



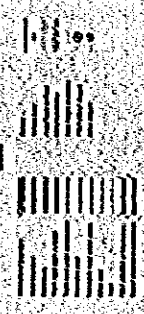
Masao Ohno, Leader,
Japanese Study Team
of Alternative Sites
for the New Ocean
Terminal in the
Eastern Coast
(Executive Director,
the Overseas Coastal
Area Development
Institute of Japan)



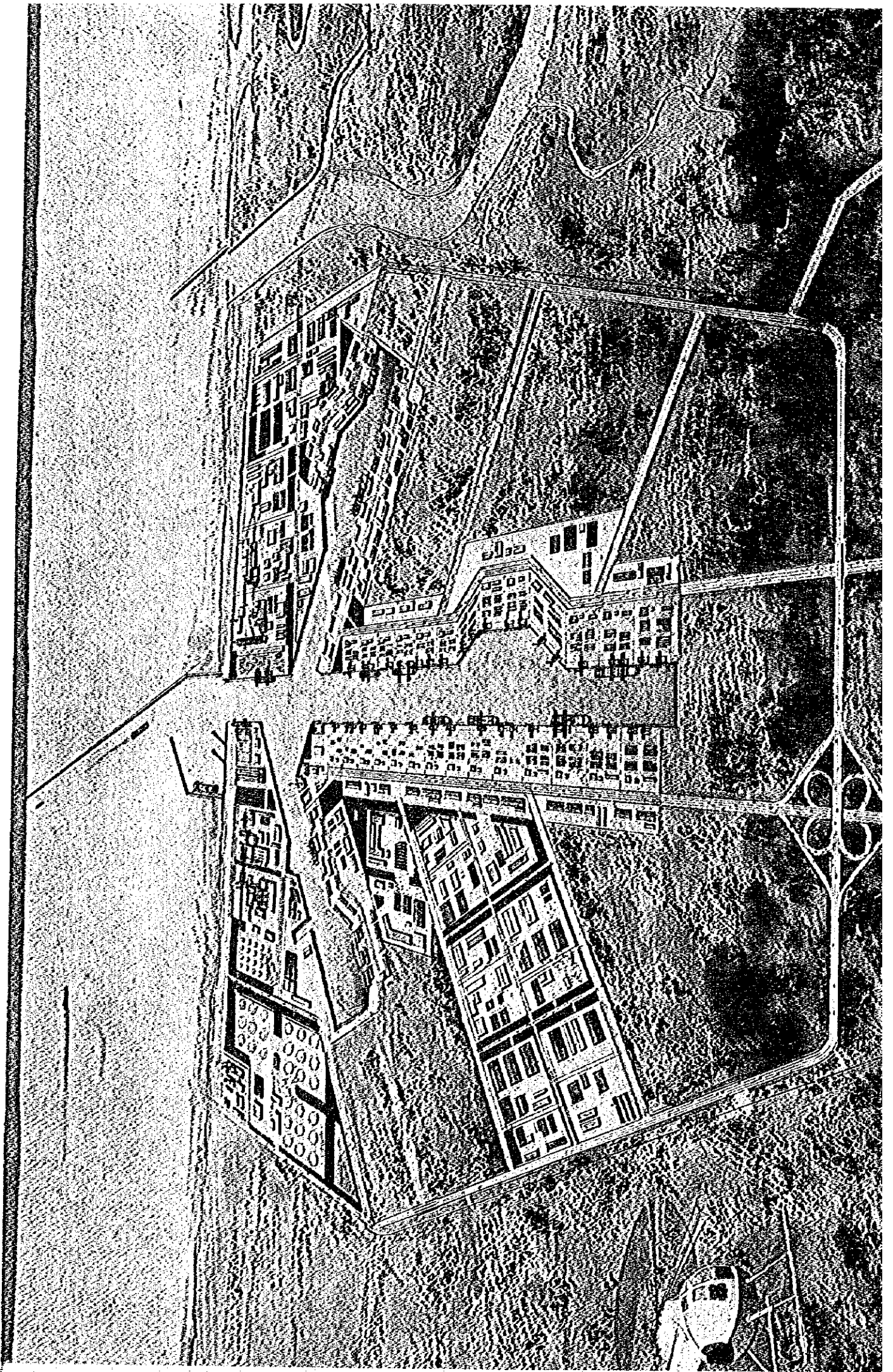
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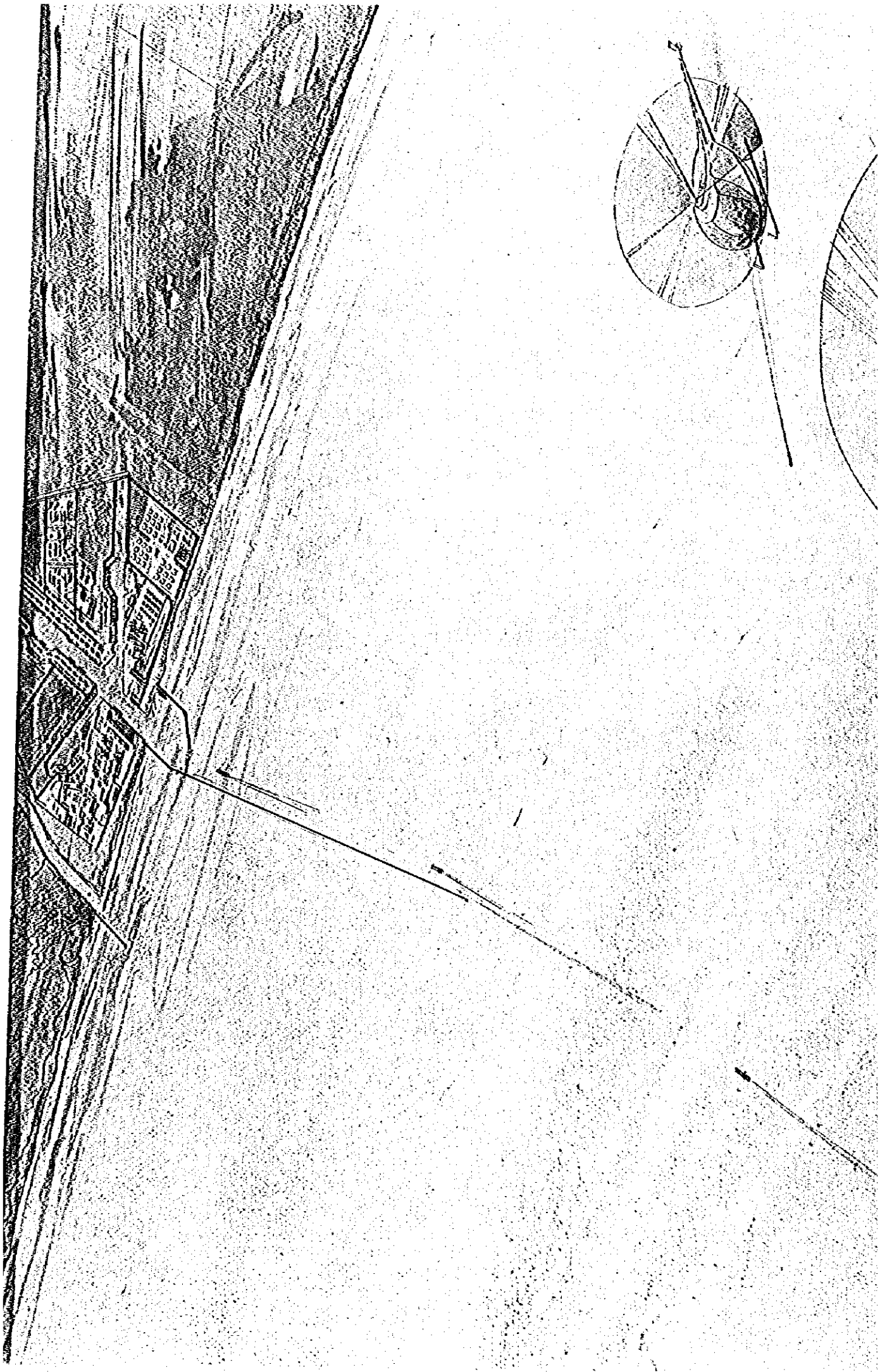
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CONCLUDING REMARKS

CONCLUDING REMARKS

The construction plan of the New Ocean Terminal on the east coast of Nigeria has been examined from the following points of view:

- 1 Natural conditions at the east site
- 2 Total construction cost
- 3 Engineering effects
- 4 Socio-economic consequences

(1) Natural Conditions at the East Site

There are no climatic complications surrounding the construction of NOT.

While swell with a wave period of 12 sec. washes the Nigerian coast, it is possible to maintain the necessary calm inside the harbor after the construction of breakwaters.

As the Ibeno site is relatively flat and the area of mangrove swamp forest is limited, geological conditions are favorable for large-scale construction.

Table 1. Point by Point Comparison of Natural Conditions at NOT Sites

	East	Lagos
Climatic conditions	almost same	
Sea conditions	Wave height in the east is smaller.	
Geological conditions on land	almost same	
Marine topographical conditions (Length between the shoreline and -19 m point)	approx. 21.0 km	approx. 4.8 km
Soil conditions	soft silt layers	sand layers (good bearing capacity)

As to the marine topographical conditions, the sea bottom slope off the east coast is very gentle (1:1,400), necessitating plenty of dredging for the provision of a long entrance channel and construction of long breakwaters preventing siltation of entrance channel for the New Ocean Terminal to be serviced by large ships.

The silt and the low bearing capacity of the east site render soil conditions inferior to those of the Lagos site with its strong sandy ground.

(2) Total Construction Cost of NOT

Table 2 shows the total construction costs for NOT-east. Total construction costs for NOT-Lagos, estimated using the present (1981) unit prices at Lagos are also shown in comparison.

In the case of NOT-east, maintenance dredging of approximately five million cubic meters per year will be inevitable, because the water depth at the tip of the main breakwater is only -13.0 m. Although a port, once completed, remains serviceable almost indefinitely, a 20-year period

was chosen to indicate the cost of maintenance dredging. The cost here is discounted at the yearly rate of 5%, totalled, and added as an initial cost.

The total construction cost of port facilities for NOT-east is N2,210 million, approximately N533 million (32%) more than the total construction cost of the port facilities at the Lagos site.

(3) Engineering Effects

One of the most important engineering effects is the siltation of the entrance channel due to the deposition of sediments.

The total length of the entrance channel of NOT-east is 22 km, but only 12 km of it (55%) is sheltered by the breakwater. 10 km of the channel will experience siltation. The siltation volume will be approximately 5 million cubic meters per year, although dredging is possible.

Beach erosion caused by the construction of the breakwaters and the training jetty will be relatively mild. The expected shoreline retreat at the most seriously eroded place will be approximately 150 meters during 50 years, assuming no shore protection facility is provided.

(4) Socio-economic Consequences

1) Comparison of transportation cost

In the case of the east site, the annual total transportation cost is estimated to be about N1,274 million. This cost is about N187 million (17.2%) more than in the case of the Lagos site.

Table 2. Total Construction Cost of NOT

(Unit: Million N)

Projects	East (A)	Lagos (B)	A/B	A-B
Commercial Port	1,835.2	1,496.5		
Industrial Port	243.0	180.8		
Maintenance Dredging (for 20 years)	132.0	0.0		
Subtotal	2,210.2	1,677.3	1.32	533
New City	680.0	695.0		
Arterial Transportation Facility	394.0	417.0		
Subtotal	1,074.0	1,112.0	0.97	△ 38.0
Total	3,284.2	2,789.3	1.18	495

Note: 1. "Arterial Transportation Facility" excludes urban roads. The cost of the urban roads is included in "New City".

2. "Maintenance Dredging", the cumulative cost for 20 years is tentatively added up.

The fundamental cause of this difference is, as mentioned earlier, the fact that the economic activities of Nigeria are concentrated mostly in the western states, particularly the southern part of these states to which Lagos and Ibadan are central, and consequently the traffic volume of long-distance transportation for the east site is larger. The increase of transportation cost for the east site averages N7.1 per cargo ton. It will probably be covered by rises in commodity prices or decreases in value added, but nonetheless spells a loss to the national economy.

2) Development benefits

Construction of NOT in the east site will bring about a great deal of development benefits which could become the corner stone of socio-economic development in the eastern states and a major contribution to the balanced development of the Federation. However, at present the east site lacks certain socio-economic conditions required for a large port such as NOT.

a. Industrial port

Industries located at NOT-east will face two major problems. The first is that the assumed industrial production scale may not attain an economically rational scale, because of the increase in transportation costs incurred by the consequent call for a larger traffic volume of long-distance transportation.

The second is that the east site lacks the concentration of related industries which certain of the industries to be located there will require for regular production.

b. Commercial port

The east site commercial port may also suffer due to the lack of socio-economic development in the surrounding areas.

The Lagos site is situated near a large accumulation of urban function and the concentration of the port-related industries of the existing Lagos Port. Therefore, it may be expected that the effects of developing at that site will be supplemented by the interaction between NOT-Lagos and the existing Lagos Port, that is, the formation of a ports complex. It may also be expected that the socio-economic development of the Lagos metropolitan area will expand and that port functions will be greatly improved. Further, the considerable availability of related infrastructure can be used economically in the construction of NOT-Lagos.

In this context, it can be said that constructing NOT at the Lagos site is more effective than at the east site for the entire Federation, considering the present stage of Nigeria's development.

On the other hand, there is the possibility of linking NOT-east to form a ports complex with the existing ports of Port Harcourt and Calabar, although it would be difficult to utilize the functions of those existing ports and their port-related industries, as they are somewhat remote in distance. These problems must be solved for the smooth development and operation of NOT-east. It would be necessary as well to locate required functions and facilities such as public services and port-related industries, and to improve infrastructures such as roads, railways, the communication network, and so on. NOT-east will also have some difficulty in employing sufficient laborers of good qualifications.

In this respect, the inevitability of the additional investment for the improvement of required socio-economic conditions necessitated by the construction of NOT at the east site must be weighed very carefully from the viewpoint of the optimum allocation of capital and resources in the national economy. Especially those nations facing, as Nigeria is, the birth of industrial development must be prudent and vigilant in the effective, economical distribution of precious resources.

