Basic Design Study Report on Rural Fisheries Development Project in Solomon Islands

January 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

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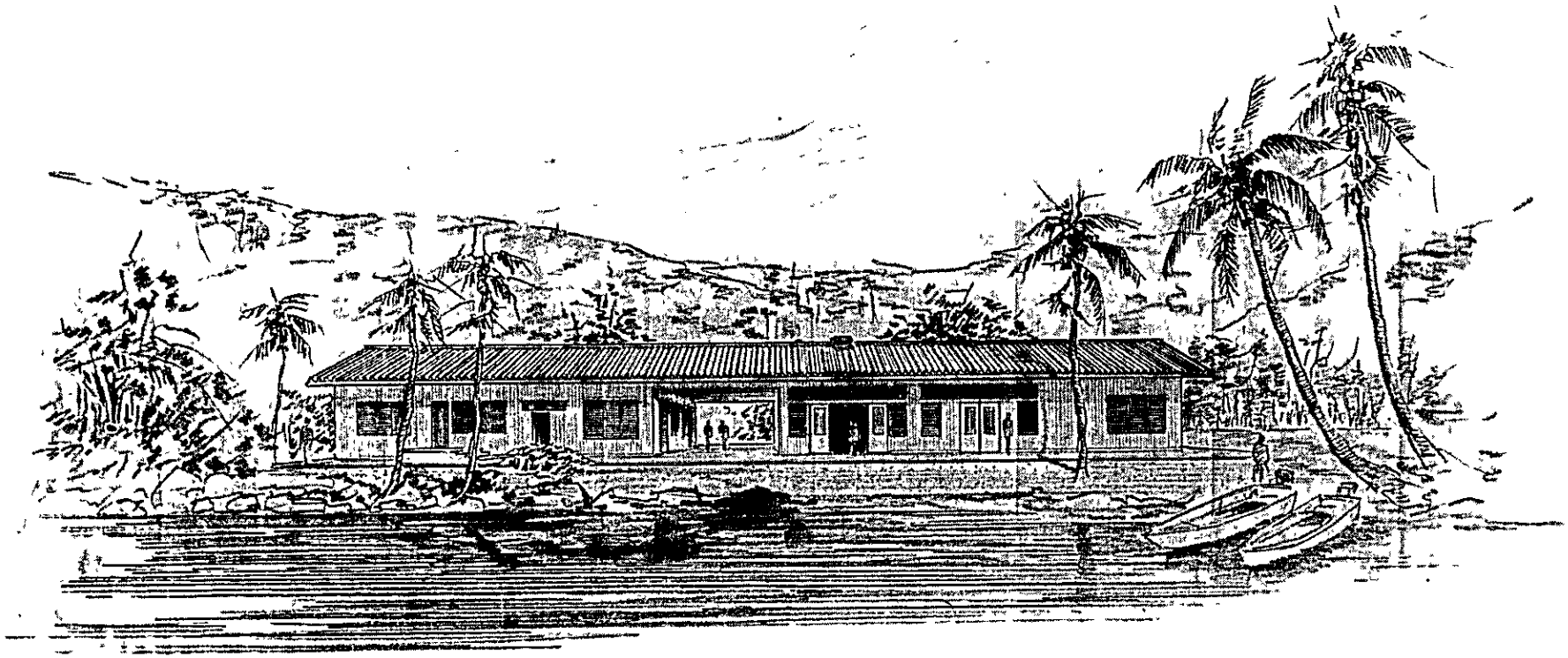

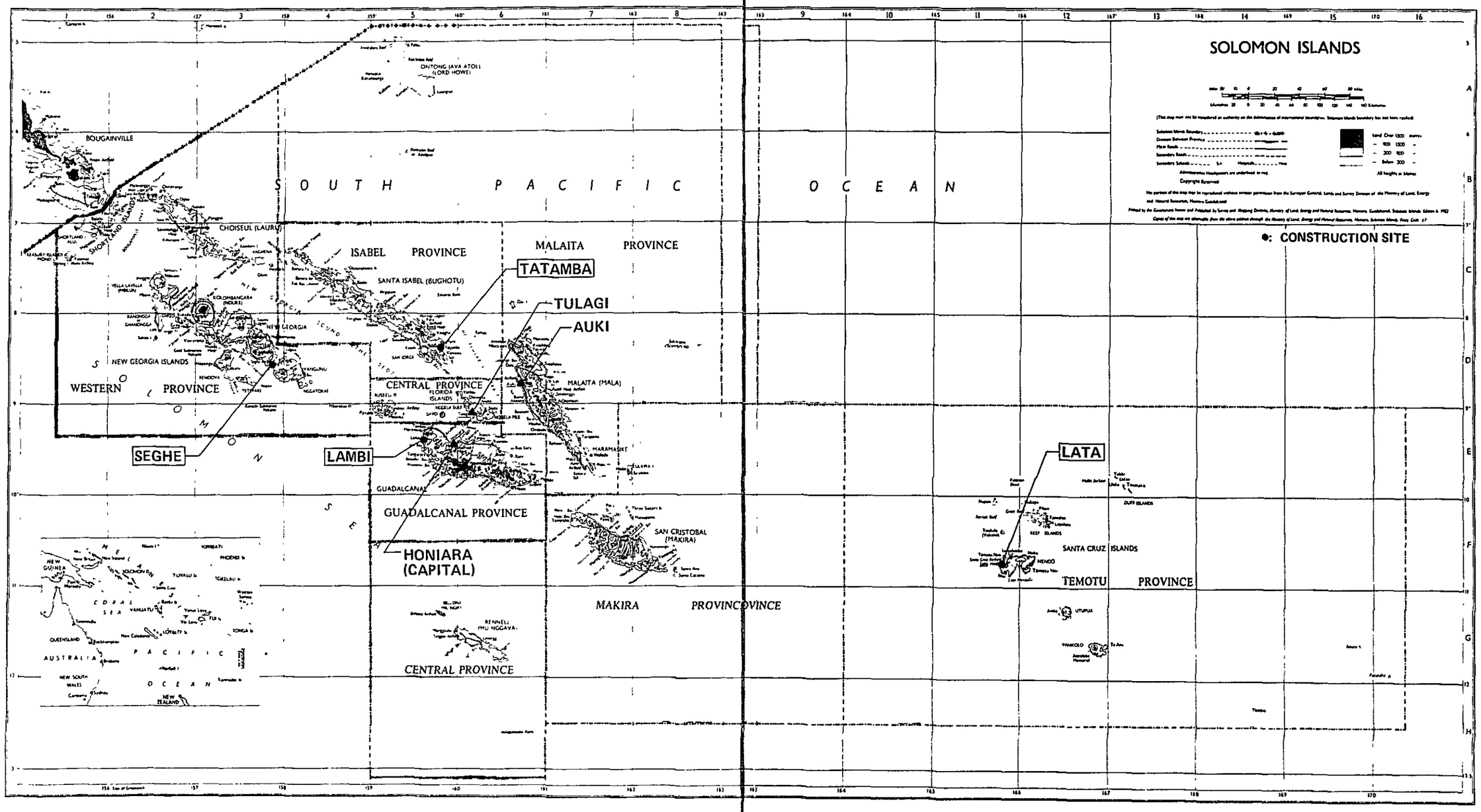
SOLOMON ISLANDS
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S O U T H P A C I F I C O C E A N
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CHOISEUL (LAURU)
ISABEL PROVINCE
MALAITA PROVINCE
TATAMBA
TULAGI
AUKI
SANTA ISABEL (BUGHOTU)
NEW GEORGIA ISLANDS
WESTERN PROVINCE
CENTRAL PROVINCE
FLORIDA ISLANDS
MALAITA (MALA)
SEGHE
LAMBI
GUADALCANAL
GUADALCANAL PROVINCE
HONIARA (CAPITAL)
SAN CRISTOBAL (MAKIRA)
MAKIRA PROVINCE
RENNELL (MU NGGAVA)
CENTRAL PROVINCE
LATA
SANTA CRUZ ISLANDS
TEMOTU PROVINCE
NEW GUINEA
CORAL SEA
AUSTRALIA
QUEENSLAND
NEW SOUTH WALES
NEW ZEALAND
P A C I F I C O C E A N

PREFACE

In response to the request of the Government of Solomon Islands, the Government of Japan decided to conduct a basic design survey on the Rural Fisheries Development Project and entrusted the survey to the Japan International Cooperation Agency. The JICA sent to Solomon Islands a survey team headed by Mr. Tatsuhiko IWASAWA, Deputy Director, International Division, Oceanic Fisheries Department, Fisheries Agency, from October 31st to November 25th, 1982.

The team had discussions with the officials concerned of the Government of Solomon Islands and conducted a field survey in Honiara, Lata, Lambi, Tatamba and Seghe areas.

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 Solomon Islands for their close cooperation extended to the team.

January 1983

Keisuke Arita

Keisuke Arita
President
Japan International Cooperation Agency

SUMMARY

The people's livelihood of the Solomon Islands depends on primary industries such as agriculture (mainly copra production), fishery and forestry. Considering the geographical conditions of the country surrounded by the sea and very limited land suitable for agriculture, fishery will become more and more important to this country. Except for the commercial skipjack pole-and-line fishing introduced in 1973, however, fishery remains at the level of small coastal fisheries conducted for self-sufficiency.

To promote coastal fishing, the Government of Solomon Islands is planning and pushing forward the Rural Fisheries Development Project, which contains the plan to install Fisheries Centres for training fishermen and for developing fish market. Concerning the Fisheries Centre, which is one of the most important of the project, a similar Centre was already constructed in Auki in Malaita Province by a grant aid from Japan in 1979, and is now offering required functions satisfactorily. Based on this experience, the Government of Solomon Islands requested Japan to extend the grant aid to construct four Fisheries Centres, to provide fish carrying vehicles and ice boxes and other equipments. The Government of Japan, in compliance with this request, sent a survey team to the Solomon Islands through the Japan International Cooperation Agency.

The objectives of the Fisheries Centres are fish marketing as well as training of rural fishermen. Each Fisheries Centre consists of a fish sales store, classroom, office, training place and others, with about $300m^2$ floor space for each centre. The proposed construction sites are four, namely, Lata (Temotu Province), Lambi (Guadalcanal Province), Tatamba (Ysabel Province) and Seghe (Western Province), all of which have been judged to be appropriate for Fisheries Centres.

Approximately nine months will be required for carrying out the project.

Management of the Fisheries Centre is undertaken by the Provincial Fisheries Development Division, Ministry of Home Affairs and National Development, with each centre expected to be staffed by three to five fishery experts mainly from the abovementioned Division. The cost of maintenance and management of the four centres is estimated to be about SI$51,000 which will be covered by the sales profit from marketing the fish. The survey team made a trial calculation, which convinces us that expenses and income will be well balanced.

Construction of the four Fisheries Centres is expected to activate rural coastal fisheries, increase employment of rural inhabitants, increase their cash income, further upgrade various technologies, and supply protein food of good quality at reasonable price. Accordingly, it is believed very significant that the Government of Japan renders cooperation in the construction of the Fisheries Centre.

It is hoped that further cooperation of the Central and Provincial Governments facilitate the operation of the Fisheries Centre, by arranging proper staff and operation funds.

CONTENTS

DATA SECTION

1. INTRODUCTION

Solomon Islands relies mainly on the primary industries such as agriculture (copra and palm oil production) and forestry. Due to the limited amount of arable lands and reduced copra price, the Government has placed new emphasis on the fishing industries.

From early 1970s, the Government has cooperated with foreign enterprises to develop commercial fisheries as a viable enterprise, centering on the skipjack pole and line fishing. This commercial fisheries have grown to occupy 38 percent of the total amount of exports of Solomon Islands in 1980.

Local inhabitants accounting for 90 percent of the country's total population engage in agricultural and fishing businesses and they enjoy self-sufficient lives. When we looked at this country in socio-economic terms, it was evident that there was an urgent need to promote the economy of local areas by introducing currency-economy.

Under such circumstances, Fisheries Division of the Government of Solomon Islands shifted its emphasis to promotion of coastal fisheries in local areas since 1975. In an effort to develop such local areas, the Government implemented a plan to train fishing people and to improve the distribution network through establishing sales stores.

In consonance with this policy, the Government of Japan supplied cold storage carriers and constructed the Auki Fisheries Centre in 1979, and this aid was extended in 1982 to grant Fisheries Centres, ice boxes and a fish carrying vessel, etc.

In order to ensure the promotion of coastal fisheries in local areas, to create stable employment for local inhabitants, to increase their cash income, to improve various techniques and to provide low-price high-quality protein food, Rural Fisheries Development Project was newly drawn up and implemented in 1981.

The content of the project is to provide Fisheries Centres, ice boxes and fish carrying vehicles, etc.

The effect of this project is becoming clear in fishing villages, and the Government is expecting a better effect from fiscal 1983, with a new organization in the Central Government.

To promote local coastal fisheries, the Government of Solomon Islands repeatedly requested Japan to construct Fisheries Centres which are the most important in this project and to supply ice boxes and fish carrying vehicles. In response to the requests, the Government of Japan dispatched a survey team, headed by Tatsuhiko IWASAWA, Deputy Director, International Division, Oceanic Fisheries Department, Fisheries Agency, through the Japan International Cooperation Agency for 26 days from October 31, to November 25, 1982 in order to conduct a basic design study of the project. (For the Survey Schedule, see Data Section 3.)

Through discussion with personnel of the Government of Solomon Islands, the survey team surveyed areas related to the project. Based on the survey results, Minutes of Discussion were prepared on the agreed items, and signed by the survey team and personnel of the Government of Solomon Islands. (For copy of the Minutes, see Data Section 4.)

This Report summarizes the background of the project, conditions relating to the construction sites, basic design, implementation plan and evaluation of the project.

2. BACKGROUND OF THE PROJECT

2.1 General Conditions

Solomon Islands consists of seven provinces with each provincial population ranging from about 10,000 to 60,000. The most densely populated provinces are Malaita, Western and Gualalcanal, with these provinces occupying two-thirds of the total population (225,000 in 1980). The capital city, Honiara, located in the northen coast of Guadalcanal, has about 18,000 population and other province capital have a population of less than 2,000. The remaining four provinces have approximately 10,000 to 15,000 population each. The major part of the population is sparsely scattered in the villages dotted along the coast of the islands, and 90% of the entire population lives in villages having a population of less than about 200. The biggest problem of the rural farm and fishery villages is the extremely limited opportunities for cash income and they still constitute non-currency economic sector. The income of this sector is less than half of the total national income with big gap between this sector and the urban area.

The economy of Solomon Islands depends largely on its public sector, and one third of wage laborers and two thirds of the total income of Solomon Islands belong to the public sector. Ninety percent of govenmental expenditures, however, is for administrative service and infrastructre, and less expenditure in relation to direct production is now creating dispute. Even in the public sector, about half of its expenditure depends on foreign assistance, most of which comes from England, their suzerain country in the form of financial assistance. The assistance at present accorded from England tends to decrease in the near future and Solomon Islands will have to diversify its supply sources of assistance as well as achieve sound financing.

The currency-economy sector is composed of export of primary products such as copra, fish, timber, palm oil and others, with income from export paying off the import of consumable goods including machinery, industrial products, foodstuff, fuels and so on. Therefore, it is easily affected by fluctuation in the world economy such as the oil crisis, particularly by the trend of international prices of primary products and is also sensitive to the

inflation of developed industrial countries.

The basic economic policy of the Government of Solomon Islands gives priority to upgrading added value of export goods and introducing import-replacing industries.

The key to the success of economic development is how to incorporate the rural farm and fishery villages into the currency-economic sector since income of that area, which is a non-currency sector, is less than half against total national income although the area occupies 90% against total national population. Solomon Islands is favored by relatively rich natural resources compared to the area and population of the country. It is important to develop the economy and upgrade the people's well being by promoting the development of various sectors, including fisheries, agriculture, forestry and mining so that as many people as possible can participate in it and work together.

2.2 Fishery Conditions

2.2.1 Summary of fisheries

Fisheries conducted in Solomon Islands can be classified into two categories. One is commercial fisheries, mainly skipjack pole-and-line fishing conducted on a large scale by a joint corporation of a Japanese company and the Government, and a national fisheries company, the second is coastal fishries, mainly of reef fish conducted by rural fisheremen along the island coast.

Table 2.1 Annual summary of total catch by pole and line

Year	No. of Vessels	Total Catch (M/T)
1971	4	4,711.4
1972	14	7,885.0
1973	8	6,512.1
1974	9	10,331.4
1975	11	7,146.2
1976	14	15,799.7
1977	20	12,128.5
* 1978	20	17,352.9
* 1979	23	23,766.8
* 1980	21	21,942.2
* 1981	23	22,624.7

* Including NFD pole and line vessels
Source: Solomon Islands Report for the Year (1981)

(1) Commercial fisheries

Commecial fisheries of skipjack fishing were started about 10 years ago, when a Japanese fishery company, acquired a prospect for fisheries commercialization based on their research effected in 1971 on the request from the Government of Solomon Islands for the research of skipjack stock. It has been developing satisfactorily and has grown up to the largest industry in Solomon Islands with yearly an output of 22,800 M/T and export amount of SI$23,200,000 in 1980, which occupies a 38% share in the total export amount of SI$60,800,000.
It employs approximatey 1,470 persons in total.

1) National Fisheries Development Ltd. (NFD)

The NFD, a national company in compliance with the nationalization policy of foreign companies by the Government of Solomon Islands, was established in 1978 with capitalization of SI$1.5 million under the participation of 75% by the Government of Solomon Islands and 25% by Solomon Taiyo (STL) with the objectives of developing fisheries and

building fishing boats. The head office is located in Honiara with the operation centre in Tulagi.

① Fisheries department

The boats at present operated by the company are three skipjack pole-and-line fishing ferrocement vessels and four fishing training vessels (two skipjack pole-and-line fishing vessels and two tuna long-line fishing vessels), originally provided by the Government of Japan and leased from the Government of Solomon Islands. Crew assignment and operation system are similar to the STL. Landing and marketing of fishing catches are undertaken by the STL because the NFD has no onshore base facilities.

② Fishing boat building department

The main business is to build 10 new aforementioned ferrocement vessels and 20 bait vessels (FRP, 8 m, 10 ps). And to also undertake repairs of middle and small size vessels.

The dockyard is the only one and the largest facility in that country. A slipway to accommodate ships upto 35 m in length is at present under construction. Large capacity winches from Japan were observed in the dockyard. Building the ferrocement vessels is financed by ADB (Asia Development Bank) with technical assistance from New Zealand. The first vessel was launched in March, 1980, three similar type vessels are in fishing operation, two vesseles are being equipped (one has finished its trail operation), two are under construction and three more are scheduled for completion by 1985. Building cost per vessel is approximately SI$340,000. The target building period is nine months, but it will actually require about one year owing to conditions regarding manpower and component parts. The vessel now under construction has been improved by extending its length about one meter and making the sheering similar to that of a Japanese vessel. These unique ferrocement vessels are being operated with no problems, and their advantages are that the building can be done manually, requiring less building cost and fewer engineers. Problems such a water-tight repair around deck

and hatch side, repair of outside plating and durable operating years are, however, yet to be solved.

An English senior engineer is responsible to the department of fishing boat building with a total manning table of 180, including four New Zealand engineers. The fisheries department is composed of a Japanese fleet manager and 58 Japanese crew members, with the remaining staff all from Solomon Islands. The employees of NFD total 383. The NFD business operation is very similar to the following STL with respect to its fisheries department. The boat building department is still not under way, and is urged to improve its operation.

2) Solomon Taiyo Ltd. (STL)

It was established in February, 1973 with the capital of Australia $500,000. The share participation was 75% for Taiyo Fishery Co., Ltd., and 25% for the Government of Solomon Islands, which came to 51% and 49% respectvely in May, 1975 with the capital increased to SI$2 million. In December, 1981, share participation was changed to equal shares for each party by mutual agreement.

Shipjack fishing boats owned by the company comprises one 84-tonnage ice type vessel, two 94-tonnage chillers (with brine chilling equipment) and three 103-tonnage freezers (with freezing equipment), with a total of six boats. In addition, the company charters fourteen boats from Okinawa. Each boat is manned by a crew of ten Japanese and twenty to twenty-six people of Solomon Islands (including bait boats).

Two bases, one at tulagi in the east and another at Noro in the west, are equipped with cold storages (800 M/T each), ice making machines (daily output 65 M/T and 40 M/T), canning factory (Tulagi only, daily capacity 600 cases) and Arabushi factories (1 M/T daily capacity each). The total number of workers in Honiara head office and a crew is 1,087.

Fishing operations are conducted within the inland sea of Solomon Islands at Tulagi by 8 boats and at Noro by 12 boats. Numbers of day per voyage are at maximum, three days for ice type vessel, five days for chiller and seven days for freezer, all different due to equipment capacity. Yearly operation period in nearly 10 months excluding off season in February and March every year, (Chartered boats from Okinawa return home).

Operation periods change due to yearly changing conditions; for instance, in 1981, the operation was terminated in mid-December because of bad seas and fishing conditions and in 1982 it started from the middle of April. Accordingly, the output fluctuates in the range of 20,000 to 25,000 M/T per year.

Since 1979, about 90,000 cases yearly of canned products (for Europe), about 20,000 M/T of frozen fish (for U.S.A.) and about 170 M/T of Arabushi (for Japan) have been sold; however, the business operation of the company is becoming severe becaue of the sluggish skipjack market in the U.S.A. and other countries, soaring fuel costs as well as unstable fishing catch.

On the other hand, purse seine fishing which has been trail conducted since 1980, resulted in a poor catch the first year due to an unfamiliar fishing ground; however, in the second year, it showed a better catch. The fleet component and fish catch in detail are as follows:

Table 2.2 Fleet component and crew

		Purse seiner (111 G/T)	Tug boat (38 G/T)	Carrier (280 G/T x 2)
Crew	Japanese	10	2	6 x 2 boats: 12
	Solmon Islanders	13	6	12 x 2 boats: 24
	Total	23	8	36

Table 2.3 Itemized catches

Period	Total catch	Skipjack	Yellowfin	Miscellaneous
July '80 - June '81	2,442 M/T (100%)	2,070 (85%)	292 (12%)	80 (3%)
Oct '81 - July '82	4,484 M/T (100%)	2,158 (48%)	2,070 (46%)	256 (6%)

(2) Coastal fisheries

Traditional costal fisheries in Solomon Islands is conducted on an extremely small scale and in a limited area by fishermen from small villages sparsely dotted on many islands. They use canoes without outboard motors, mainly to catch nearby reef fish by means of hand fishing such as hand line, trolling, gill net, pole-and-line and diving. The fishermen only catch fish for their own meals or for bartering in a non-currency economy. The problems in improving fisheries are the non-availability, under severe tropical climatic conditions, of ice making machines, refrigerator, and marketing facilities in the islands.

The Fisheries Division was established in the government in 1973 to enforce the Rural Fisheries Development Project, and in 1975, various measures were carried out including installation of ice making machines, supply of insulated ice boxes to rural fishermen, construction of a distribution centre, price-assurance plan, a fishing technique training plan for fishermen, and organization of a fish distribution system.

By 1980, eight ice making machine units had been installed at various places and 123 ice boxes were furnished. The Fisheries Centres, which have been set up in various provinces and are carrying out development of fish distribution as well as installation of ice making machines, are taking a leading part in the training and popularization plan.

Operation of Fisheries Centres is undertaken by the provincial fisheries officer together with his assistant and staff. Many facilities of the Centres are considered insufficient. The present conditions (as of 1981) and an improvement plan have been submitted by the Government of Solomon

Islands with regard to the aforementioned ice making machines, ice boxes and Fisheries Centres.

In 1977, SIACO (Solomon Ia Company Ltd.) was established for the purpose of expanding distribution of fish catches. The initial objective of the company was to effectively carry out price controls by setting up fish retail facilities for the capital city, Honiara. SIACO is actually performing a very important role in the expansion of rural fisheries by promoting direct retail sale of the fish, maintaining price control measures and furnishing a continuous supply of fresh fish to Honiara, the largest market.

In 1979, SIACO operated the fish carrier vessel, (Ufi Na Tasi), provided by the Government of Japan, mainly to transport fish from the Marovo lagoon in the Western Province, to Honiara. This was effective in expanding marine products distribution in the Western Province, where fisheries development had been hindered by lack of carrier vessels. The abovementioned vessel is at present docked due to engine trouble and is not in operation at the time of the current survey.

Although it is rather difficult to estimate the production quantity of the rural fisheries sectors still in a self-sufficient stage, the quantity of fish distribution through the Fisheries Division can be tabled as follows:

Table 2.4 Quantity of Fish Marketed through Fisheries Division

Year	Volume	Values
1977	13,374 kg	SI$ 8,024
1978	51,470	36,000
1979	97,346	82,744
1980	135,241	135,200

Source: Fisheries Division, Ministry of Natural Resources
Note: Includes SIACO

Fish catches from coastal fisheries as classified by fishing methods are: lethrinds species (red emperor, long nosed emperor, red margined sea perch and sea bream); grouper species (rock cod and coral cod); snapper species (red snapper, white snapper and sea perch); jack species (trevally) and goat fish species (goat fish) by hand line fishing; barracuda, kingfish, skipjack, tuna and rainbow runner by trolling; mackerel, mullet and sardines by gill net; lobster, octopus, cuttlefish, crab and turtle by diving and spear.

Operation is performed on one day fishing by two- or three-man canoes (some with outboard engines) with fish catch per person ranging from 15 to 20 kg. The fishermen usually work two or three days per week. The fishing ground is located within approximately one nautical mile distance and water depth suitable for hand line fishing is mostly about 170 meters, and about 200 meters at a maximum.
Fishing equipments, including hooks and nets, are all mostly imported from Japan and sold in small units to fishermen at the each Fisheries Centre.
(Refer to next section for fish distribution and marketing.)

The proposed Fisheries Centre sites recently requested by the Government of Solomon Islands and submitted to Japan are listed below. The conditions of these fishery villages are described in the next section.

Village	Province
Lata	Temotu
Lambi	Guadalcanal
Tatamba	Ysabel
Seghe	Western

In addition to the above, a survey of the following two Centres was conducted.

Auki	malaita
Tulagi	Central Islands

2.2.2 Distribution and marketing of marine products

(1) SIACO (Solomon Ia Company Ltd.)

The Fisheries Division in 1977 established SIACO to improve the distribution and marketing of fish, the most important factor in the development of coastal fisheries.

The capital of the company is SI$1.5 million and is financed by the Development Bank of Solomon Islands.

The business of SIACO can be itemized as follows: 1) Constantly supplying fish catches from various provinces to Honiara (i.e., promoting development of coastal fisheries in rural areas): 2) Stablizing fish prices and 3) Popularizing fish in general, to the consumer (Fish is cheaper than meat.). SIACO, located in the city of Honiara, is operated by seven staff members (including three from the Government) and is equipped with one large showcase for sales, one ice making machine (daily capacity: 3 MT), two cold storage rooms (-5°C; 22 m^3 x 2) and one freezing storage (-20°C; 22 m^3). It is projected that staff members will increase from the present seven to ten from 1983 and SIACO is expected to become an independent self-supporting system.

The delivery routing of fish is classified mainly into three categories, as follows:

1) Fish stored in ice boxes in each province are transported by boat to Honiara.

2) Provincial fishermen deliver ice boxes containing fish by truck.

3) Fishermen from islands relatively closely located, deliver their catch to SIACO by boat and canoe.
(Fishermen of Tatamba, Santa Ysabel Island, often deliver directly to Honiara by FRP boats of 25 to 40 HP when carrying boats are not available.)

Purchase price of fish is classified according to the sort of fish with its quality. The first grade fish is priced at SI$1.38 per kg, and the second grade at SI$0.98 per kg. Marketing is classified into two categories, one is large lot consumption for schools (200 kg. to 500 kg. per purchase per school) and the second is for the general consumer. The first grade fish is priced at SI$1.85 per kg. for both categories of consumers. The second grade fish is priced at SI$1.65 per kg. for the large lot and at SI$1.75 per kg. for the consumer in general; these prices are approximately SI$0.10 higher per kg. than prices at the municipal market.

Monthly marketing quantity is 8 to 12 MT; the 1981 marketing record was about 100 MT.

The problem now facing the SIACO is one of unbalanced income and expenditure. The marginal profit between the marketing price and purchasing price is to properly cover the operation and administration. Fortunately, consumption tendency is pretty strong. Consumers in general strongly wish to lower the price of fish to cope with the rising daily living cost. On the other hand, rural fishermen are proposing increased purchasing price because of the pressure of soaring fuel cost and the higher price of fishing equipment.

The operation is further hampered by the lack of adequate carrier vessels, soaring freight charges, increasing personal expenses and maintenance cost of SIACO facilities. According to the manager, the surplus of SI$6,000 gained last year, still cannot offset the accumulated deficit incurred since the company was established. It is considered that careful and reasonable management is required.

(2) STL's canned skipjack for domestic consumption

In 1973, STL's canning factory began its Tulagi operation. In addition to export production, canned skipjak (flake type) for consumption within Solomon Islands is also produced and is becoming popular throughout the islands. Canned skipjack was previously merchandised by a broker; however, as of 1982, the products are becoming much more popular at a fixed retail price at SI$0.45 per can in accordance with the governmental policies as follows:

1) Using domestic products as much as possible instead of imports
2) Popularizing fish diet
3) Providing the people with good quality protein at moderate price

In 1982, marketing is estimated to be 55,000 cases per year, a considerable increase compared with the 36,600 cases, marketing record of 1978. Canned products for export have ranged from 75,000 to 90,000 cases per year since 1979.

(3) Others

In Honiara, the capital (about 18,000 population at the time of this survey), there is a small scale municipal market selling vegetables, fruits, fish and meat. The marine products sales store in the market is rented out to a private marchant who is selling fish other than skipjack from the Solomon Taiyoo catch not suitable for canning production. The retail price at this store is SI$0.70 per kg., and the marketing quantity is about 25 MT per month and about 300 MT per year.

In addition, there are at present 12 fish stores in Honiara, selling fish purchased from rural fishermen averaging about 250 kg. per week.

In Auki, private merchants (mostly Chinese) are selling to the above stores fish purchased from the fish market, storing them in ice boxes and shipping them out by regular liner vessels (passenger-freighter of 300 to 500 G/T) going to Honiara three times weekly.

2.2.3 Fishing training

(1) Present state of skipjack fishing training vessel and tuna long-line fishing training vessel provided by Japan

These training vessels are leased out from the Government of Solomon Islands to the National Fisheries Development Ltd. (NFD), who handle the operation.

1) Skipjack fishing training vessel

Two skipjack fishing training vessles, provided by the Government of Japan in 1979, are assigned one each to Tulagi and Noro base. Navigation is carried out by these vessels four times yearly by boarding four to five students per vessel from Honiara Technical Institute (HTI). Those who have completed the training course are at present working on thirty skipjack training vessels registered in Solomon Islands.

Crew and trainees on board each training vessel are as follows:

Table 2.5 Crew and trainees on board each training vessel

Year	Crew			Trainee
		Japanese	Solomon Islanders	
1979	A	12	12	4 trainees x 4 voy. : 16
	B	12	12	5 trainees x 4 voy. : 20
1980	A	10	14	4 trainees x 4 voy. : 16
	B	10	14	5 trainees x 4 voy. : 20
1981	A	8	16	4 trainees x 4 voy. : 16
	B	8	16	5 trainees x 4 voy. : 20

A. Solomon Hunter (78 G/T)
B. Solomon Fisher (121 G/T)

At present, training is being given only to sailors to become navigators. Although the HTI has an engineer course, the training vessel does not accept them. So far there is no Solomon Islander fishing master; however, they are expected after two years.

Financial operation (profit and loss) of these vessels is as follows:

Table 2.6 *Financial operation (profit and loss) of each vessel*

Year	Solomon Fisher	Solomon Hunter
1980	SI$ 190,000	SI$ 180,000
1981	100,000	18,000
1982	2,000	-118,000 (estimate)

(Note: The above difference between two vessels is attributed mainly to differences in fisheries techniques.)

2) Tuna long-line fishing training vessel

These two vessels have been operating since October, 1981. Eighteen Solomon Islander trainees are operating the vessels except for four Japanese experts on board.

Operational status of these two vessels for 1981 to 1982 is given below. Each vessel has made three voyages from the time they left port on October 31, 1981, until returning to port September 21, 1982.

Table 2.7 Operation status of tuna long-line fishing training vessel

	Working days	Times of operation	(Working rate)	Anchoring days	Navigation days	Fish catch	Sales amount	Profit & loss
ATU	326	171	(52%)	37	118	M/T 177	SI$ 443,000	-SI$ 60,000
KARIQA	326	178	(55%)	38	110	193	SI$ 511,000	-SI$ 50,000

The NFD had been planning to bring in five tuna long-line fishing boats from Japan for boarding trainees; however, the plan has been suspended due to the problem of insufficient skipjack catch.

(2) Training for coastal fishery

The training for coastal (rural) fishery by the Government of Solomon Islands has been undertaken by the Fisheries Division of the Ministry of Land, Energy and Natural Resources since 1973. In the initial stage, training of both coastal fishermen and commercial fisheries was conducted; however, since 1975, training has been concentrated on coastal fishery training, which is developing into the Project being requested. (Refer to aforementioned section of Coastal fisheries under 2-2-1 (2).)

Training is conducted in Fisheries Centres located in various provinces, mainly for: 1. Fisheries techniques (on production); 2. Cold storage of fish (on processing); 3. Operation and repair of outboard engine; The above 1. is to select items suitable to the province from net making and repair, hand line (by hand or mechanical reel), trolling, gill net, diving, purse sein, pole-and-line, barrier, spear, tucking and others. 2. is to teach, using an illustrated text (issued by the Fisheries Division), the basic processing of fish to keep freshness by ice storage after removing internal organs as quickly as possible.

Concerning the course, expenses and recruiting trainees in Auki, one unit is composed of one week's training and one group is composed of 10 to 15 trainees. A general course is to be conducted twice a year and fishing techniques, as well as an outboard engine course is to be conducted four times per year under the annual program. Training expenses are borne by the Provincial Government for SI$100 per each training. Trainee recruitment is announced through radio broadcasts each time.

2.3 Related Development Project

The measures that the Government of Solomon Islands has carried out for commercial fisheries and coastal fisheries are described in the aforementioned section 2-2 entitled Fishery Conditions. Development targets which the Government summarized in 1981 are the five items listed below.

1) To manage all Solomon Islands' fish resources within the 200 mile zone so as to ensure long-term optimal sustainable yields.

2) To undertake research into coastal, oceanic and migratory fish stocks as an aid to good management practice.

3) To develop rural small scale fishing as a source both of food and of cash income.

4) To maximize the participation of Solomon Islanders in the commercial fishing industry.

5) To move towards self-sufficiency in fish supplies for the domestic market.

As to the development of rural small scale fishing in realizing the above, the Fisheries Division is effectuating the five points of the development project as follows:

1) Installation of ice making machines in key localities.

2) Development of new fishing method for previously underutilized stocks.

3) Development of marketing centres and an appropriate and stable price structure.

4) Provision of training programs in fishing techniques and marketing organization to fishermen and fishing groups.

5) Assistance in procuring ice boxes, fishing gears and related equipments.

The Division is planning to further move ahead nationalizaion of commercial fisheries.

In 1979, the Aid Management Committee was established to coordinate acceptance of foreign aid. The development expenditures with regard to the fisheries budgetted for 1979 and 1980 are SI$ 4,614,700. As to the total amount, NFD's fishing boats building cost for SI$2,820,000 is financed by ADB and the rest is aid from various foreign nations.

2.4 Fisheries Centre (Auki, Malaita province) Activities Provided by the Government of Japan

Auki, the capital of Malaita Province, has some 6,000 population including neighboring residents, and approximately 200 fishermen and 100 canoes. Auki is a port located close to Honiara, about 30 minutes away from there by air and 15 minutes by car from the airport. There is a jetty extending from the central part of the town about 100 meters long, which can berth about 500 G/T class vessels. Near by the jetty, there is a market selling fish, vegetable and fruit. Also various shops and town offices are located across the busy road.

The Fisheries Division (Fishereis Centre) of Auki is located next to the fish market, facing the sea and the other side of the market. In 1979, it was established through assistance from the Government of Japan to develop the coastal fisheries of this island, (a province with a population about 70,000), which is the most densely populated among seven provinces. The operation has been proceeding quite satisfactorily as a pioneer for the Centre of other provinces. The training program of this Centre includes instruction of various fishing techniques, operation and repair of outboard engines, and fish purchasing and marketing.

The Centre is staffed by three members. The instructor for outboard engine training is a Japanese from JOCV. Training unit of the trainees is coposed of one week's unit in groups of from 10 to 15 persons each. The present plan calls for giving the general cource two times, with four times each for fishing techniques course and the outboard engine course.

The Provincial Government pays solomon $100 training expenses for each training course and the trainees are recruited through radio announcements.

Marketing services are conducted by purchasing fish delivered to the fish market by local fishermen at solomon $0.65 to 0.70 per kg. and selling them at SI$0.80 to 0.90. Marketing quantity is 600 to 700 kg. weekly with a maximum record up to now of 6 M/T per month. Daily business hours are from 07:00 a.m. to 04.00 p.m. except Saturday and Sunday. Private merchants also sell fish outside the premises.

The fish stock in this area, including trevally, emperor, seaperch, redfish, tuna, skipjack, barracuda, lobster and others, are caught by various fishing methods such as hand line, gill net, trolling and diving. The equipments at the fish market consist of one showcase of about two meters, two ice making machines (each with ice-making capacity of producing about 360 kg. each time for 10 to 12 hours), one freezing room (about $15m^3$ and -40°C not in service due to malfunction), one ice crushing machine and 10 ice boxes.

As mentioned above, the Fisheries Centre of Auki three years after its establishment is, through the training, increasing its production, distribution and marketing quantity and is promoting increased income for the fishermen, associated parties and groups. The whole town has become very active and the economic as well as social effects are bringing about to Auki, its neighborhood and associated districts.

It is believed that the efforts of the fishermen and the Centre's staff members, leadership of the Central and Provincial Government and faborable siting conditions to the sea and land have all worked out well to realize an operation.

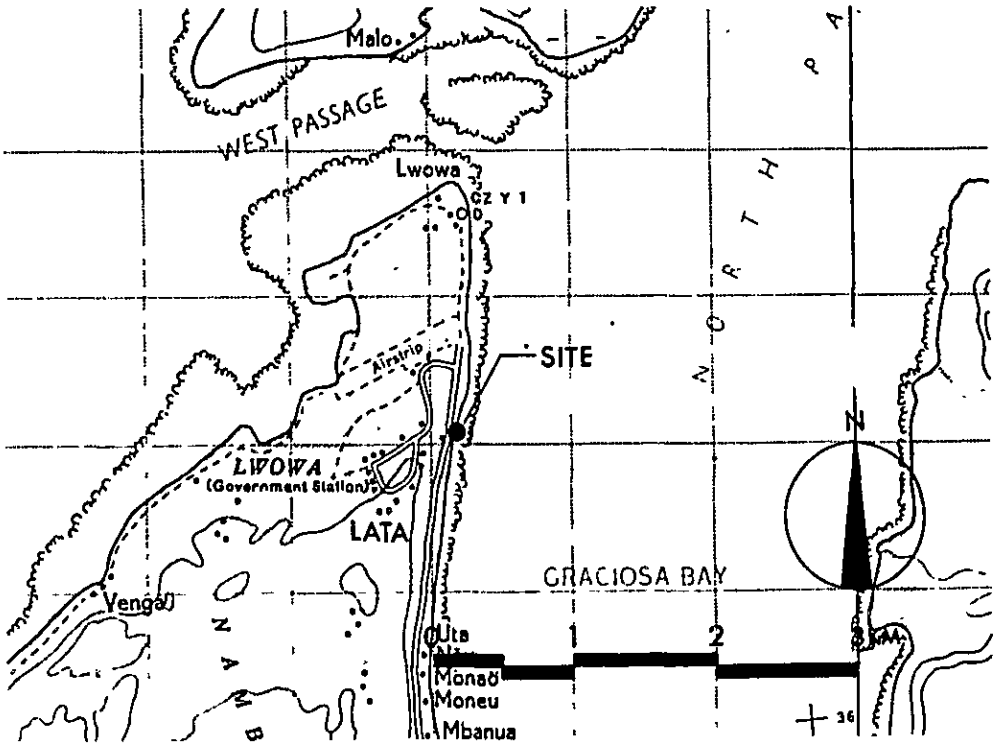
3. CONDITIONS OF CONSTRUCTION SITE

The Fisheries Division points out the requirements for siting the Centre as follows:

1) Location where population is relatively dense in the province.
2) Location which is, or will be, important in terms of traffic trade.
3) Location close to fishing grounds and convenient for distribution and marketing of reef fish.
4) Site with conditions suitable for a fishing port such as water depth, terrain structure and others.

The survey team concluded that the following four sites meet the above-mentioned criteria and further are appropriate in architectural considerations, surrounding condition, local acceptability and so on.

3.1 Lata



3.1.1 Fishery and general conditions

Lata is located at Ndede island, the largest of the Santa Cruz Islands, situated at the eastern end of the country. It can be reached from Honiara in about two and a half hours by air. The island has a total population of approximately 6,000 (about 14,000 for the whole province), about 300 fishermen and 400 canoes including small size and 50 with outboard motors.
Fishing is conducted mainly by hand line and gill net to catch trevally, snapper, grouper, red emperor, perch, sea bream, tuna, skipjack, sail fish, lobster and others. The fishermen go out fishing two or three times weekly to fishing grounds located 100m to one mile from the port and catch about 15 kg. per fisherman per sailing.

Hand line fishing is done in waters at a depth usually of 170 to 180 m and 200 m at a maximum. The catch, other than what is consumed in the village (the surplus), are sold to the truck (leased) that is moved around by the Fishereis Division.

There is one ice making machine unit (provided by Australia) in the existing Fisheries Centre; however, it does not work due to no available electricity, which severely limits the fish catch in the area.

The fishermen sell catch at SI$0.60 per kg. to the Centre, which sells it to the consumer at SI$0.80. The lobster is sold at SI$1.50 and SI$1.80, respectively.

The staff of the Fisheries Centre will consist of five members and their services include training fishing techniques and outboard engine, processing, purchasing and marketing of fish and others. It is strongly felt that fishermen on this isolated island with limited resources will place their hope, both economically and geographically, on the island's fishing resources because the price of copra, one of the main products, dropped recently to SI$0.16 per kg.

A small jetty, about 40 m long, extends from the shore in front of the Centre. Water depth at the end of the jetty is about three meters and 100 G/T class vessels can berth alongside. The term was told that the electric wiring was completed by Australian military forces several days before the team survey made on November 11, and elecric wire was seen hanging from the window into the building. Reports indicate that reef fish is abundant around the island and surroundings of Santa Cruz Islands and also that trolling is conducted; however, the fishing is only for self-sufficiency and not productive because of the lack of ice.

Production and income are expected to increase when the Centre is established. Staff members of the Centre are quite eager to undertake future activities although they stress the regional gap and said that they intend to expand production to ship fish to Honiara and even overseas, if profitable.

3.1.2 Site and construction conditions

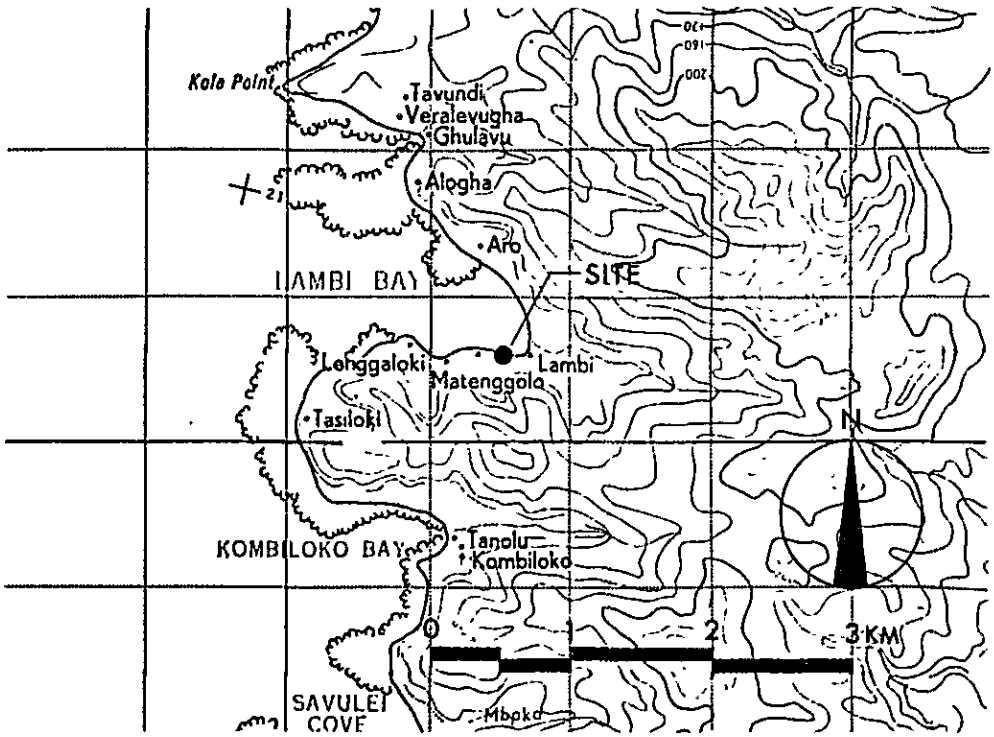
The site is away from the town of Lata by about 1 km and is adjacent to a road which leads to villages nearby. Around the site is a small community with jetty, market place of vegetables, people's residence and a small fisheries centre of simple wooden structure next of which the new centre will be constructed. The ground is about 3 m above sea level with a gentle slope which continues to the seashore, and the soil consists of rather rough sand.

The site is equipped with electricity and drinking water. There is a plan to install a telephone network in Lata, but the actual time of beginning the service is not decided. The land is a property of the Provincial Government.

Besides wooden houses there are concrete block masonry in Lata, some of which are under construction. An Australian construction company undertakes constructions at desired time by hiring local people. Also the Australian army practises constructing a variety of facilities there. Skilled labourers of building construction are available around the site. Construction materials available there are sand, gravel and coral.

There is a regular shuttle ship service between Lata and Honiara, but because of its small capacity and low frequency being only once every 1.5 months, every service is very crowded and it is almost impossible to use this service for the carriage of the building materials of the project.

3.2 Lambi



3.2.1 Fishery and general conditions

Lambi is located in the depths of Lambi Bay at the west of Guadalcanal Island and about 70 km. away from Honiara by road. It took about one and a half hours by a four-wheel-drive car. The port has faborable conditions because the water depth at the centre of the bay is appoximately 30 m with relatively few reefs.

The proposed site is at the depths of the bay, close to the seashore some 10 m distant. The beach around the site is sandy and there is no jetty. Lambi has a Provincial branch office and a population of about 300 or about 800 including the neighbourhood. About 100 fishermen are part-time farmers, mainly producing copra, and have approximately 200 canoes including about 20 with outboard motors. The fishermen fish mainly for reef fish using long line with some of them using gill net and purse seine. Fish catch includes red snapper, emperor, rock cod, mullet and mackerel in the fishing ground located close to shore, 0.5 to 1.0 mile away. Due to lack of an ice supply, they have to repeatedly go out every day for half-day fishing either in the morning or afternoon.

They sell the fish in small quantities to SIACO in Honiara at SI$0.55 per kg. to get cash income by carrying them stuffed in ice boxes on a small truck which comes almost every day to transport agricuture products and daily life consumables, as well as passengers.

Lambi, with convenient conditions for traffic, has to depend largely on fisheries because the fishermen occupy a rather large percentage in a relatively small population; therefore, it can be considered a favourable site. The Provincial Government official strongly wished to have the Fisheries Centre established there because the production and income can be increased with an assured ice supply to store the fish catch in fresh condition.

3.2.2 Site and construction conditions

The site is away from the center of Lambi by 200 m along the shore. There is a bank of about 1 m high, which continues from the seashore, and the back of it is a marsh. An approach from the town of Lambi is possible along the seashore, and in a few years a road which comes from Honiara to Lambi will be extended to run in front of the site and to go further.

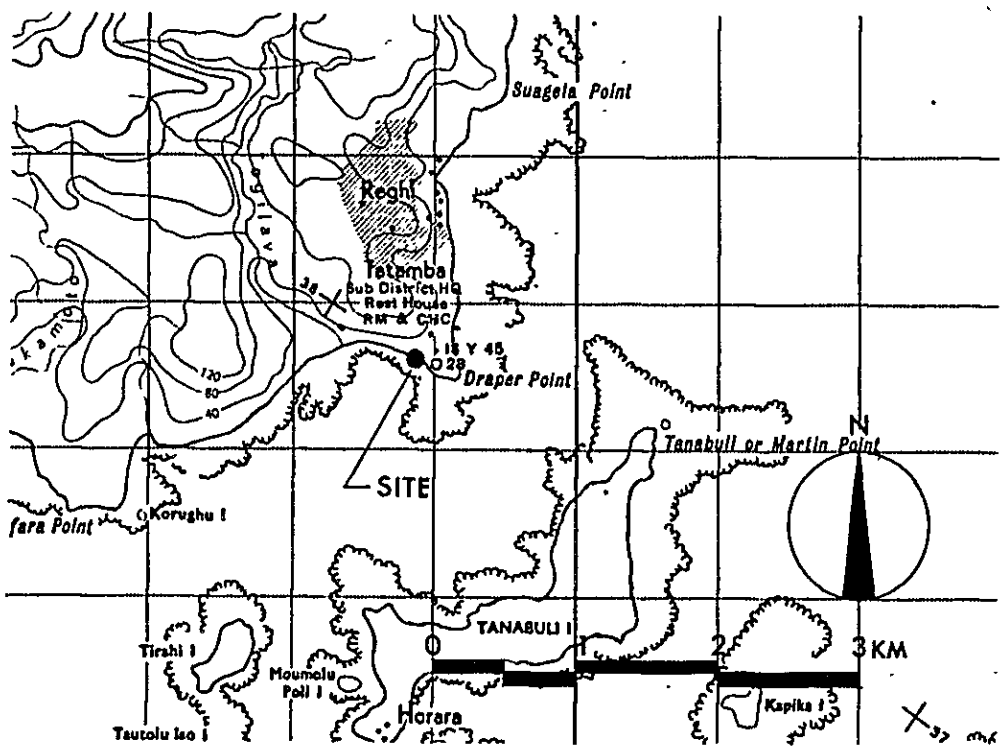
The ground of flat marsh is a little soft and the bank consists of well tightened sand. By the side of the site runs a water supply pipe which is led

from a river nearby. Electricity and Telephone line are not installed yet. The land is private property and the Provincial Government plans to rent it for the Fisheries Centre.

All houses around Lambi are leaf house with some exceptions of wooden structures of official buildings. Since there is little construction activity, nobody is technically trained to participate in a construction work. Construction materials are also hard to obtain around the site. Coral sand and gravel are available near the site, but gravel needs some care to select grains of the same size. Coral sand can be used for plaster work.

The road from Honiara to Lambi is sometimes blocked by a high water of the river. Even in a usual time, the bridge has a weight limitation which may cause a low efficiency in carrying construction materials. There is no jetty in Lambi, so an ordinary cargo boat is difficult to get close to the shore. When we carry materials by sea, we have to use a barge.

3.3 Tatamba



3.3.1 Fishery and general conditions

It takes about 45 minutes by air from Honiara to the airport in the small island off Buala, the Provincial Capital, from the airport to Buala by boat about 10 minutes, and from Buala to Tatamba again by boat about 2 hours 10 minutes because there is no available connecting road.

Next to the site, there is a about 30-meter-long small jetty with water depth of about five meters to serve 200 G/T class vessels. The existing facilities are an ice making shed and storage for fishing gear and outboard engines, which are of small scale but efficiently operated. There is a population of approximately 200, 150 fishermen and 30 canoes, including six with outboard motors. The small type of ice making machine provided by Australia can produce 360 kg. of ice in about 12 hours each time (15 kg. pan x 12 x 2 lines). The fishing gear and outboard engines are mostly from Japan.

The fishing ground is spacious, surrounding the reef and extending all over the area located about 0.5 to 1.0 mile from the port. The fishing is done by hand line to catch trevally, king fish, barracuda, red snapper, skipjack and others. One fisherman catches on an average, about 20 kg. of fish each time. The fishermen sell kingfish at SI$0.70 per kg., other fish at SI$0.50 per kg., and lobster at SI$4 per kg. to a local middleman, who delivers them to Buala, and also to SIACO, which picks up and carries them once or twice per week to Honiara. Also, when the fishermen have a good catch, they make delivery themselves by storing the fish into four to five ice boxes and carry them to Honiara by FRP boat (40 HP), taking about five hours. Five staff members are expected to undertake the required services, including the training of fishing techniques and outboard engine, processing, purchasing and marketing of fish and others, once the Fisheries Centre is esbablished.

These services are carried out using the above-mentioned existing facilities intermittently on a small scale. Once the Fisheries Centre starts its operation, it is expected that the fishermen will make great efforts to increase their catch to earn more income and to upgrade their living conditions, as well as to develop the village because Tatamba, together with its neiborhood is favored with abundant reef fish and it is located close to Honiara, the biggest consumer city.

3.3.2 Site and construction conditions

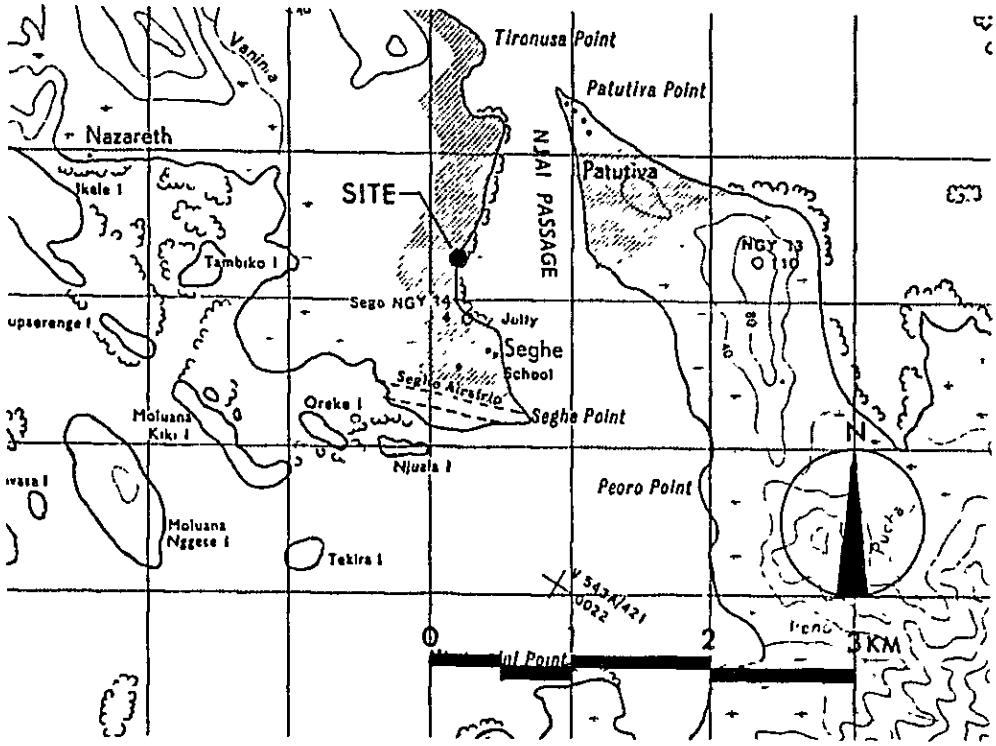
The site is near the houses of Tatamba and is in between the bank, which continues to jetty, and the seashore. The surface is covered with shrub and the ground is almost the same level with the sea. The top soil is humus, so the bearing capacity is very low. Prior to the construction work, humus soil and root of shrub should be removed to its full depth, and the land should be made by stacking up coral stones.

There is a existing facilities of about 30 m^2 beside the site. Its structure is concrete block masonry. There is a water supply pipe installed by the side of the site, but there is no electricity or telephone network. The land is owned by the Provincial Government.

In the vicinity of Tatamba most houses are leaf house. Some wooden structures are used for office and rest house. Since there is little construction activity, nobody is technically trained to work at a construction site. In Buala, the capital town of the province, which is about 40 km away from the site, are there some tens of wooden houses and only several carpenters. Coral sand, black sand and gravel are available near the site, and timber is also available from a lumber mill nearby.

There is no regular ship sevice, so the transportation of construction materials should depend on a chartered vessel.

3.4 Seghe



3.4.1 Fishery and general conditions

It takes about one hour and 20 minutes by air from Honiara to Seghe Airport and about five munutes by boat from the airport to the site. The site, facing the seashore, is plain land cut out of dense forest. There are many fishery villages on the opposite shore and in the neighborhood. Seghe is located in almost the southern part of Marovo Lagoon, an area well known for its rich stock of reef fish, in Western Province, which is the most favored with fish resources in Solomon Islands.

The population including neighboring villages is about 3,000. Thre are approximately 600 fishermen with about 300 canoes, including about 100 with outboard motors.

The cold storage carrier, Ufi Na Tasi, provided by the Government of Japan in 1979, is used to successfully purchase the fish of this area and carry them to Honiara; however, she is not in service these days due to engine trouble.

Fishing in this area is for the reef fish of Marovo Lagoon, including mainly trevally, barracuda, red emperor, and king fish. The prices at which the fishermen sell to the local middleman are almost fixed at SI$0.60 to 0.70 per kg. The middleman carries the fish stored in ice boxes to Gizo, the provincial capital, by carrier vessel (about once a week) in two days, and then from Gizo they are sent together with fish from other areas to SIACO in Honiara. SIACO purchases them at SI$0.95 per kg. and sells at more than SI$1.50 per kg. to the general consumers. A village situated in the central part of Marovo Lagoon has one ice making machine, which, however, does not work satisfactorily to produce sufficient ice. Due to the shortage of ice, the fishermen can not help being limited to fishing only for their own self-sufficiency.

In view of the above conditions, once the Fisheries Centre is set up, the realization of increased production and more income can be expected at an early stage because of Seghe's favorable location close to a fishing ground and a high population rate of the fishermen.
One personnel from the Central Government and three from the Provincial Government will be assigned to staff the Fisheries Centre.

3.4.2 Site and construction conditions

The site is near the town of Seghe and its airfield. It is a parcel of flat land which is opened to the sea by cutting trees. This vicinity doesn't have a network of road, so the approach to the site is mainly from the sea. At the time of survey there was a jetty being under construction.

The seaside of the site is in nearly equal level with the sea, and the ground has a lot of crevice in between the coral stone. The upper area of the site has a better ground with coral sand firmly tightened. In case of planning the building in this area, some trees must be cut in order to let the building stand in normal shape.

Electricity and telephone line are not installed yet. There is a water spot about 100 m away from the site. Underground water is led there. The land is owned by the Provincial Government.

There are some wooden structures for official residence in Seghe, but the rest of the buildings are all leaf houses. There are not many construction works around this area and there is not a skilled labour. Coral sand is available near the site, and timber is also availale from a lumber mill nearby.

This place is near the regular ship service between Honiara and Gizo, which will be used for transporting materials. The jetty now under construction has 6 m in depth.

4. BASIC DESIGN

4.1 Objective and Contents

The objective of this project is to improve the coastal fisheries in rural area, in good accordance with the Rural Fisheries Development Project of the Government of Solomon Islands. In order to attain this objective this project plans to supply the Fisheries Centres, ice boxes and fish carrying vehicles, which are hoped to help to provide rural fishermen with fishing trainings and to promote fish distribution and marketing.

The Fisheries Centre will be the base station for the coastal fishing activities in each province. Here are the principal tasks of the Centres.

1) To provide coastal fishermen with training opportunities of various fishing techniques, technique of processing fish and the technology of the outboard motor.

2) To purchase, process, retail and transport the fish caught by local fishermen.

3) To produce and retail ice.

Ice boxes are used to refrigerate fish in the Fishries Centres, to preserve fish and ice in rural villges or to keep fish cold during the transportation by vehicles or vessels.

Fish carrying vehicles are used for purchasing and retailing fish in the scattered fish market and fishery villages.

Here is the contents of this project.

Fisheries Centres at 4 sites

- One at Lata in Temotu Province
- One at Labmi in Guadalcanal Province
- One at Tatamba in Ysabel Province
- One at Seghe in Western Province

250 ice boxes

2 fish carrying vehicles

4.2 Basic Design

4.2.1 Basic policy

The basic policies of planning the Fisheries Centres are as follows.

1) The design of the four Fisheries Centres provided by the Government of Japan in 1982 are followed in principle.

2) The design of the building should reflect the functions of the Fisheries Centres clearly, and also possess flexibility to respond to the changes in the future.

3) The design should consider the conditions of the construction sites and the actual state of the local construction work to the full.

4) The planning of the 4 Fisheries Centres should be the same respectively in principle.

4.2.2 Site planning

Considering the size, the ground conditions and the circumstances of the four sites, each Fisheries Centre is planned to fit the site best. Especially the marketing area in and around which people and commodities make busy circulation is considered the most important in its placement.

1) Lata
   Taking the existing circumstances into careful consideration, the Centre is placed in between the existing storage house of fishing gears and existing vegetable market. This is intended to increase the connection

between the Centre and the storage house, and to form a public open space which continues to the market.

As the site is gently sloped down to the seashore, the axis of the building is placed parallel to the coast line. The road running east of the site makes approaches to both sides of the building by car. A small fishing boat can make a direct approach from the seashore.

2) Lambi

Considering the ground conditions and hight above the sea level, the building is placed on the bank parallel to the coast line.

A small fishing boat can approach from the sea, people approach from inland, and vehicles approach along the seashore until the road is completed.

3) Tatamba

The Centre is placed by the side of the existing building, and stands along the bank continuing to the jetty. All approaches are from the bank.

4) Seghe

Escaping from less steady ground near the sea, the Centre is placed near the existing house about 30 meters away from the seashore with its longer sides parallel to the coast line. Most of the approaches are by small boats from the sea.

4.2.3 Architectural plan

(1) Planning

Hear are the main points in the planning.

1) The Fisheries Centre is an complex architecture including various functions. In order to evade any confusion of functional area and to secure flexibility to change in the future, the plan is designed to be simple and clearcut.

2) In order to get good ventilation, each room has windows in both sides.
3) The platform surrounding the building is designed to be used as a passage between each room. This idea helps to reduce the construction cost and to increase the potential flexibility.

Here is the composition of each functional area in the Fisheries Centre.

1) Training room ($48m^2$)
Here, 10 - 15 fishermen receive trainings on fishing, processing and marketing. The type of training varies very much according to the theme, so this room is not equipped with anything special or solid except a blackboard on a wall. Working space per person is approximately $3m^2$.

2) Storage ($16m^2$)
Training instruments are stored in this room. 2 rooms are provided to store engines and fishing gears. 3 sides of each room are just enough to accommodate the materials.

3) Fishermen's room ($32m^2$)
People coming to receive trainings are supposed to sleep in this room. This space is inevitable for conducting the training program because there are not many overnight accommodations. The space allotted to each person is approx. $2m^2$, which is the minimum space to get a sleep.

4) Marketing area ($48m^2$)
This room is the base place for fish distribution, to be equipped with an ice-making machine, an ice storager bin and a sales counter, and a scale, a desk top calculator and 12 fish carrying baskets are provided.
Ice is produced by the ice-making machine, kept in the ice storage bin and sold to any fisherman. Fish purchased from fishermen are stored in ice boxes with ice, and sold to consumers in turn. This room has a possible minimum space to accommodate necessary equipments like an ice storage bin etc.

5) Office ($26.4m^2$)

This room is for personnel to manage this Centre and to promote the Rural Fisheries Development Project. This room is just as large as to do 4 deskworks.

6) Accommodation ($85.6m^2$)

This room is for 2 volunteers who come to instruct fishermen. Water closet and Kitchen are for common use, and lounge also is used as an meeting place at night. The meeting is important to enhance the training effect in a limited period.

7) Workshop ($48m^2$)

This outdoor space is good for various activities such as training and repair of fishing gear, outboard engine, boat and so on. The size of this space is just enough to work with a small boat.

Table 4.1 Area schedule of a Fisheries Centre

	Floor area (per one centre)
Training room	48.0 m^2
Storage	8.0
Storage	8.0
Fishermen's room	32.0
Marketing area	48.0
Office	26.4
WC	10.8
Kitchen	10.8
Lounge	32.0
Bed room	16.0
Bed room	16.0
Workshop	48.0
Total	304.0

* Total floor area of the four buildings is 1.216 m^2

(2) Design of each component

1) Roof

The Centre has a simple gable roof of corrugated polyvinyl chloride iron sheet which is good against weathering and water leakage. The large depth of eaves are purported to shut out direct sunlight and rainwater into the room.

Eaves gutters collect rainwater on the roof, protecting exterior wall from the raindrops.

In case of utilizing rainwater for water supply, water is led from eaves gutters to the water tank. Polyurethane foam is applied on the underside of the roof, which is to reduce the radiation of heat.

2) Exterior wall

As is the case of the roof, polyvinyl chloride iron sheet is adopted as the exterior wall against weathering.

3) Platform

In order to maintain good water drainage at the foot of the exterior wall, platform surrounds the building. This is used as a passage between the rooms.

4) Floor

In the training room and the marketing area the floor is mortar finish over concrete because many people are expected to work with heavy machines and water is used for washing the floor.

In accommodation area wooden floor is applied to achieve comfort for living.

5) Interior wall

There is no interior wall in the training room, the marketing area and the fishermen's room.

As partitions and interior walls in the accommodation and the office, plywood is applied on wooden studs. In the area water is used, waterproof materials are applied.

6) Ceiling

In order to maintain the living comfort in the accommodation and the office, gypsum board is applied on wooden furrings. In the area water is used, asbestos cement board is applied.

The rest of the rooms don't have ceilings, which will help to make the space volume large.

7) Window

This building has jalousie windows, which is common in the Solomon Islands, by the following reasons.

a) It allows to be opened even when it rains.

b) Its opening percentage is large.

c) It works good for the prevention of breaking-in even when it's opened.

(3) Finishing materials

Exterior finish

Roof: Corrugated polyvinyl chloride iron sheet

Exterior wall: Polyvinyl chloride iron sheet

Platform: Mortar finish

Interior finish

Table 4.2 Interior finish schedule

		Floor	Wall	Ceiling
Training room		Mortar finish	-	-
Storage		Mortar finish	-	-
Fishermen's room		Mortar finish	-	-
Marketing area		Mortar finish	-	-
Office		Mortar finish	Paint finish on plywood	Gypsum board
Accommo-dation	Lounge	Wooden flooring	Paint finish on plywood	Gypsum board
	Bed room	Wooden flooring	Paint finish on plywood	Gypsum board
	Kitchen	Wooden flooring	Paint finish on asbestos cement board	Gypsum board
	WC	Mortal finish	Tile	Asbestos cement board

Refer to Comparison chart of construction method (Table 4-3).

(4) Construction method

In Solomon Islands, construction work has not been developed yet and the production of building materials is very limited. To make things worse, the area around the sites are less developed in the field of construction. Therefore the Fisheries Centres should be built with prefabricated materials which are half finished in Japan and assembled in situ. This method increases precision and shortens the construction period.

The local structure in Solomon Islands is mainly traditional leaf house which has a roof thatched with palm leaf, but in recent years wooden structures with elevated floors become popular in many places.

Here is s comparison chart between the Fisheries Centre and the wooden structure with elevated floors.

Table 4.3 Comparison chart of construction method

		Local method	Adopted method	Reason of adoption
Foundation		Independent footing	Reinforced concrete footing with beam (Mat foundation used partly)	To adopt steel structure (bad condition of soil)
Floor	Slab	Wooden subfloor	Concrete floor (Wooden subfloor partly)	To install heavy machines
	Finish	Wooden flooring	Cement mortar (Wooden flooring partly)	To enable it to be washed by water
	Dampproofing	Elevated floor	Polyethylene film	To adopt concrete floor
Interior wall		Paint on plywood	- (Paint on plywood partly)	To apply the external wall of polyvinyl chloride iron sheet
Ceiling		Paint on plywood	- (Gypsum board partly)	To keep the inside volume (acoustics)
Column and Beam		Wood	Steel	To extend its life To obtain a long span To execute in a short period
External wall		Asbestos cement board	Polyvinyl chloride iron sheet	To extend its life To dispense with maintenance
Roof		Galvanized iron sheet or corrugated asbestos cement board	Corrugated polyvinyl chloride iron sheet	To extend its life To secure the large depth of eaves
Window		Jalousie	Jalousie	To reconcile the protection against raindrops and invasion, with ventilation

(5) Structure

1) External force

For structural calculation external forces are set up as follows.

Seismic force: seismic coefficient K=0.1

Wind pressure: wind load Q = 120kg/m^2

2) Foundation

At Lata and Lambi where ground condition is good, columns are supported by independent footings of reinforced concrete which are connected by footing beams. At Tatamba and Seghe, the continuous footings sit on mat foundation of reinforced concrete which resists the uneven bearing power of soil. Required strength of concrete is 150kg/cm^2 and slump should be 15cm.

3) Column and Beam

The main structure of this building consists of a series of gabled roof steel frames by H-sections. Bracings are applied at both ends of the building in order to resist the force in ridge direction. Horizontal rigidity of the roof is obtained by horizontal bracings beneath the roof.

On-site connection of the steel frame applies friction joint using high-tension bolt.

4.2.4 Plan of building services

1) Water supply

There are two kinds of demand for water in the Fisheries Centre. One is a demand for daily use in kitchen, lavatory, shower room and toilet. The other demand is for making ice, taking it out of cast and washing in the marketing area. This demand needs a lot of water at one time. Assuming that ice is to be made one and a half times a day, a demand for water at each site is estimated at about 2 m^3/day.

The water supply at each Fisheries Centre is planned as follows.

Lata: Water will be supplied directly from the existing water pipe in the site. As the source of water is sufficient in quantity, it is not necessary to prepare extra water supply.

Lambi: Water will be supplied directly from the water pipe nearby, with extra supply from rain water.

Tatamba: Water will be supplied directly from the water pipe nearby, with extra supply from rain water.

Seghe: Rain water will be used mainly and water pipe will be installed from the source of water nearby in case of the dry season.

Rain water is led from the roof of Fisheries Centre to the eaves gutter, collected in a water tank and supplied through a elevated tank.

2) Drainage

Rain water will be led to the sea by way of eaves gutter and downpipes. Waste water and soil water will be disposed of by penetration into the earth from sewage pit, through septic tank as to soil water and directly as to waste water. Septic tank will be a surface-oxidizing type of reinforced concrete.

3) Gas

Liquid propane gas in a cylinder will be used to supply to kitchen ranges.

4) Electricity

Electricity will be supplied from a utility pole on the site, through a electric wattmeter and a panelboard in Lata.

In Lambi, Tatamba and Seghe, electricity will be supplied thorugh a panelboard after being produced by a diesel engine generator (approximately 19 KVA). The load is as follows.

Lighting and receptacle outlets, etc. 8 KVA

Ice storage bin (starting current) 8 KVA,

Ice-making machine installed at each site has a power source of diesel engine except in Lata.
Fluorescent lights will be installed mainly as lighting fixtures.

4.2.5 Equipment

Fisheries Centres will be provided with the following equipments.

Wall blackboard	: 4	(1 per each centre)
Pan scale	: 4	(1 do.)
Desk top calculator	: 4	(1 do.)
Fish carrying basket	: 48	(12 do.)

The above equipments are selected at a minimum in order to manage the Fisheries Centres and will be administrated by the officers of each Centre.

4.2.6 Ice box

Ice boxes are to be used to keep fish with ice in cold storage and carry them. In Solomon Islands, the standardized ice boxes suitable to local conditions are manufactured and distributed after the study and improvement for the past 5 years. The above type is not to be carried by hand but placed in the Fisheries Centres, fish collection vessels or vehicles, and each fishery village. Its capacity is approximately 270 . There is no objection about the size of the standardized ice box from the Solomon's side. This type is judged to be appropriate in size and is adopted. The ice boxes needs reinforcement in its edges for protection.

Specifications

Box size	: 2 feet x 2 feet x 4 feet (Exterior dimensions)
Wall thickness	: 2 inches
Material	: Closed cell polyurethane foam
Covering	: 2 layers of chopped strand fibreglass, and additional layer of fibreglass at all exterior corners.

1 foot = 12 inches, 1 inch = 2.54 cm

4.2.7 Vehicle

The vehicles are to be used to carry fish purchased in the fishery villages nearby to Fisheries Centre, and in Lambi, it is also to carry them to Honiara.

The road surface is rough, and the roads go across rivers, some are furnished with bridges with load limitations, and some are not furnished with bridges, and vehicles must go over cobblestones. So the vehicles must be four-wheel-drive motor trucks which are one tonnage of loading capacity. The protector needs to be furnished on a bed for the safeguard of a body. The vehicle can be loaded with three ice boxes with fish and ice.

4.3 Preliminary Drawings

PLOT PLAN : LATA

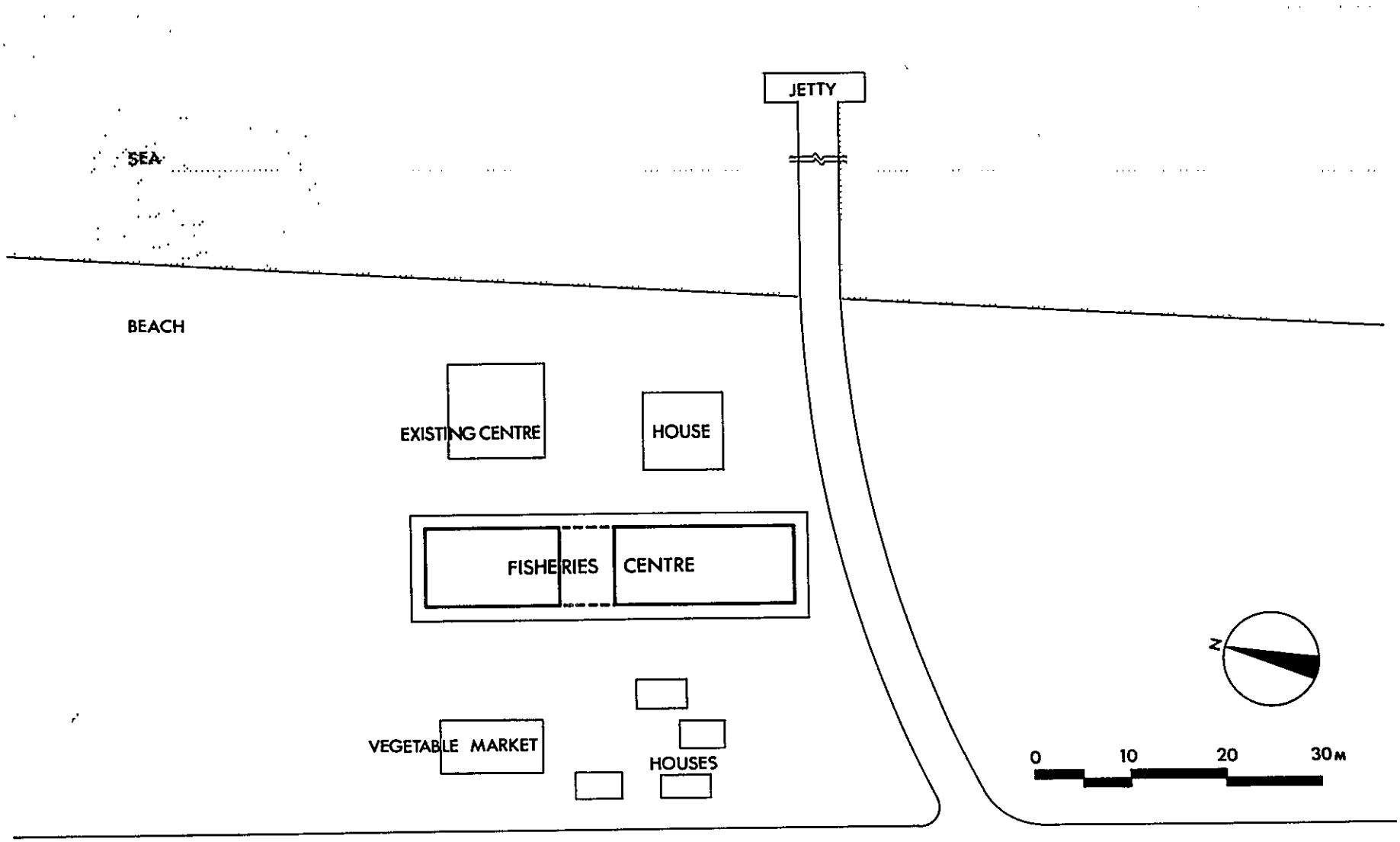
PLOT PLAN : LAMBI

PLOT PLAN : TATAMBA

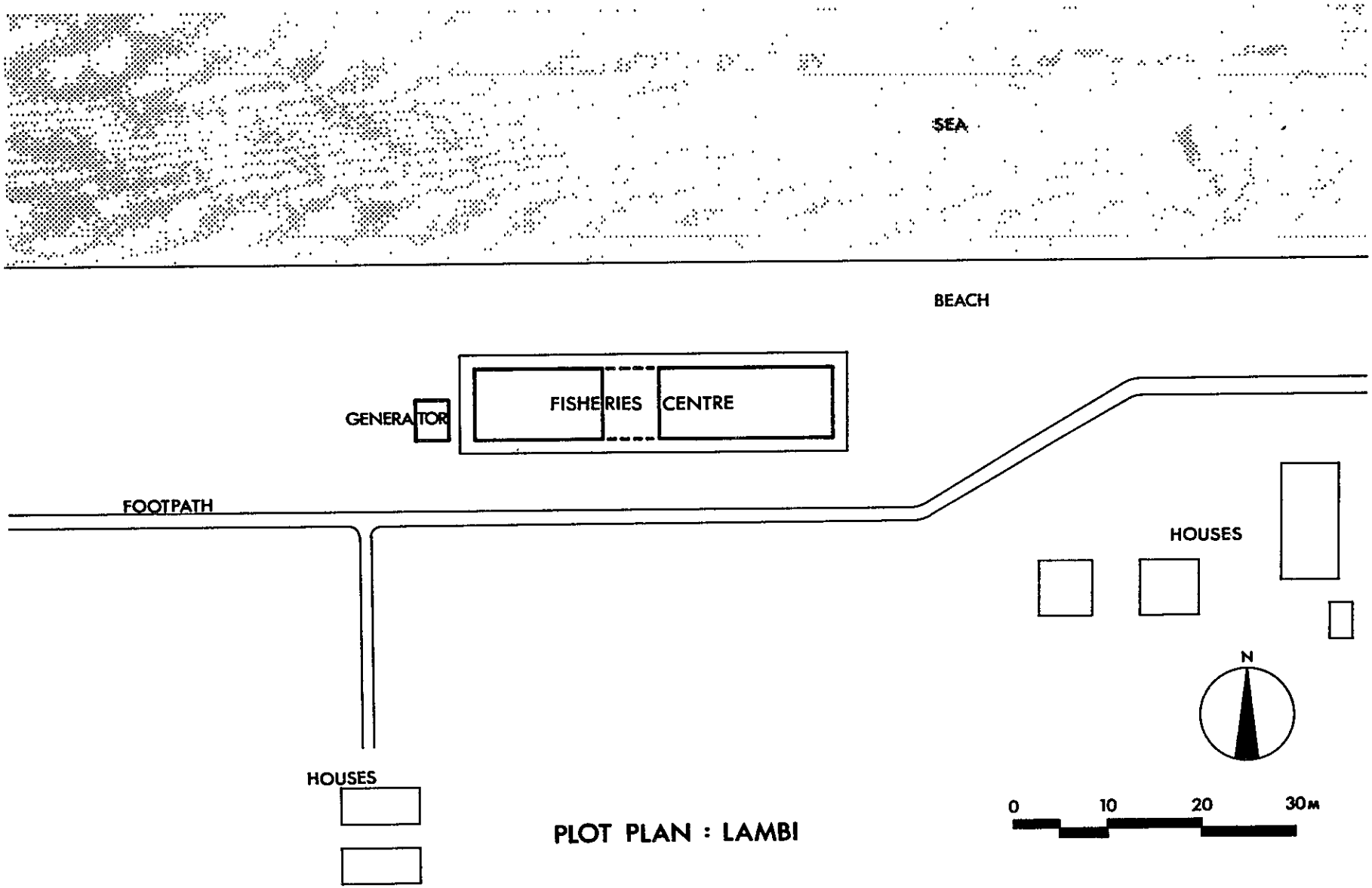
PLOT PLAN : SEGHE

PLAN

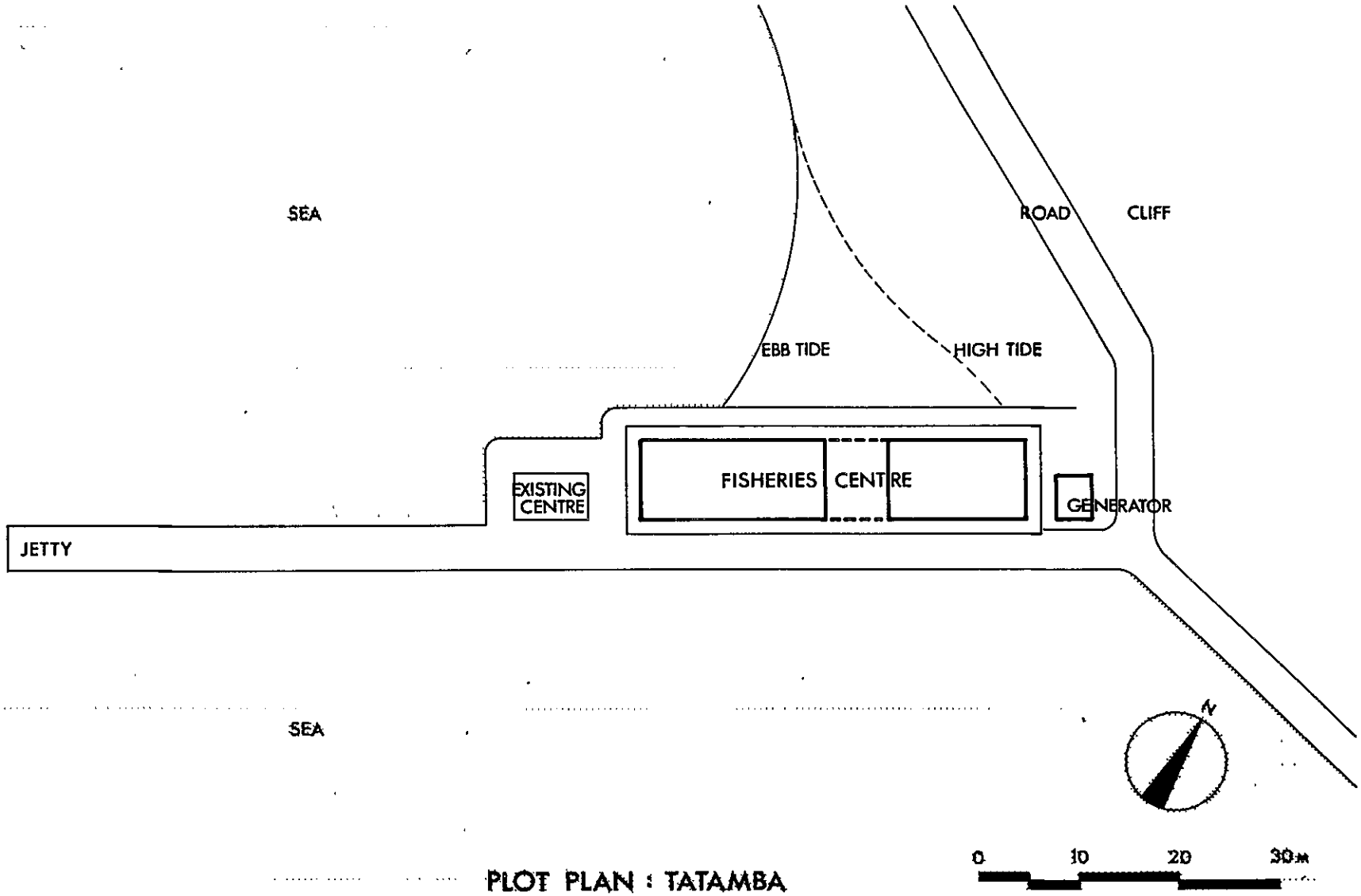
ELEVATION & SECTION



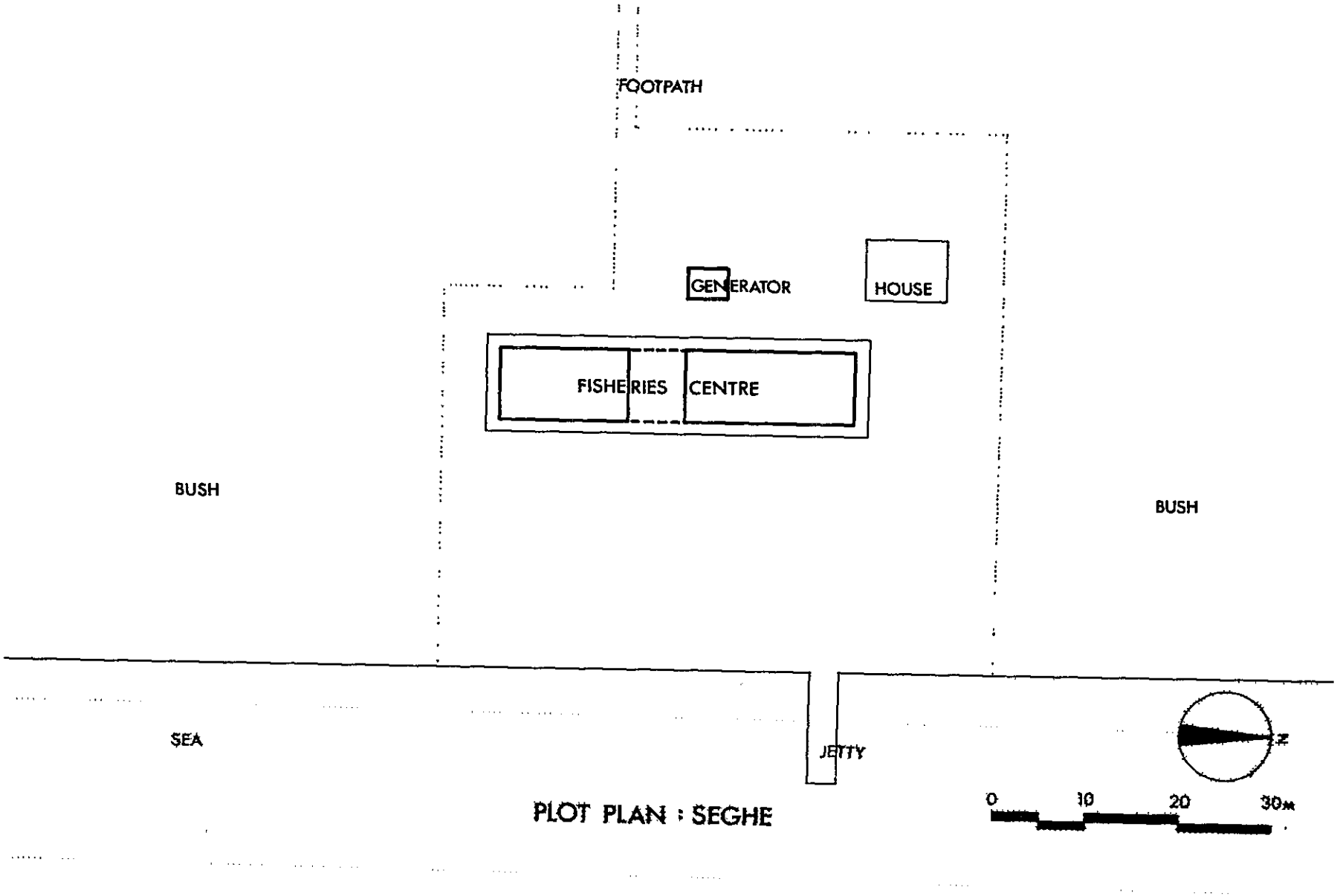
PLOT PLAN : LATA



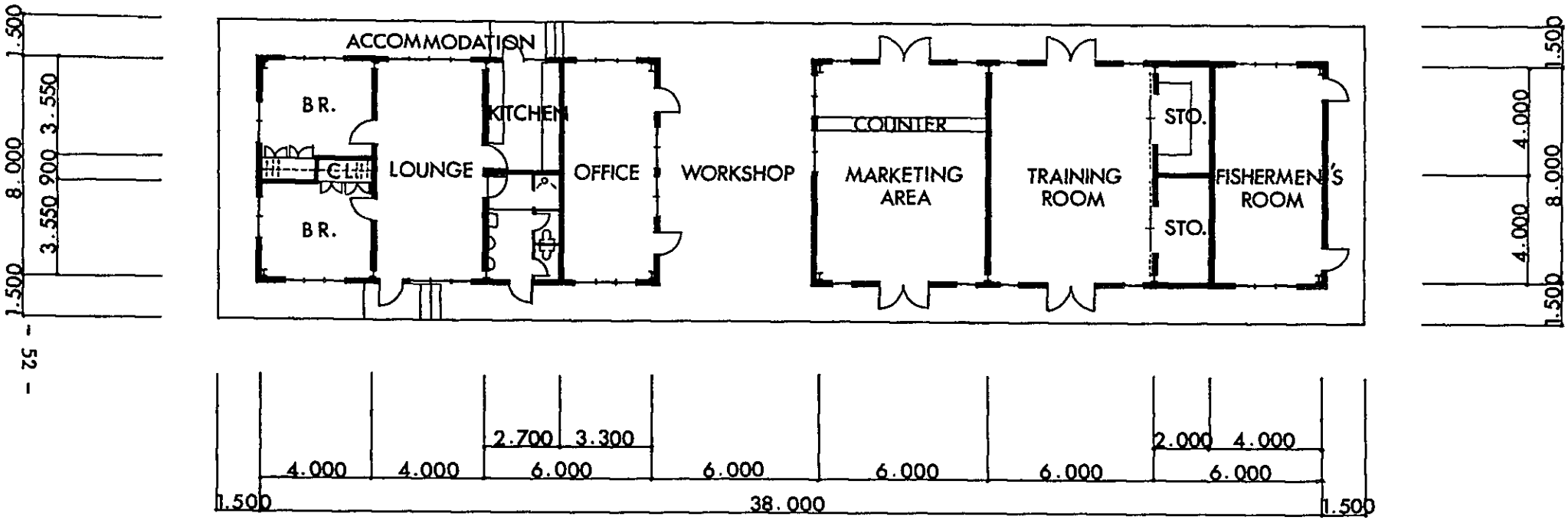
PLOT PLAN : LAMBI



PLOT PLAN : TATAMBA

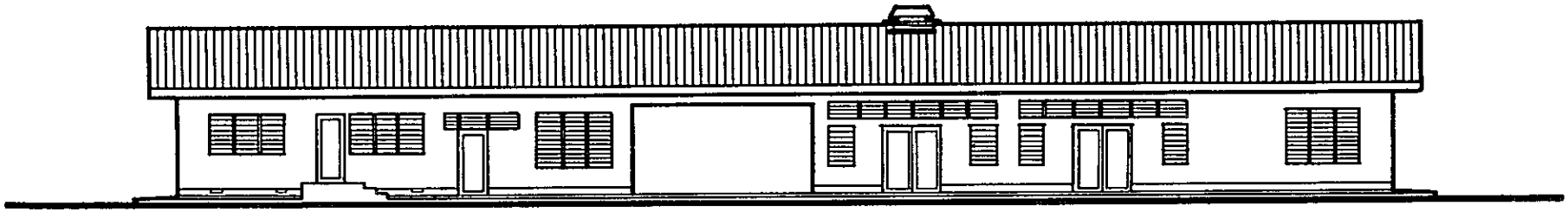


PLOT PLAN : SEGHE

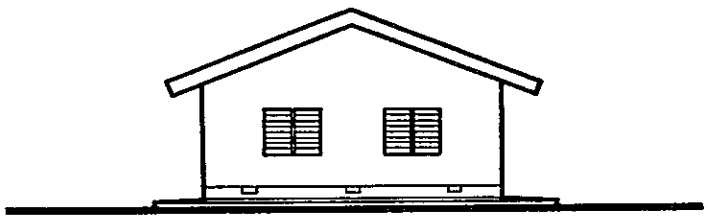


PLAN 304 M²

SCALE 1 / 200



ELEVATION



ELEVATION

SECTION

SCALE 1 / 200

5. IMPLEMENTATION PLAN

5.1 Implementation System

The division of Solomon Islands' side in charge of the planning and execution of this project is the National Planning Division in the Prime Minister's Office. The Fisheries Centres, after the completion, are scheduled to be managed by the Fisheries Division in the Ministry of Land, Energy and Natural Resources, but there are some changes prospected in the organization of administrative office in 1983. Under the new organization the existing Fisheries Division will be reinforced, and the Centres will be under the joint management of the Provincial Fisheries Development Division in the Ministry of Home Affairs and National Development and the Fisheris Research and Industrieal Development Division in the Ministry of Land, Energy and Natural Resources.

The officials of the Centre are mainly dispatched from the Fishris Division in the Central Government and some from the Provincial Government, and volunteers from foreign countries may join in the members, which in all make 3 to 5 per Centre.

Expenses concerning real estate and equipments and personnels dispatched by the Central Government are paid by the Central Government. Expenses concerning management and maintenance such as lighting, fuel, communication etc. are paid from the profit out of the market. (The Centre is supposed to make profit after selling fish by a price higher than the cost buying it.) But the initial expenses of management is scheduled to be paid from the fund prepared by the Central Government.

The cost required by the training program is paid by the Provincial Government with certain amount of money each time.

The annual expense of management and maintenance is estimated SI$12,400 to 13,700 per Centre. On the other hand, the profit out of fish market is expectd to amount to SI$12,000 to 16,000 every year, if everything goes well. Therefore the Centre will be managed with its balance sheet in the black. (Refer to 5-5-2 Cost of management and maintenance)

5.2 Execution of Construction

5.2.1 Organization of execution

A Japanese contractor undertakes the whole set of this project including the Fisheries Centres, fish carrying vehicles and ice boxes. The main office of the contractor is to be placed in Honiara, and the staff in that office conduct administrative business such as procurement of materials, arrangements of transportation, supervision of working procedure, accountings and communication with headquarter in Japan.

At each site, the actual work is proceeded by the site manager.
The construction at Lambi is managed by the project manager stationed at the main office in Honiara. The manufacturing of ice boxes are ordered and directed by the main office.

As to supervision of the construction work, a consultant checks the shop drawings and inspects the materials and products presented by the contractor in Japan. The consultant also has a responsibility to supervise and inspect the construction work visiting Honiara and the sites according to the working schedule.

5.2.2 Method of execution

Construction materials such as sand, aggregates and lumber which can be obtained in Solomon Islands are to be procured near the sites or in Honiara. Importing goods whose supply is guaranteed or allows rather long period of time are obtained in Honiara.

The architectural or mechanical parts which are to be produced according to the shop drawings are ordered from Japanese manufactures. The parts standardized in Solomon Islands like outlets of electricity are to be purchased in Honiara. Here is a chart showing where to obtain materials.

Table 5.1 Procurement of materials

	Solomon Islands	Japan
Sand,aggregate	o	
Cement	o	
Lumber	o	
Steel frame		o
Roofings and exterior wall		o
Interior finishing	o	o
Plumbing equipments		o
Eelectric equipments	o	o

The materials sent from Japan are divided into two groups, those which are used at temporary and foundation work and those which are used in and after the steel framing work. The former are sent immediately after the commencement of work, and the latter are manufactured or processed in Japan and sent to Honiara by a liner. From Honiara materials are sent to each site several times according to the construction schedule. Liners can be utilized to Seghe, but chartered ships are needed for other sites.

The local labour who will engage in construction work will be procured in the following way, according to the actual state at each site.

Lata : Procure all labour around the site.

Lambi : Procure skilled labour from Honiara and unskilled labour from around the site.

Tatamba: Procure skilled labour from Honiara and some from Buala, and unskilled labour around the site.

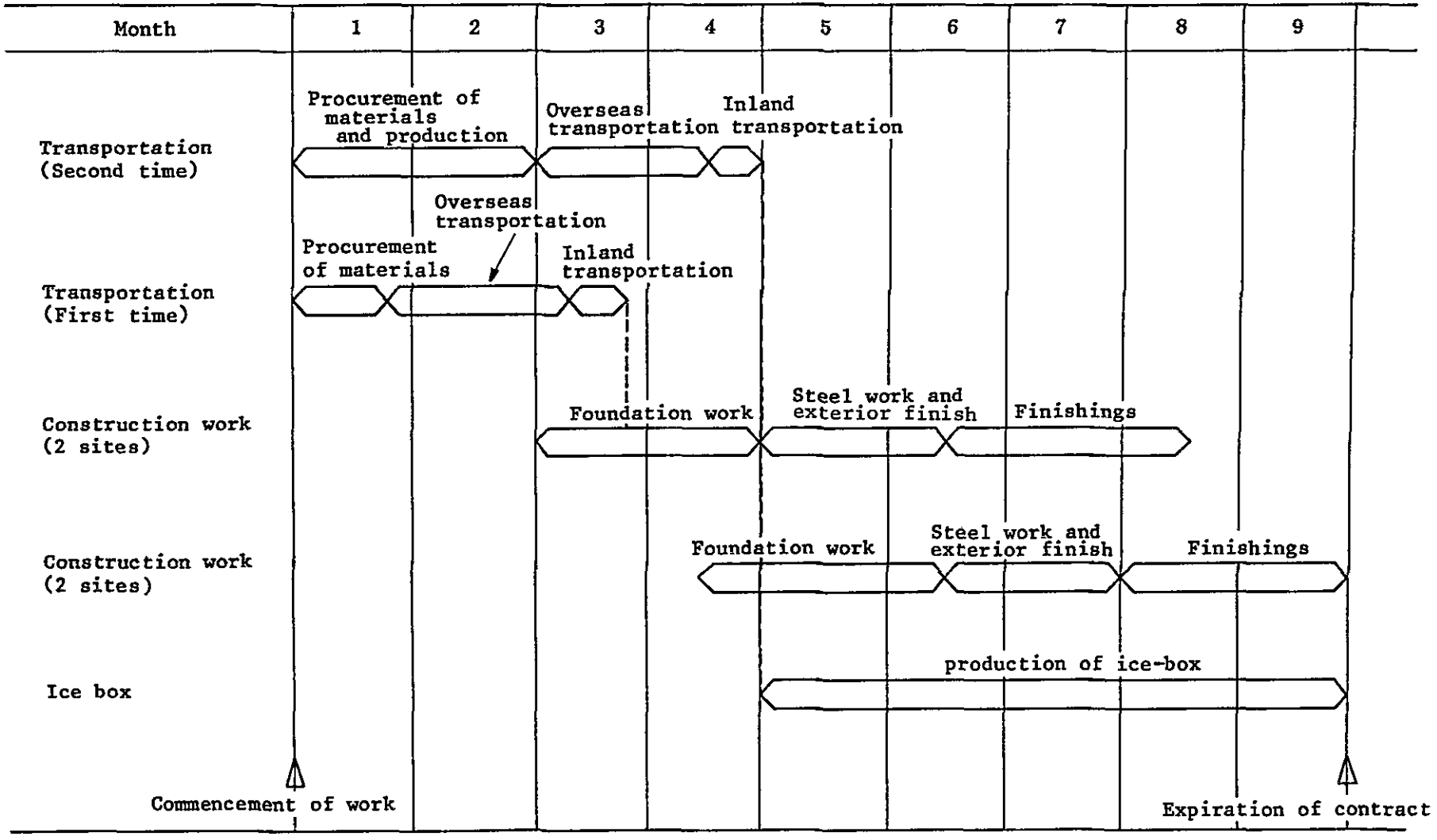
Seghe : Procure skilled labour from Gizo and unskilled labour around the site.

Ice boxes are ordered from the FRP manufacturer near Honiara, in response to the request from the Government of Solomon Islands.

This is intended to help the domestic industries in Solomon Islands to develop. Various materials needed to produce ice boxes are sent from Japan. The handover of ice boxes to the Government of Solomon Islands are carried out for several times in Honiara.

The vehicles are ordered from a Japanese manufacturer and are sent to Honiara by a liner. Being checked by the authority in Solomon Islands, the vehicles are handed over in Honiara.

5.2.3 Construction schedule



5.3 Scope of Work

Here is a list of works allotted to each party of Japan and Solomon Islands side.

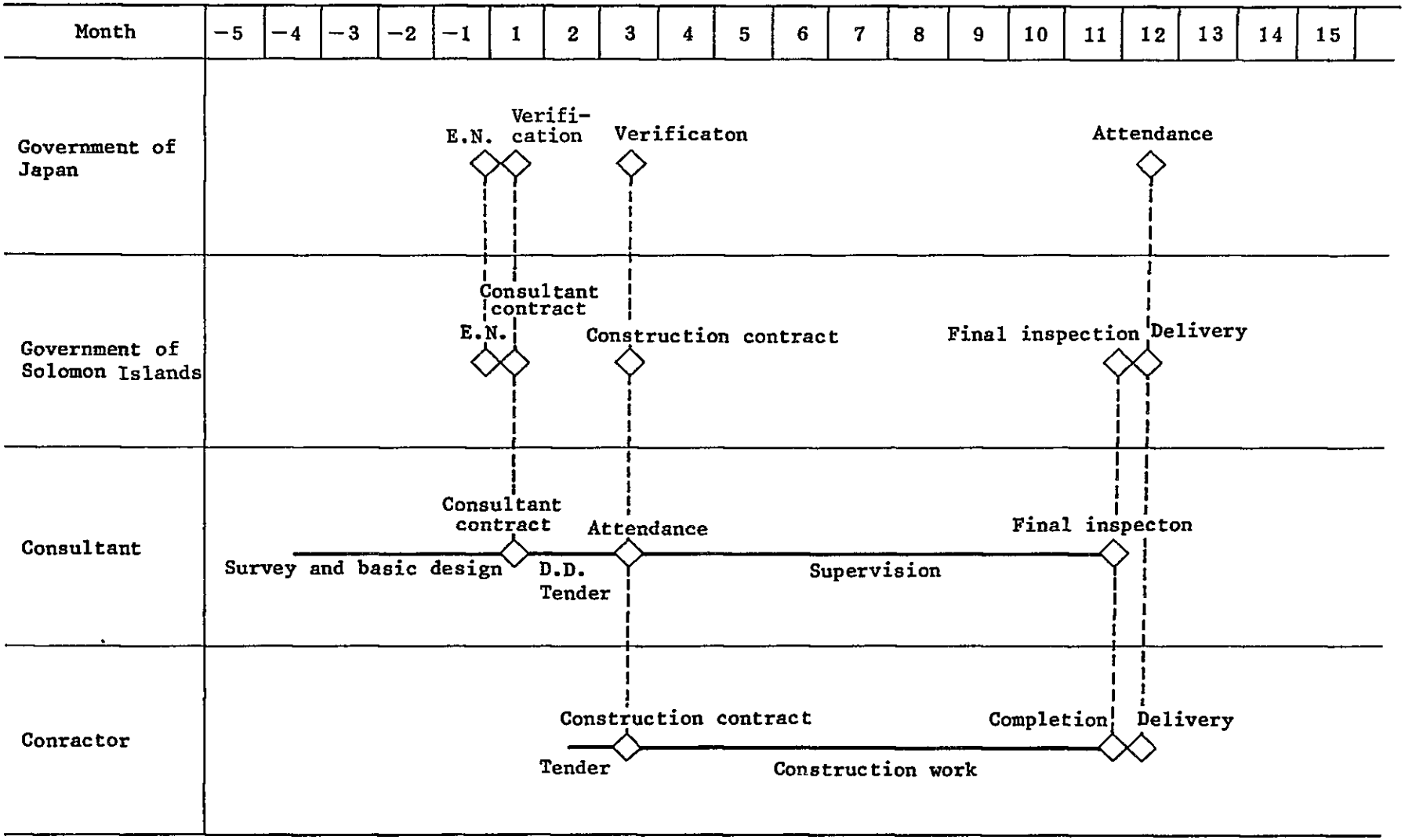
Japan's side

1) Construction of the 4 Fisheries Centres.
2) Installation of related machines and equipments except the ice-making machine.
3) Production of ice boxes and its freight to Honiara.
4) Production of vehicles and its freight to Honiara and being inspected in Solomon Islands.

Solomon islands' side

1) Preparation of 4 sites for the Fisheries Centres.
2) Setting of related furniture and fittings in the Centre.
3) Installation of the ice-making machine.
4) Freight of ice boxes from Honiara to each site.
5) Insurance of the vehicles and its freight to each site.

5.4 Project Schedule



5.5 Management and Maintenance

5.5.1 Maintenance plan

The Fisheries Centre shows its value to the utmost level only when it is properly managed and maintained. The building is designed to be weatherproof by using such materials as steel and polyvinyl chloride iron which reduce the maintenance cost. The daily cleaning inside the building would prevent any trouble.

Machines and equipments are to be inspected regularly by someone allotted among the office personnels. In case of finding any disorder, the troubled machine should immediately be stopped, checked and repaired if necessary. The following equipments need special care for its maintenance.

1) Water tank : To inspect the quality of the water regularly and clean the tank and change water twice a year.
2) Septic tank : To clean the tank and get rid of the dirt accumulated at the bottom once a year.
3) Generator : To check the amount of fuel and oil everyday and check the water in the radiator once in 3 days. To execute an overhaul of the body every 5,000 hours of run. To set up an operation schedule for saving fuel.
4) Ice storage bin: To check the gauge pressure and ampere of the compressor at all times.

The cleanings of water tank and septic tank can be conducted by the local worker, but the overhaul of generators and large-scaled repairs require skilled engineer. The following measures will be taken to meet this situation.

Lata : Engineers near the site who belong to the Provincial Government will take charge.

Lambi : Engineers stationed in Honiara who belong to the Provincial Government will be dispatched.

Tatamba: Engineers will be dispatched from Honiara by the Government of Solomon Islands.

Seghe : Engineers stationed in Gizo who belong to the Provincial Government will be dispatched.

5.5.2 Cost of management and maintenance

The following assumptions are made to estimate the cost of management and maintenance of the Fisheries Centre.

1) Ice is produced for 250 days a year, and one and a half times per day.
2) A generator runs 5 hours a day.
3) The personnel expenses of the Centre are paid by the Central or the Provincial Government. They are not included in the cost of management and maintenance.

Table 5.2 Management and maintenance cost per year (SI$)

	Lata	Lambi	Tatamba	Seghe	Total
Fuel and light expenses	5,900	7,200	8,300	8,300	29,700
Maintenance cost	1,000	1,000	1,000	1,000	4,000
Office and communication expenses	1,200	1,200	1,200	1,200	4,800
Running cost of vehicles and vessels	4,300	4,300	2,100	2,100	12,800
Total	12,400	13,700	12,600	12,600	51,300

The above management and maintenance cost is to be paied from the profit of the Centre. Annual profit is estimated at SI$ 12,000 to 16,000 per Centre.

20kg/person x 25 person/day x 250 day/year x SI$ 0.10/kg = SI$ 12,000
20kg/person x 32 person/day x 250 day/year x SI$ 0.10/kg = SI$ 16,000

* Profit of Selling fish : SI$ 0.10/kg
Running days of the Centre : 250 day/year
Amount of fish dealt a day (Average): 24 to 32 persons are involved.
20kg is dealt each.

6. EVALUATION OF THE PROJECT

The following describes the evaluation in the socio-economic view after implementing the project:

1) Increase of demands by increased fish catch in coastal areas

Fish catch in coastal areas of Solomon Islands is estimated at 1,344 MT (as of 1980), which is roughly equivalent to 6kg per head. This figure is rather small, compared to 65kg in Japan, 15kg in the U.S.A., 10kg in Indonesia and 7kg in Australia.

The low production rate, despite rich fishery resources in the coastal aeas, is due mainly to poor equipments, i.e., fishing boats (mostly unmotorized canoes) and the fishing method which uses poor fishing gears (mostly with manual operation).

This is also attributed to the lack of distribution and sales facilities such as ice-making machines, insulated boxes for ice and fish and transporting services (vessels, vehicles, etc.), and to insufficient training of fishermen on fishing technique, use of outboard motors and processing of fish.

Fish distribution and sales will become smooth and active, and the current "vicious circle" will be solved, when the project is implemented to supply rural fishermen with Fisheries Centres, ice boxes and fish carrying vehicles, as well as to execute the various training.

It is estimated that one centre can increase its production by 150 MT based upon the following calculation: 20kg (increase of fish catch per day by one fisherman) x 250 (working days per year) x 30 fishermen = 150 MT. Therefore, eight centres (including the four centres in 1982) would increase fish catch by 1,200 MT. per annum.

This will lead to the increase of demands by the people of this country, who are historically fond of fish.

Increase of coastal fish catch by 1,200 MT (as of 1984) will make total fish catch 2,544 MT, which is approximately equivalent to 10kg per head. This figure nearly catches up with those in other countries.

2) Increase of cash income and improvement of the living standard of rural fishermen

Leading an almost self-sufficient life, most of the rural fishermen, in the coastal areas catch fish for their family and they obtain daily materials by barter. This is largely because of the lack of facilities for production, distribution and sales, as described in 1).
Increase of fish catch by 1,200 MT per annum by the implementation of this project will make the total increase of cash income for fishermen by approximately SI$660,000 assuming that they sell fish to Fisheries Centre at a unit price of SI$0.55/kg. This is expected to improve their standard of living and their fishing equipments (i.e., boats, outboard engines, fishing gears and materials, etc.). This will promote the government's plan to incorporate the rural inhabitants including coastal fishermen into the currency economy, contributing to the Government's efforts for earlier realization of economic and social development in rural areas.

3) Improvement of Nourishment

Traditional foods for the people of Solomon Islands are mainly taros with fish and fruit. They depend on imports for supply of livestock products, which are relatively expensive, and cannot be used frequently. This has considerably reduced the level of nourishment.
Taking advantage of the aboundant fish resources, the Government has been making efforts to solve the problem of undernourishment resulting from insufficient animal protein.
Primary schools in Honiara use fish meat twice a week for school lunch.
Implementation of this project will lead to quantitative improvement of nourishment as described above; furthermore, the Fisheries Centre will play a central role in the production increase, widespread use and consumption growth of low-priced high-quality fish, making a significant contribution to improve the nourishment of the people.

4) Reduction of the Food Imports

Solomon Islands is comprised of many mountainous islands with limited arable land, and the country depends heavily upon imports for food. Beef and processed livestock products are mainly imported from Australia and New Zealand. When this project is implemented, low-cost high-quality fish products will be easily obtained by the people traditionally accustomed to eating fish and will be less dependent upon expensive food imports (meat, fish and processed food). For this purpose, the suppliers (Fisheries Centre and fishermen) must strive to reduce the cost of fish and fish products and to preserve perishable fish in high quality, thereby winning the trust of the consumers.

7. CONCLUSION AND PROPOSAL

Solomon Islands is making efforts to develop agricultural and fishery villages by promoting coastal fisheries, and to ensure increased opportunity for employment of the local people, increased cash income, improved techniques and low-priced high-quality protein food. For this country making such efforts, this project has been designed to realize the above targets by operating a series of facilities and the Fisheries Centres.

After evaluating the project from the socio-economic viewpoint and judging from the prospect of efficacy and feasibility, we honestly conclude that it is very effective to implement this project in this country.

This will greatly contribute to the friendship between Solomon Islands and Japan, as well as to the promotion of fishing industries and economic development in Solomon Islands.

To ensure effective operation of the Fisheries Centre, both Central and Provincial Governments are expected to further cooperate in the selection of proper personnel for the Centre, procurement of operation funds and training of the fishing people.

The maintenance and management of the equipment such as careful periodic inspection is important to guarantee effective operation.

DATA SECTION

1. Members of the Survey Team
2. Persons Concerned in Solomon Islands
3. Itinerary of the Survey
4. Minutes

1. Members of the Survey Team

Mr. Tatsuhiki IWASAWA	Leader	Deputy director, International Div., Oceanic Fisheries Dept. Fisheries Agency Ministry of Agriculture, Forestry and Fisheries
Mr. Takahiko KASAMA	Project Coordinator	Training Dept., Osaka International Training Center, Japan International Cooperation Agency
Mr. Takenobu MOHRI	Planning of Architecture	T. Mohri, Architect and Associates, Inc.
Mr. Jun UENO	Planning of Equipment	T. Mohri, Architect and Associates, Inc.
Mr. Takaomi NAKAMURA	Survey of Fisheries	Universal Marine Consultant Co., Ltd.

2. Persons Concerned in Solomon Islands

(Honiara)

Mr. James G. HERD	Chief, National Planning Division
Mrs. Sue CONNELL	Senior Planning Officer, Planning Division
Mrs. Corrie WICKHAM	Foreign Affairs Desk Officer, Min. of foreign Affairs and International Trades
Mr. Douglas H. GIBSON	Chief Fisheries Officer, Fisheries Division
Mr. Paul NICHOLS	Research Fisheries Officer, Fisheries Division
Mr. Holmes MATAO	Assistant Fisheries Officer, Fisheries Division
Mr. John ADIFAKA	Parmanent Secretary, Min. of Guadalcanal Province Affairs
Mr. Johnson VUNAGI	Senior Administrative Officer, Min. of Western Province Affairs.
Mr. Nathaniel WAENA	Parmanent Secretary, Min. of Makira , Temotu Province Affairs.
Mr. Peter TOBIRE	Senior Administrative Officer, Min. of Central, Isabel Province Affairs
Mr. Milmer TOZAKA	parmanent Secretary, Min. of Central Isabel Province Affairs
Mr. Nelson KILE	Fisheries Officer for Isabel Province
Mr. L.P. PALMER	Lands Division, Min. of Land, Energy and Natural Resources
Mr. Wilson DAUSABEA	Manager of SIACO
Mr. Takeshi UCHIDA	General Manager of Solomon Taiyo Ltd.
Mr. Masao NAKADA	Solomon Taiyo Ltd.
Mr. Yoshichika SAITO	Solomon Taiyo Ltd.

(Lata)

Mr. Lionel LAKA	Fisheries Officer, Fisheries Division
Mr. Eric GLEASON	Planning Officer, Temotu Province (Peace Corps.)

(Lambi)

Mr. David ROSALIO	Deputy Premier of the Province
Mr. Paul WAINUMI	Field Assistant
Mr. Wilfred DIDIVERA	Extension Assistant
Mr. Hohn FOLASI	Assistant Administrative Officer
Mr. Isac NODO	Assistant Fisheries officer, Fisheries Division

(Seghe)

Mr. Isaac DAKEI	Assistant Fisheries Officer, Fisheries Division

(Auki)

Mr. Isamu IWAHASHI	Fisheries Officer (volunteer)

(Tulagi)

Mr. Paul RIMOU	Assistant Fisheries Officer, Fisheris Division
Mr. Trever HOLMES	President of NFD
Mr. Kohichiro SATOH	Tulagi Base Manager, Solomon Taiyo Ltd.
Mr. Shigeo NAKAMURA	Cannery Manager, Solomon Taiyo Ltd.

(Embassy of Japan in Port Moresby)

Mr. Takashi SENGOKU	Ambassador
Mr. Yoshihiro KOYANAGI	First Secretary
Mr. Juroh CHIKARAISHI	Third Secretary

(Embassy of Japan in Honiara)

Mr. Shigeru KUROSAWA	former Charge d'affairs ad interim
Mr. Yohya KAWAMURA	present Charge d'affairs ad interim

notes: The charge d'affairs ad interim was changed during this survey.

3. Itinerary of the Survey

Date	Day	Itinerary	Contents of Survey
Oct.31	Sun.	CX-501 PX-911 Tokyo —— Hong Kong ——	
Nov. 1	Mon.	—— Port Moresby	Formal visit to the Embassy of Japan in Port Moresby
2	Tue.	PX-031 Port Moresby —— Honiara	Visit ot Fisheris Division
3	Wed.	Honiara —— Lambi —— Honiara	Formal visit to the Embassy of Japan in Honiara, Visit to Solomon-Taiyo, Field survey in Lambi
4	Thu.	Honiara —— Auki —— Honiara	Survey of Fisheries Centre in Auki
5	Fri.	Honiara	Formal visit to the Government of Solomon Islands, Meeting at Fisheries Division
6	Sat.	Honiara —— Seghe —— Honiara	Field survey in Seghe
7	Sun.	Honiara	Data arrangement
8	Mon.	Honiara —— Fera —— Buala	Observation in Buala
9	Tue.	Buala —— Tatamba —— Fera —— Honiara	Field survey in Tatamba
10	Wed.	Honiara	Discussion about Minutes, Hearing of marketing of fish in Fisheries Division
11	Thu.	Honiara Lata	Field survey in Lata
12	Fri.	Lata —— Honiara	Survey of rural fisheries village in Santa Cruz
13	Sat.	Honiara —— Tulagi —— Honiara	Visit to the factory of Solomon-Taiyo, Visit to NFD
14	Sun.	Honiara	Data arrangement
15	Mon.	Honiara	Exchange of the Minutes at Prime Minister's Office, Collection of data on fisheries at Fisheries Division, Survey of SIACO, Party at Mendana Hotel
16	Tue.	Iwasawa Kasama PX-030 Honiara —— Port Moresby Another 3 persons Honiara	Survey on construction materials in Honiara, Survey on condition of construction at Public Works Division
17	Wed.	TE-033 Port Moresby—Hong Kong Honiara	Formal visit to the Embassy of Japan in Port Moresby (Iwasawa and Kasama) Discussion about the problem of Tatamba site, Visit to Housing Authority
18	Thu.	CX-450 Hong Kong—Tokyo Mohri Honiara—Kirakira —Honiara	Observation of Fisheries Centre in Kira Kira, Survey on Construction at Public Works Division, Observation of construction site
19	Fri.	Mohri Honiara —— Gizo —— Honiara Another 2 persons Honiara	Observation of Fisheries Centre in Gizo, Survey on condition of construction at Electricity Authority
20	Sat.	Honiara	Data arrangement
21	Sun.	Honiara	Data arrangement
22	Mon.	Honiara	Disccusion about the problem of Tatamba Site, Data collection at Fisheries Division
23	Tue.	PC-030 Honiara —— Port Moresby	
24	Wed.	TE-033 Port Moresby —— Hong Kong	Formal visit to the Embassy of Japan in Port Maresby
25	Thu.	CX-450 Hong Kong —— Tokyo	

After 19th of November, only 3 members (Mohri, Ueno and Nakamura) remained in Solomon Islands.

4. Minutes

The basic design study team had conferences with the related officials of the Government of Solomon Islands, and the both parties reached an agreement on basic items. As a result, the minutes were signed by Mr. Tatsuhiko IWASAWA, the Japanese study team leader, and Mr. James G. HERD, the chief of National Planning Division in Honiara, the capital of Solomon Islands, on November 15, 1982.

Minutes of Discussion

on

Rural Fisheries Development Project

in Solomon Islands

In response to the request made by the Government of Solomon Islands for Rural Fisheries Development Project in Solomon Islands (hereinafter referred to as "the Project"), the Government of Japan has sent, through the Japan International Cooperation Agency (hereinafter referred to as "JICA"), a team headed by Mr. Tatsuhiko Iwasawa, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries, to conduct a basic design study for 22 days from 2 November, 1982. The team carried out a field survey, held a series of discussions and exchanged views with the authorities concerned.

As the result of the study and discussions, both parties have agreed to recommend to their respective Governments to examine the results of the survey attached herewith towards the realization of the Project.

15 November, 1982

Mr. Tatsuhiko Iwasawa
Team Leader
The Japanese Survey Team
JICA

Mr. James G. Herd
Chief
National Planning Division
Prime Minister's Office
Solomon Islands Government

ATTACHMENT

1. The objective of the Project is to provide Fisheries Centres and equipment for the Fisheries Development Project (hereinafter referred to as "the Centres").

2. The proposed sites of the Project is the land acquired by the Government of Solomon Islands (hereinafter referred to as "the Project Site"). The Project Sites are shown in Annex I.

3. The Centre will undertake its activities with the following basic objectives:

(1) to train local fishermen in small groups in basic fishery techniques;

(2) to collect caught fish from the local area to be sold to consumers on the spot and to install ice-making machines to supply ice to fishermen's ice-boxes, to enable fish to be transported to urban areas;

(3) to provide office space for rural Fisheries Officers to execute the rural fisheries development project and manage the fisheries centre;

(4) to accommodate rural fishermen while undertaking training;

(5) to accommodate volunteers and Government Fisheries Officers who will be engaged in the training of fishermen and other project activities.

4. The Japanese Survey Team will convey to the Government of Japan the desire of the Government of Solomon Islands that the former takes necessary measures to co-operate in implementing the Project and providing the centres and other items listed in Annex II within the scope of Japanese economic cooperation programme in grant form.

5. The Government of Solomon Islands agree to the conditions as listed in Annex III subject to the extension of grant assistance by the Government of Japan to the Project.

6. Both sides confirm that the Japanese Survey Team explained Japan's Grant Aid Programme and that this was understood by the Solomon Islands Government.

Annex I

The components of the project in priority order are as follows:

1) 4 Fisheries Centres at the following sites (Refer to figures 1, 2, 3 and 4)

   a) Lata, Makira/Temotu Province

   b) Lambi, Guadalcanal Province

   c) Tatamba, Ysabel Province

   d) Seghe, Western Province

The above order is only indicative and will need confirmation by the National Planning Council.

2) Equipment

   a) 250 ice-boxes

   b) 2 vehicles

3) Other requests

   a) Furniture in connection with the Centres

   b) Outboard engines

   c) Engine tool kits

   d) Radio communication equipment

   e) Word processer

   f) Assorted fishing gear

Annex II

Items requested by the Government of Solomon Islands the cost of which will be borne by the Government of Japan

1) Centres

(Refer to figure 5)

a) Training room
b) Marketing Area
c) Office
d) Fishermen's Room
e) Accommodation Facilities

2) Equipment

a) Ice-boxes
b) Vehicles

3) Others

a) Furniture in connection with the Centres
b) Outboard engines
c) Engine Tool Kits
d) Radio communication equipment
e) Word processer
f) Assorted Fishing Gear

ANNEX III

Following arrangements are required to be taken by the Government of Solomon Islands.

1. To secure a lot of land necessary for the construction of the Centres and to clear, fill and level the site as needed before the start of the construction.

2. To provide facilities for distribution of electricity, water supply and other incidental facilities outside the sites of the Centres.

3. To ensure prompt unloading and customs clearance at ports of disembarkation in Solomon Islands.

4. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Solomon Islands with respect to the supply of the products and the services under the verified contracts.

5. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Solomon Islands and stay therein for the performance of their work.

6. To maintain and use properly and effectively the Centres constructed and equipment purchased under the grant.

7. To bear all the expenses, other than those to be borne by the grant, necessary for the construction of the facilities.

8. To undertake incidental civil works such as landscaping and fencing, if needed.

Figure 1

Lata

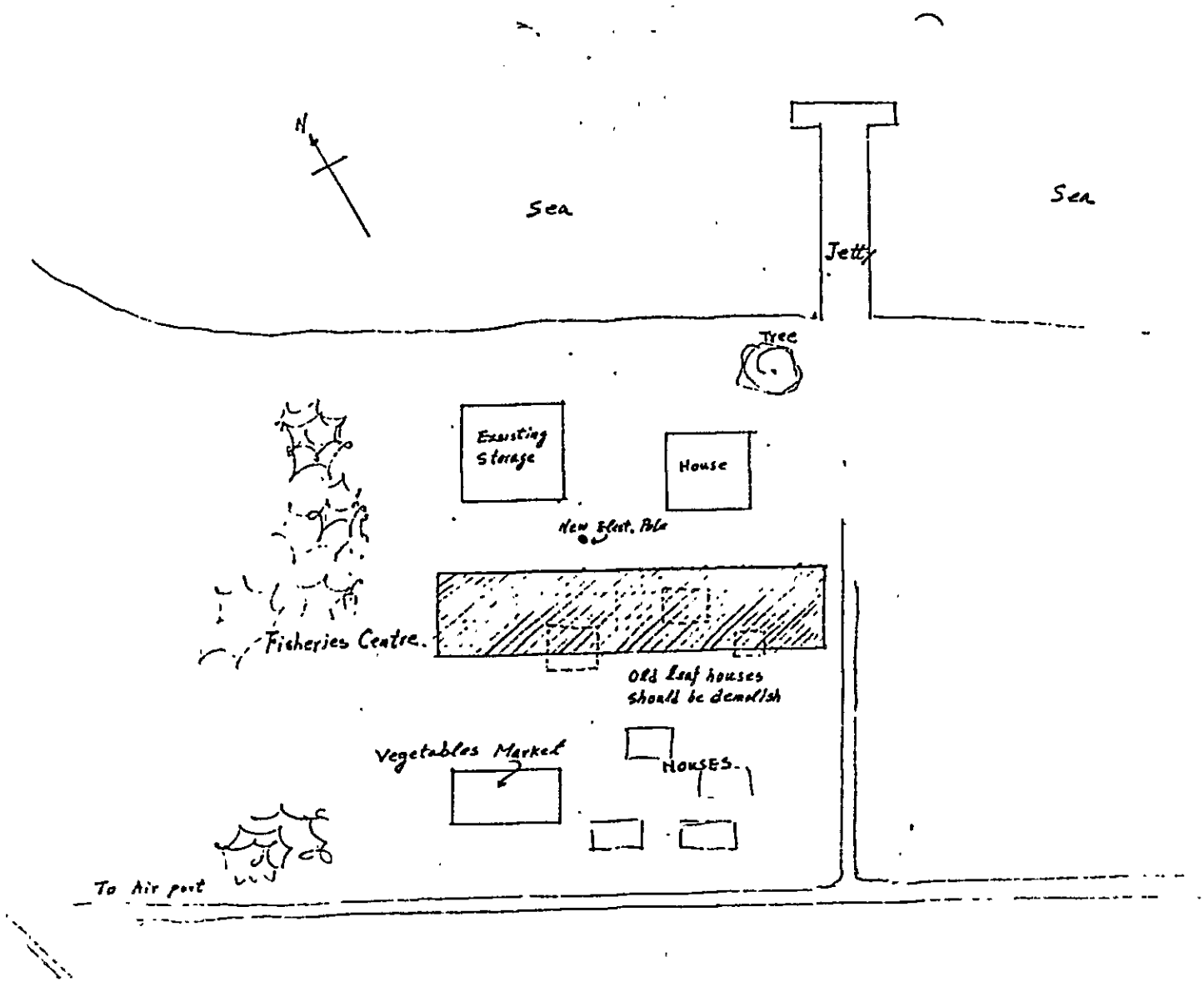


Figure 2

Lambi

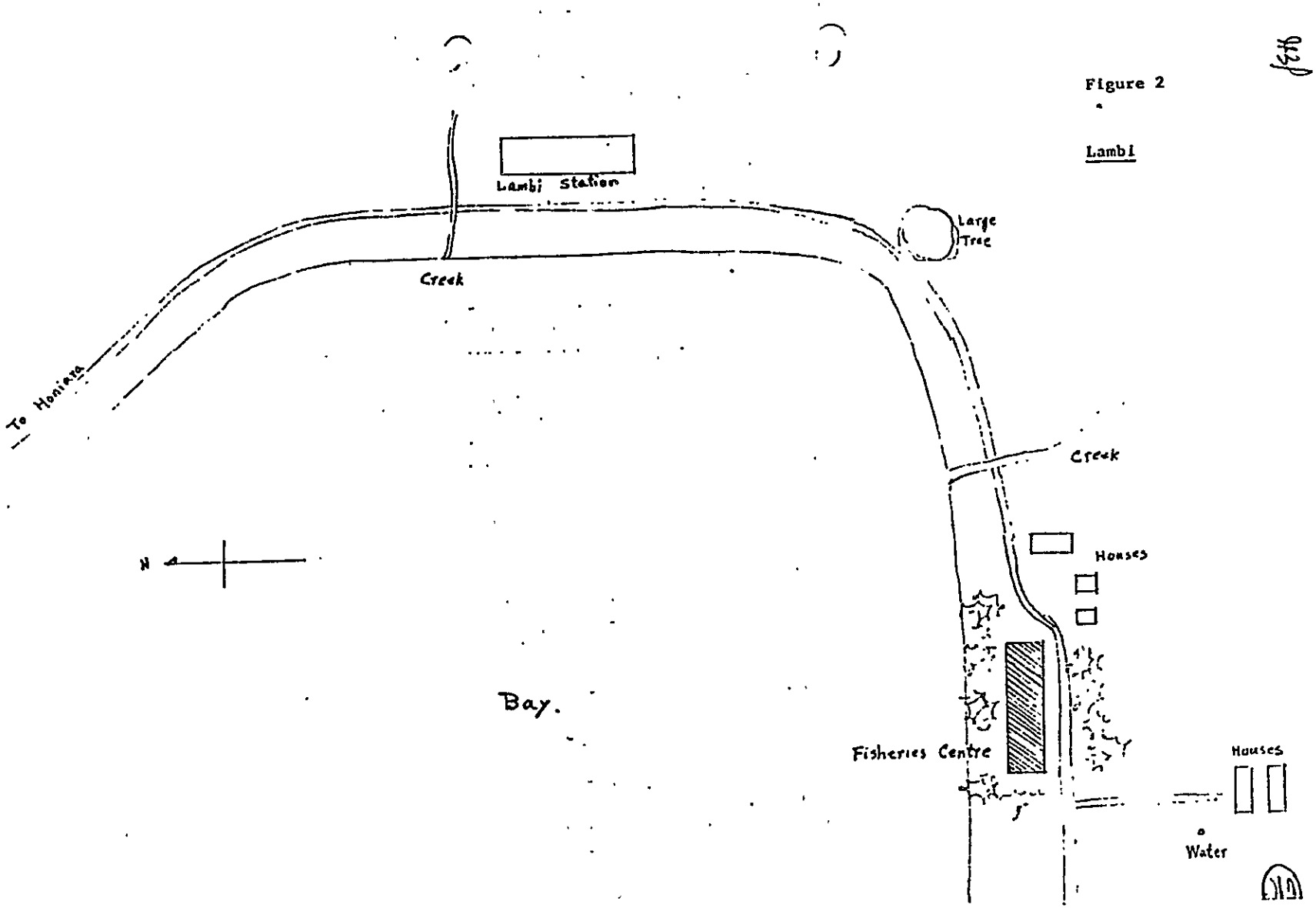


Figure 3

Tatamba

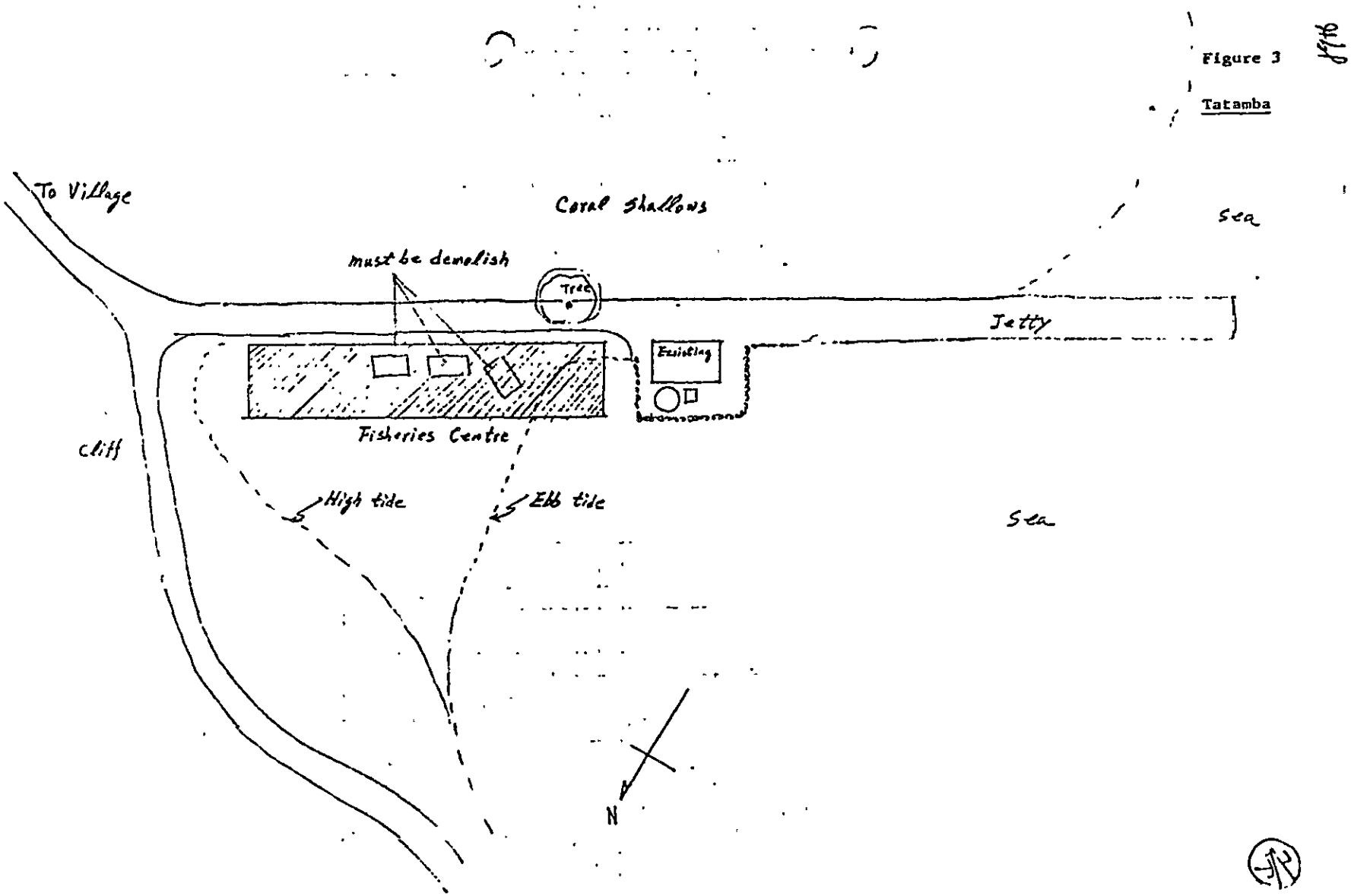


Figure 4

Seghe

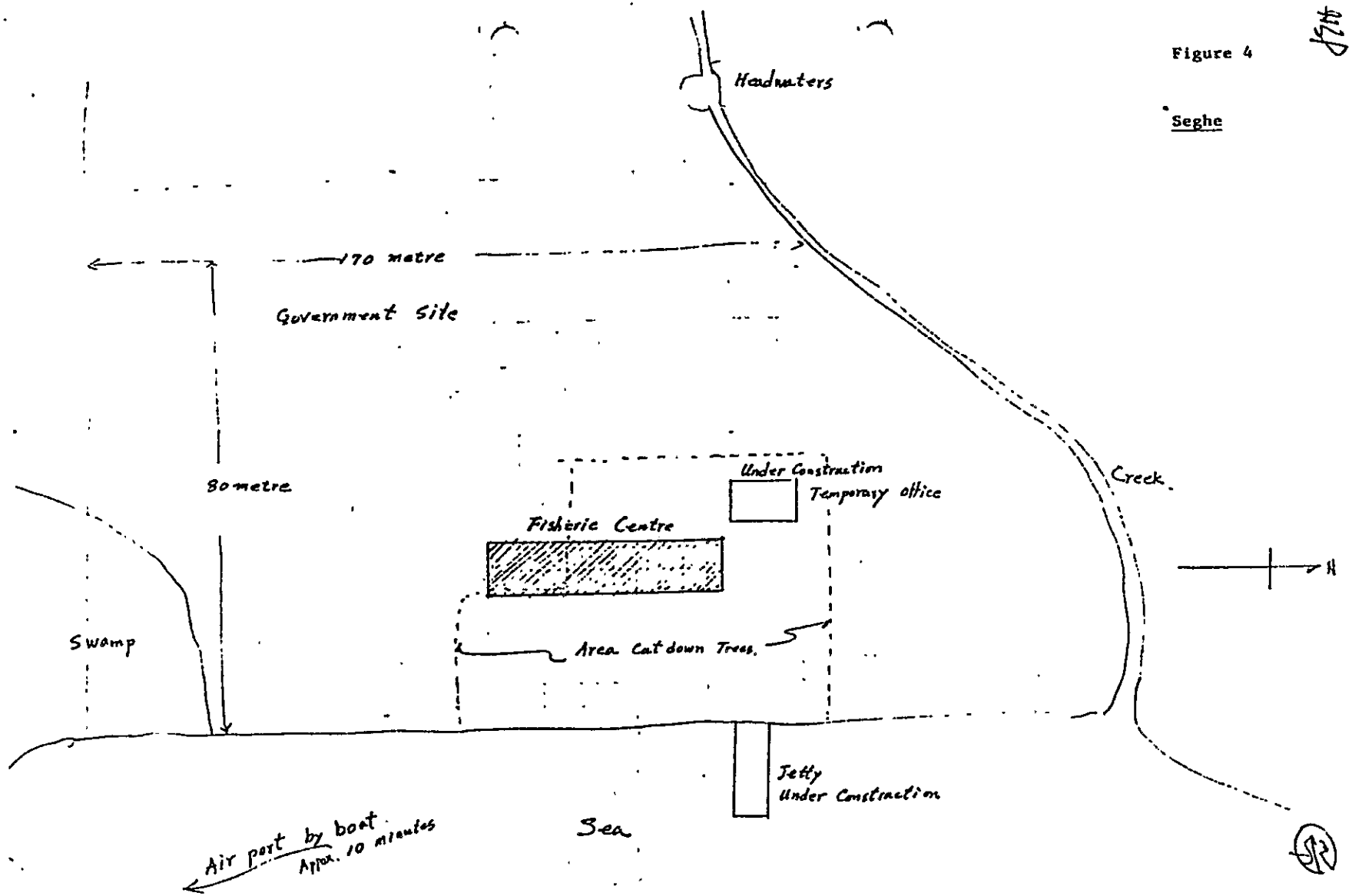
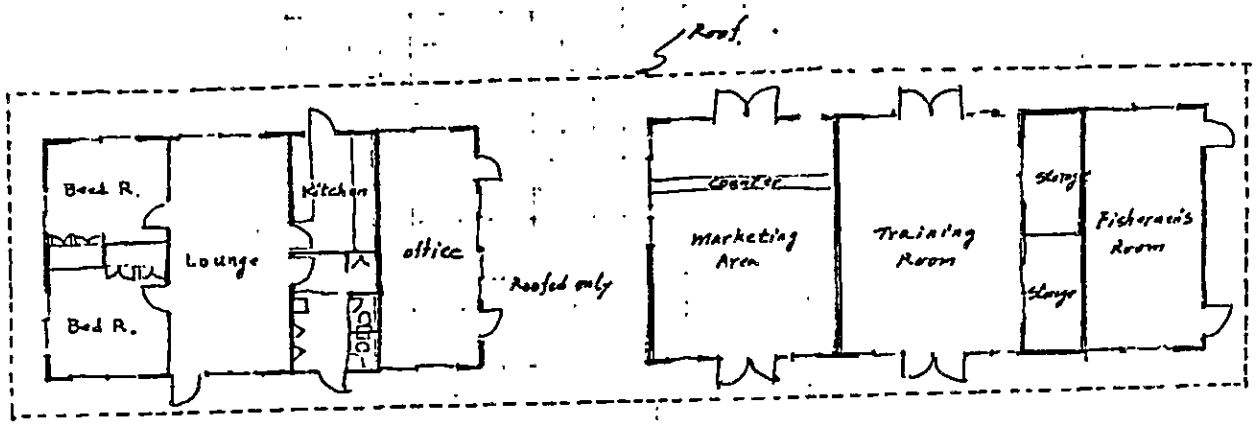


Figure 5



Standard Floor Plan scale 1:200

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