

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

(1) Basic Concept

- 1) For the implementation of the Project, after the Exchange of Notes(E/N) is signed between the Government of Japan and the Government of Palau, a contract for undertaking consulting services will be concluded between the Government of Palau and the Japanese Consulting Firm.
- 2) The Consulting Firm will prepare all of the tender documents such as the drawings of the fishing port facilities, specifications, cost estimations, and condition of contract which will be required for the tender and the construction contract. After the approval of these documents by the Government of Palau, the contractor for this project will be selected among Japanese construction companies following the procedure of pre-qualification and the tender.
- 3) The construction work will be performed by the selected construction company in accordance with the construction contract concluded between the Government of Palau and the construction company.
- 4) The construction period is expected to be 10(ten) months considering of the scale and contents of the Project as well as the site conditions.

(2) Implementation Concept

1) Consideration of Fishery Activity and Travel Facilities

The construction works in the Project will be consisted of construction of pier and dredging of the access channel that are the port infrastructure linking Peleliu State and Koror State. Therefore, should be considered existing fishery activities and safe by navigation of the boats. Furthermore, a temporary jetty is necessary to be installed for temporary use during the construction period avoiding to impair the functions of fish catch landing, embarkation/disembarkation of passengers loading and unloading of cargo.

2) Environmental Preservation

The maritime area in the vicinity of the project site has low water transparency. However, careful attention for the coral reefs in the vicinity of turning basin and access channel will be taken in the dredging works to avoid diffusion of turbid materials to protect the natural environment.

As monitoring survey during the construction period, sounding of the adjacent bathymetry should be carried out before commencement of the work and at the time of completion.

3) Construction and Procurement Policy

In consideration of the environmental aspects of the project site and transportation of construction materials and machinery / equipment, the working volume in the project site volume will be minimized in construction of the pier by adopting the use of pre-cast segments that can be made separately in Koror State.

Under the limited availability of construction machinery and equipment, some construction machineries and working vessels procured locally are very expensive. They will be procured in Palau only when the cost is cheaper than procuring them from Japan or other third countries. As for general labor, they will be hired from local market.

(3) Executing Agency in the Government of Palau

Executing agencies, which will be involved in the Project under the Government of Palau are described below,

1)Responsible Agency:

Ministry of Resources and Development

2)Executing Agency:

Ministry of Resources and Development

3)Implementation Agency:

Bureau of Marine Resources

4)Operation Agency

Peleliu State Government

2-2-4-2 Implementation Conditions

(1) Consideration of Construction

1) Consideration of and Travel Facilities

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3) Construction Plan

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of the pier by adopting the use of pre-cast segments that can be made separately in Koror State.

(2) Construction condition

1) Construction Company

In Palau, there are several construction companies, including foreign-capital contractors. They are capable for small-scaled maritime construction works, on-land construction works, building works, etc., but they do not have the capability to execute large-scaled maritime construction works included in this Project, however it will be quite possible for the Japanese construction company to contract them as subcontractors.

2) Construction Machinery and Equipment

Although several construction companies in Palau have construction machineries and work vessels, such as cranes, backhoes, dump trucks and other general construction machineries and equipments as well as barges and tugboats, their numbers are very limited. Local procurement of the most general construction machinery is possible. But, if their prices are expensive, the consideration will be given to procured from Japan or third countries in order to reduce construction cost. In the maritime construction work, vessels of backhoe dredgers, big-power breaker, and long arm type bucket are not available in Palau, therefore these will have to be procured in Japan or third countries.

In a selection of heavy construction machine for construction of pier, the special consideration should be given to the residential environment in the vicinity of the construction site from the aspects of noise and vibration.

Table 2.2.4.2(2)-1 Selection of Procurement (Construction Machinery)

Machine & Equipment	Local procurement	From Japan or Third Countries
Backhoe dredger		
Breaker(3,000kw)		
Tugboat(D700ps)		
Backhoe(1.0m3)		
Crawler crane(100t)		
Crawler crane(50t)		
Bulldozer(15t)		
Dump truck(10t)		
Trailer(20t)		
Divers Boar		

(Remarks: Above selection is studied by the Consultant at basic design stage. Actual selection will be decided by the Contractor at the construction stage.)

3) Construction Materials

The construction materials required by the Project will be concrete aggregate, cement, water, re-bars, riprap, etc., which are mainly used for extension of the pier. Such construction materials are not available in Peleliu State. They will have to be delivered from Koror State. Furthermore, in order to minimize the construction works in the project site, the concrete blocks of the pier structure will be made as pre-cast in Koror State and delivered by sea transportation.

Table 2.2.4.2(2)-2 Selection of Procurement (Construction Materials)

Material	Local Procurement	From Japan or Third Counties
Cement		
Concrete		
Rubble		
Re-bar		
Gasoline		
Aggregate		
Rubber Fender		
Bollard		
Navigation Aids		

(Remarks: Above selection is studied by the Consultant at basic design stage. Actual selection will be decided by the Contractor at the construction stage.)

4) Labor

Skilled labors can not be hired locally in Palau. As for all kinds of construction works comprising dredging of coral reef areas using backhoe dredgers for the pier construction, it is necessary Japanese skilled experts and technicians to instruct local labors. General labors and unskilled labors can be hired from local construction companies and others.

Table 2.2.4.2(2)-3 Selection of Employment

Occupation	Local	From Japan or Third Countries
Foreman		
Skilled Labor		
Concrete Worker		
Reinforcing bar fixer		
Heavy machine Operator		
Mechanic		
Diver		

Occupation	Local	From Japan or Third Countries
Ship Crew		
Carpenter		
Driver		

(Remarks: Above selection is studied by the Consultant at basic design stage. Actual selection will be decided by the Contractor at the construction stage.)

5) Safety Control

The construction in the Project will be carried out along the existing access channel and existing port facility which is one and only one facility in Peleliu State. Therefore temporary jetty will be constructed adjacent to the existing jetty so as not to affect the current fishing and commercial port activities during the construction period. Because of that, it will be necessary to pay a particular attention to safety considerations during dredging works, pier and other marine construction works so as not to interfere navigation of fishing boats and cargo boats.

The hinterland of the adjacent land area can be used as a dumping site for dredged and excavated materials. The Peleliu State Government can make use of such materials in the future for filling works, leveling of roads and other use which will be approved by EQPB.

(3) Requirements for Construction Works

- 1) In the marine area around North Dock, domestic wastewater discharges and the water is deteriorated, and the environment turns worse. Regarding water turbidity generated in the dredging work, the silt protectors equipped with the dredger will be adopted as indicated in Figure 2.2.4.2(3)-1 as the measure for prevention of turbidity diffusion.
- 2) Bedrock was confirmed around beacon R16 - R20. Bedrock will be dredged by Backhoe dredger. However, underwater blast may be necessary when digging by Backhoe is not possible.
- 3) Silt protector and air curtain to prevent diffusion of the turbidity will be installed when the is underwater blast will be carried out.
- 4) The Ministry of Resources and Development will be requested to get necessary environmental permission by EQPB.
- 5) The consultant instructs to the contractor to report to E.Q.P.B according to the environmental permission before underwater blast carries out.
- 6) Appropriate temporary construction work plans, construction implementation plan and work scheduling plans must be formulated taking local natural conditions into full account, particularly sea conditions such as stormy wave condition.

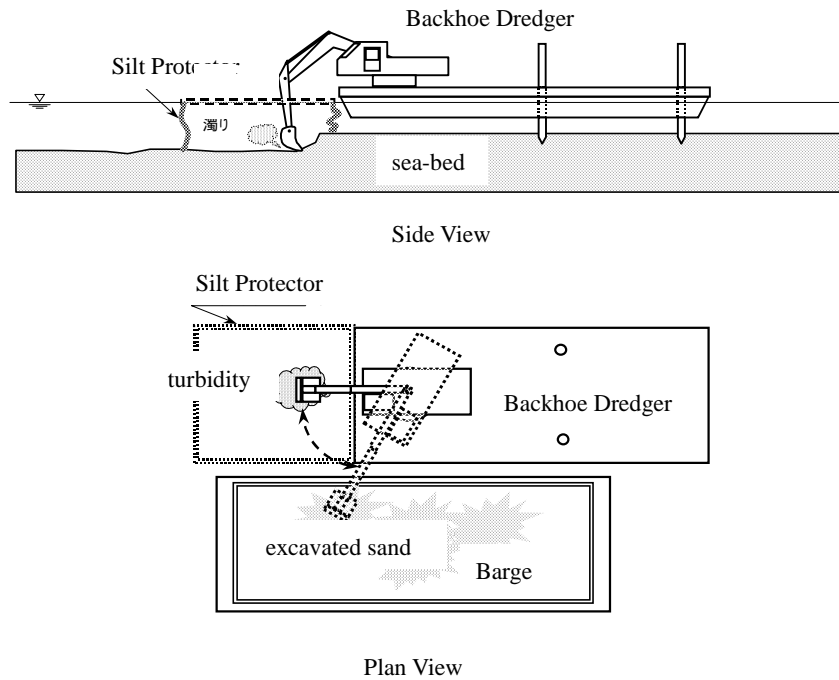


Figure 2.2.4.2(3)-1 Image of Dredging Work with Silt Protector

- 7) Dispatching the Japanese staffs and technical experts will be planned with the appropriate number of persons, timing and duration following the progress of the construction works.
- 8) Sounding survey to monitor the bathymetric change will be carried out by the construction company.

2-2-4-3 Scope of Works

The scope of works allocated to the Government of Japan and the Government of Palau are as follows:

(1) Scope of Works Undertaken by the Government of Japan

- 1) Dredging of Access Channel and Turning Basin
- 2) Extension of Pier
- 3) Installation of Navigation Aids

(2) Scope of Works Undertaken by the Government of Palau

- 1) Provision of Construction Yard and Dumping Site in Peleliu State and Temporary Construction Yard in Koror State
- 2) Provision of Dumping Sites for Disposed Dredged Materials and Excavated Materials generated by Construction Works in Peleliu Island
- 3) To carry out the environmental impact assessments required for receiving construction permits, including permits for the dredging and other maritime construction works.

- 4) Road repair after construction vehicles run, if necessary.
- 5) Providing the boundary fence around the temporary construction yard.

2-2-4-4 Consultant Supervision

Policies and works of Construction Supervision by the Consultant reflecting the Grant Aids scheme are as follows.

(1) Construction Concepts

- 1) Control of the work progress in accordance with the construction schedule and with maintaining close contact and communication between the responsible organizations of both counties.
- 2) Provision of prompt and appropriate guidance and advices being essential for the contractors as to the construction of facilities in compliance with the drawings and specifications.
- 3) Provision of instruction for maximum adoption of local materials and local construction methodology.
- 4) Necessity of technology transfer for construction method and engineering to exert its effect of the grant aid project.
- 5) Provision of adequate instruction and advices to maintenance of delivered facilities and equipment for smooth operations.

(2) Supervisory Works

1) Assistance on Contracting

Providing assistance on selection of contractor, determining the type of contract, drafting contract documents, evaluating bill of quantities and witnessing contract awarding.

2) Evaluation and Approval of Shop Drawings

Evaluating and approving shop drawing as well as materials and equipment proposed and submitted by contractor.

3) Instruction to Construction Works

Reviewing construction plans and schedule, etc., providing instructions to contractor and reporting the progress of works to the client.

4) Assistance in Procedure of Payment

Evaluation and approval of the bill for the payment to the contractor during the work will be carried out taking the progress of the work into account and upon the completion of the work.

5) Inspection and Witness

Inspection where necessary work is in progress and instructions to the contractor. Upon the confirmation of completion of the works and fulfillment requirements of the contract, witness the delivery of the objects of the contract and the client's acceptance to complete obligations.

Provision of reports to the Government of Japan in relation to the progress of the works, payment procedures and delivery of completed facilities.

2-2-4-5 Procurement Plan

In the process of procuring materials and equipments required for the Project, special attentions will be paid as to the followings.

(1) Procurement Concepts

Priority should be given, whenever possible, to procurement of local available materials and equipments, which are examined the qualities including the inspection method, supply condition to meet the necessary capacity, delivery date and quantities. Procurement from Japan should be minimized considering cost and disadvantages due to delivery time.

1) Procurement from Japan

A detailed procurement and transportation plan must be prepared well in advance for the material and equipments to be procured from Japan. In general, this will take more time for manufacturing, packing and shipping.

2) Local Procurement

Rubble stones and aggregates, which can be locally procured should be carefully examined as to the quality and transportation capability.

3) Cost

The cost is an important factor to be taken into account in the selection of materials from local sources, neighboring countries and Japan. It is necessary to confirm whether the prices of procurement from Japan include the charges for packing, transportation, insurance and the port charges, while import and local taxes are to be exempted.

(2) Procurement Items

On the basis of the above principles and rules, the following plans will be established preliminary for the procurement of the construction materials and equipment.

Table 2.2.4.5(2)-1 Summary of Selection of the Procurement Items

	Local Procurement	Procurement From Japan or third countries
Materials	aggregate, sand, cement, re-bar, riprap, etc.,	fender, bollard, Navigation Aids, etc.,
Construction Machinery	barges, tugboats, backhoes, trailers, bulldozer, crawler crane, trucks, dump trucks, etc.,	breaker(3,000kg), crawler crane (100t), backhoe(2.0m ³)

(Remarks: Above selection is studied by the Consultant at basic design stage. Actual selection will be decided by the Contractor at the construction stage.)

2-2-4-6 Quality Control Plan

(1) Quality Control of Construction Material

The construction materials used for the Project will be managed according to “Common Specification for Fishing Port Construction” published by National Fishing Port Association, and “Common Specification for Port and Harbor Construction Works” published by Association of Port and Harbor and shall be used after receiving prior manufacturing approval.

(2) Quality Control of Concrete Mixing

Mixture of the concrete and mortar, which are used for this construction will be determined by the test mixing of concrete contents. In the trial mixing, the strength of the concrete, mixing time and method of casting will be carefully examined.

Moreover, data sheets of necessary concrete test results, control tables for concrete strength management analysis and control figures (X-R management figure etc.) will be prepared. Referring to these test results, quality control of concrete will be managed and performed.

2-2-4-7 Implementation Schedule

Implementation of the Project under the Japanese Grant Aid Program will proceed in the following manners.

After the Exchange of Notes (E/N) concluded between the two countries, the Japanese consulting firm will be appointed by the Government of Palau and the consulting agreement will be concluded between the said government and the consulting firm. The Project will be implemented in accordance with the conditions stated in the E/N.

(1) Preparation of Detailed Design Documents

After the consulting agreement will be concluded between the executing agency of Palau and Japanese consulting firm, the consultant will start detailed design when

the agreement will be verified by the Government of Japan. In the detailed design stage, the tender documents consisting of design drawings, technical specifications, and instruction to tenderers, will be prepared on the basis of the Basic Design Study Report. In the meantime, consultations will be held with the Government of Palau regarding the details of the port facilities and the accessories. And eventually the tender documents will be approved by the Government of Palau.

About 2.5(two and half) months will be required for the detailed design.

(2) Execution of the Tender and Construction Contract

The contractor (the Japanese construction company) who will be involved in the construction of the project facilities will be selected through the tender. The tender procedures will be in the order of : the notification, the invitation to tender, the pre-qualifications, the distribution of tender documents, the tender, the evaluation of the tender, designation of the contractor and award of construction contract.

The whole procedures will take 2(two) months.

(3) Execution of Construction Work

Construction Work will start after the award of the contract and verification by the Government of Japan. The construction period is expected about 10(ten) months considering the scale and size of the Project and local construction conditions. However, unforeseen situations, which might occur in the course of the work, are excluded. Table 2.4.6(3)-1 shows the project implementation schedule from conclusion of Exchange of Notes(E/N) to completion of the construction works.

Table 2.2.4.7(3)-1 The Project Implementation Schedule

Year	2006												2007			Remarks	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
Detailed Design Stage	■																Consultant agreement, Survey
		▬															Design/Preparation of Tender Documents
			▬														Approval of Tender Documents
				▬													Tender Process
					▬												Tender, Construction agreement
Procurement and Construction Stage							▬										Mobilization
						▬											Preparation and Temporary Work
								▬									Dredging Work
									▬								Making Pier Blocks (KOROR)
										▬							Pier/Rampway Work (PELELIU)
											▬						Navigation Pole Work (PELELIU)
												▬					Cleaning (KOROR/PELELIU)

Working term (about 10 month)

▬ : Work in Japan

▬ : Works at Site

▬ : Field Survey

2-3 Obligations of Recipient Country

The obligations of the Palau Government are confirmed by the Minutes of Discussions during the Basic Design Study.

- (1) To carry out the environmental impact assessments required for receiving the construction permits, including permits for the dredging and other maritime construction works, and accomplishment of the formalities for obtaining them.
- (2) To secure land for the project site prior to commencement of the construction work.
- (3) To secure temporary construction yard in Koror State.
- (4) To secure construction site and necessary dumping sites with removal of trees and other obstacles for dumping of dredged and excavated materials in Peleliu Island.
- (5) To ensure all the expenses and prompt execution for unloading, customs clearance at the ports of disembarkation and internal transportation of the products purchased under the Grant Aid.
- (6) To commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the “ Authorization to Pay “ and other payment commissions.
- (7) To exempt Japanese nationals from customs duties, internal taxes and fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- (8) To provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary.
- (9) To bear all the expenses other than those covered by the Grant Aid, necessary for the Project.
- (10) Palau side shall bear to provide temporary construction yard, its boundary fence, road maintenance and banking arrangement and authorization to pay. The expenses are described below.

Table 2.3-1 Expenditure of Palau Side

Content	Quantity	Cost(US\$)	Cover
1.Maintenance of Temporary Construction Yard	23,000m ²	18,000	Bureau of Marine Resources
2.Boundary Fence	1km	1,000	
3.Road Maintenance	1km	1,000	Public Works
4.Banking Arrangement and Authorization to Pay		5,500	Bureau of Marine resources
Total		25,500	

2-4 Project Operation Plan

(1) Operation Organization

After implementation of the project comprising a pier facility, an access channel and navigation aids, Ministry of Resources and Development and Peleliu State Government will be responsible for operation and maintenance of the granted facilities. The organization charts of Ministry of Resources and Development and Peleliu State Government are described as below.

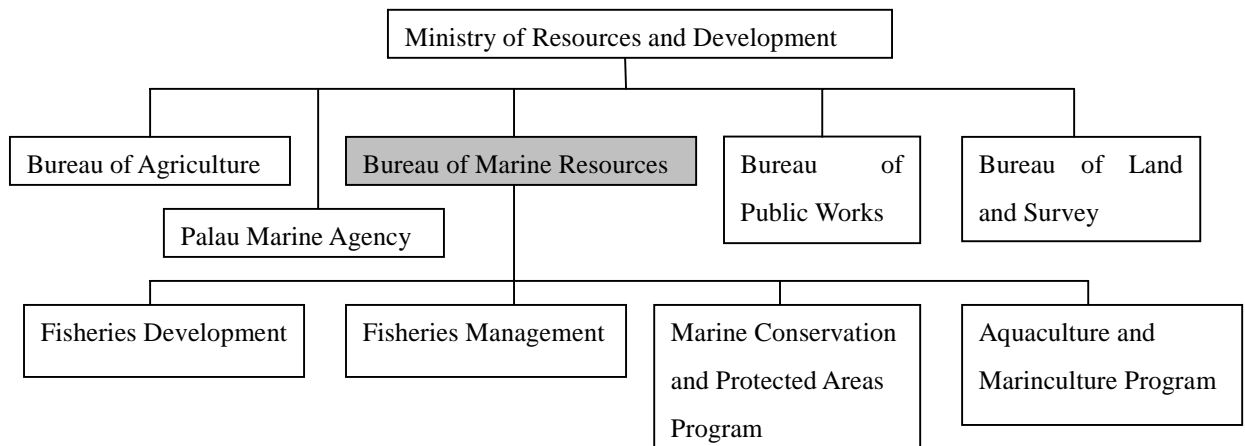


Figure 2.4(1)-1 Organization Chart of Ministry of Resources and Development

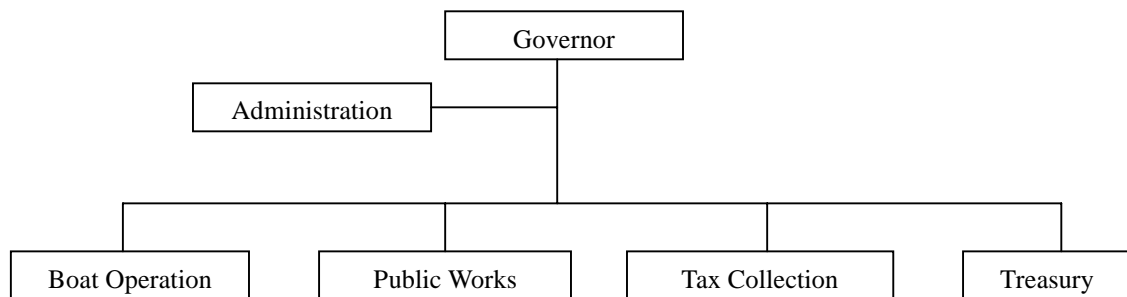


Figure 2.4(1)-2 Organization Chart of Peleliu State Government

Regarding the fishery facilities already granted to Peleliu State by the Japanese Grant Aid Program in 1994 and 1997, which included an ice-making facility, Bliliou Fisheries Cooperative Association(BFCA) has been assigned its operation and maintenance of the facilities.

The facilities and equipments provided by the Project, have a possibility of trouble which requires daily maintenance. Especially the navigation aid may be troubled by the hit of vessel or powered off, and it will be obstacle for safety navigation of vessels, therefore, it will be necessary to check the navigation aids periodically.

(2) Pier and Access Channel Maintenance Plan

The pier facilities have to be maintained by anticorrosive treatment and parts change for light, fender and bollard, improvement of concrete pavement and etc. And, partial damaged of pier facilities may be considered by ship's hit. Such damage is taken care by the Peleliu State Government if the damage is minor and by the National Government if the damage is serious.

Followings are each maintenance management.

1) Maintenance Dredging

Ministry of Resources and Development consigns it to a local contractor.

2) Pier Facility Maintenance

The Peleliu State Government carries out the maintenance of Pier Facilities.

3) Navigation Aids

The Peleliu State Government carries out the maintenance of Navigation Aids.

There is no inflow river around the Project site, and it is difficult to specify source of supply of drift sand to the turning basin and access channel. As a result of sediment quality analysis, it was recognized that it was coral sand. Therefore, the drift sand flow in from the ocean surrounding the access channel, and it tends to be deposited.

Appendix 6.6.2 shows the predicted sedimentation of sand around new Pier.

After Project completion, the marine topographic change around pier and access channel have to be monitored. Periodical bathymetric survey will show the important data of future maintenance of dredging plan. Bathymetric survey can be accomplished by an engineer of Bureau of Land and Survey with Ministry of Resources and Development.

Firstly, fixed points are selected for Bathymetric Survey and it is appropriate to carry out three or four times in a year. The sedimentation tendency and the marine topographic change at turning basin and access channel can be found in the result of survey.

If it is difficult for the Peleliu State Government to accomplish maintenance dredging in the turning basin, access channel and corner of the pier, it is recommended that the National Government will carry out the dredging by the request of the Peleliu State Government.

2-5 Project Cost Estimation

2-5-1 Project Cost Estimation

Project cost is estimated approximately 581million yen. This cost estimation is provisional and would be further examined by the Government of Japan for the approval of the Grant.

Project Cost Estimation

Approximately 581 million yen

Table 2.5.1-1 Construction of North Dock pier and related facilities

Items		Project Cost(million yen)
Civil Works	Pier extension, New Pire, rein forcement Rampway, Slipway, Embankment	211.5
Dredging Works	Dredging of existing basin, Dredging of basin in front of new pier, Dredging of access channel	306.0
Navigation Aids	New navigation aids	6.5
Detailed design and consultant supervision		57.0
Total		581.0

(Notice US\$=110.69 Japanese yen:16th November, 2005)

The cost borne by the Government of Palau is estimated below tentatively. Total cost will be US\$25,500(app.2,800,000yen). Details are as follows.

(1)Maintenance of temporary construction yard(23,000m ²)	US\$18,000
(2)Boundary Fence of temporary construction yard(1km)	US\$1,000
(3)Road Maintenance(1km)	US\$1,000
(4)Banking Arrangement	US\$5,500
Total	US\$25,500

2-5-2 Project Operation and Maintenance Cost

Necessary expenses of operation and maintenance for this project are calculated as follows. Operation of the existing fishery pier facilities and maintenance dredging of access channel and maintenance of navigation aids are carried out by the Peleliu State Government and National Government which will continue to operate and manage these facilities after handover the new facility.

Personnel expenses are taken into the account for each fiscal year. Accordingly, the following is a trial calculation of operation and management expenses. State income collected by the Peleliu State Government including ferriage, visitor fees and etc., will be utilized to compensate for the operation and management expenses.

Table 2.5.2-1 Operation and Maintenance Cost

	2007(assumption)
1.Maintenance dredging (basin and access channel) (dredging volume 4,300m ³) Tag Boat and Dredger charterage + Personnel Cost(Crew)	US\$30,710
2.Maintenance of Pier Facilities (Parts : rubber fender, bollard, etc.,) (Consumable : paints, rust prevention, etc.,)	US\$4,520
3.Navigation Aids (Parts : lantern, solar battery, etc.,) (Consumable : paints, rust prevention, etc.,)	US\$3,610
Total	US\$38,840

2-6 Other Relevant Issues

2-6-1 Natural Condition and Environmental Condition

2-6-1-1 Geography

The pier facility of Peleliu State is a multipurpose facility not only used for fishing activities but also serving port functions like embarkation and disembarkation of passengers and unloading of daily commodities, construction materials, fuel and others.

Palau, where is part of the western Caroline Islands, is the westernmost part of Micronesia, lying 3,000km south of Japan. The tightly clustered Palau archipelago consists of high islands of Babeldaob, Koror, Peleliu and Angaur, the low coral atolls of Kayangel and Ngeruangel, and the limestone Rock Islands, of which there more than 200. Peleliu is located at 50km to the south from capital city Koror. The island is small, only 13km² in area, but most of land is covered by thick tropical rain forest.

2-6-1-2 Climate

Palau has a typical tropical oceanic climate, high temperature and high humidity. The climate in Palau is divided into two types, such as November to May is the kind of dry period, averaging about 280mm of rainfall in each month, and June to October is the kind of wet period, averaging about 510mm monthly.

Predominant wind directions are a match for the two periods, for the dry-period as north-east wind and for the wet-period as south-west wind. On the other hand, the other elements of climate, such as temperature, relative humidity and atmospheric pressure, are very stable through the year.

The meteorological elements in Palau are shown in Table 2.6.1.2-1.

Table 2.6.1.2-1 Meteorological Elements

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
TX	31.9	31.3	31.7	32.0	31.9	31.5	31.2	31.1	31.3	31.8	32.3	31.7	31.6
TN	24.1	24.1	24.2	24.5	24.6	24.2	24.2	24.4	24.5	24.6	24.5	24.3	24.3
TM	27.9	27.8	28.0	28.3	28.3	27.8	27.7	28.1	27.9	28.2	28.4	28.1	28.0
UU	81.6	82.3	82.6	81.7	83.9	84.0	82.3	82.3	83.0	82.0	82.7	82.7	82.6
MR	342.7	306.6	280.1	261.6	406.8	540.2	530.8	457.0	328.2	360.2	376.6	428.0	384.9
AP	1010.1	1009.7	1009.7	1009.2	1009.1	1009.0	1009.2	1009.8	1009.7	1008.7	1008.0	1009.3	1009.3

Source: Republic of Palau National Weather Service, Japan Meteorological Agency

Note: TX ; Monthly mean maximum temperature(degree),1994-2004

TN ; Monthly mean temperature(degree),1994-2004

TM ; Monthly mean minimum temperature(degree),1994-2004

UU ; Monthly mean relative humidity(%), 1998-2004

MR ; Monthly mean rainfall(mm), 1998-2004

P ; Monthly mean atmospheric pressure (hPa), 2001-2004

The wind data from 2001 to 2004 which were obtained at Japan meteorological agency. Figure 2.6.1.2-1 shows wind rose in Palau. During the recent 3 years, frequency of occurrence of moderate wind, less than 5 m/s, is predominant as more than 55 %. Frequencies of wind direction of SW- WSW are prevalent from June to October in the wet period and NE-ENE is prevalent in December to May in the dry period. Wind directions of moderate wind N ~ E are predominant through the year. By contrast, about strong wind S ~ W are predominant .

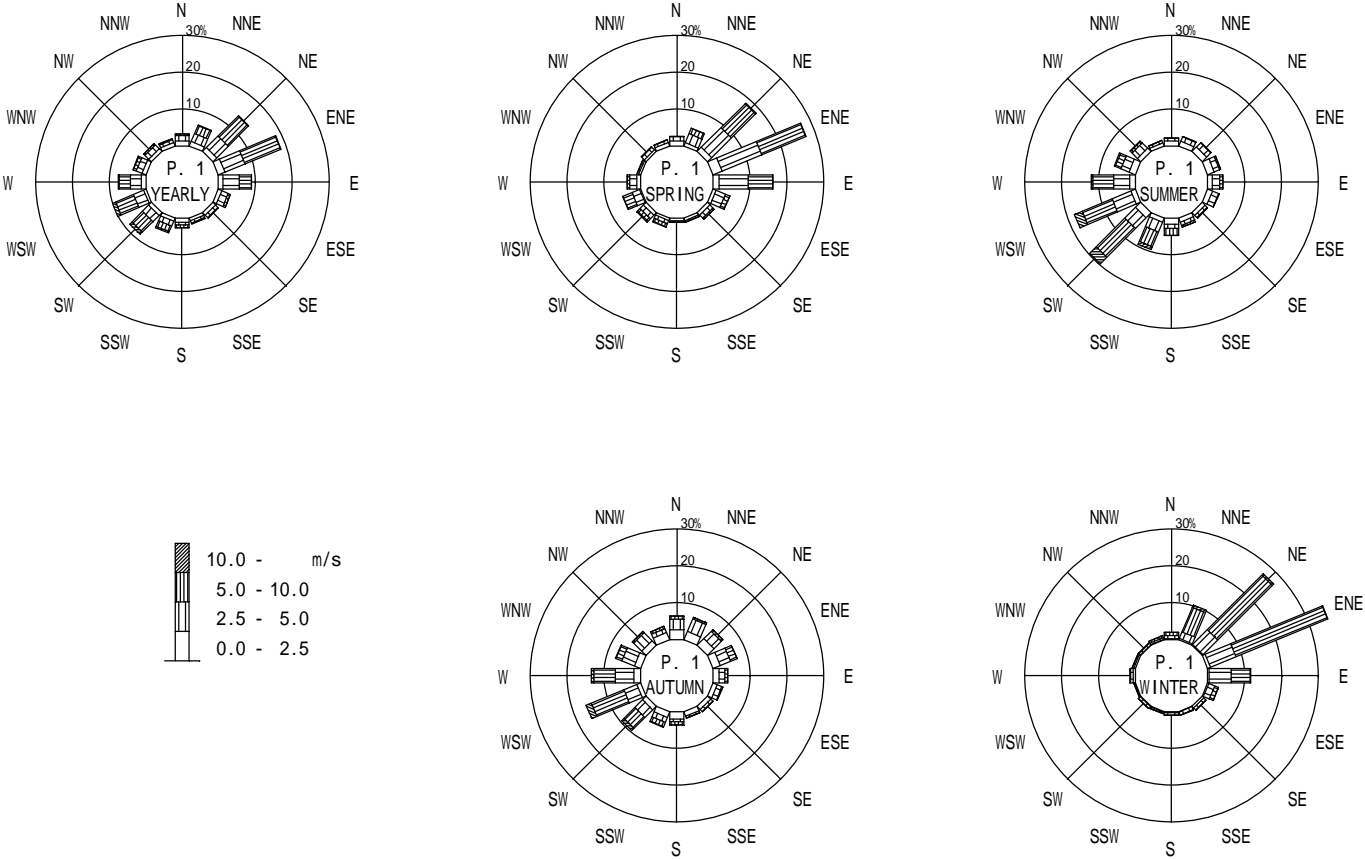


Figure 2.6.1.2-1 Wind Rose in Palau

2-6-1-3 Sea conditions

(1) Waves

1) Ordinary waves

Estimation of offshore waves in Peleliu using "one point spectral method" hindcasted by winds distribution in west pacific sea area has been carried out. Predominant wave direction is from NNW to E which occupies 78 % of the whole waves. Waves from SSW to W are also present with the rate of 15 %.Waves which heights exceed 1m occupy 57% of whole waves and waves which heights exceed 2m occupy 16% of whole waves. Wave periods spread from 3 to 14 seconds and predominant wave period is 5 to 6 seconds.

Location of North Dock is open to Westside and Eastside with a certain fetch, but these directions are surrounded by coral reefs with longitude of 2 to 3 km from wave attacks. Because of above situation, wave situation of North Dock is considered rather mild.

During the field surveys, the wave observation survey using wave observed equipment which also observed water current and tide levels was carried out to analyze the wave situation of North Dock. The data of waves are not clear because of observation point is surrounded by barrier reefs and huge shallow water area which means offshore waves can not reach to the point, Therefore, the result shows that the wave condition is calm through the observation period.

2) Storm waves

It is examined that storm waves in Peleliu occur when west ward progress typhoon attack Palau sea area. Design wave of North Dock had been fixed by typhoon "MIKE". This attacked Palau November, 1990 and is considered maximum typhoon which attacked Palau in past 59 years. Offshore wave conditions are calculated using "one point spectral method". Maximum significant wave height is 12.4 m and significant wave period is 13 s. Wave direction in maximum wave condition is WNW. Wave deformation calculation is carried out in above design wave conditions. Wave height in front of North Dock is fixed to 1.2m.

(2) Tide

Result of Tide component analysis is described below.

Nearly Highest High Water Level (NHHWL)	+ 1.717 m
Mean High Water Spring (MHWS)	+ 1.431 m
Mean High Water Neap (MHWN)	+ 1.099 m
Mean Sea Level (MSL)	+ 0.908 m
Mean Low Water Neap (MLWN)	+ 0.717 m
Mean Low Water Spring (MLWS)	+ 0.385 m
Nearly Lowest Low Water Level (NLLWL)	+ 0.100m
Chart Datum Line (CDL)	+ 0.00 m

(3) Tidal Current

1) Current Results in bottom layer by Wave Meter

The survey of current velocity and direction as bottom layer was carried out at the same point of wave meter, the sensor of current meter is +0.6m above seabed, on flood and ebb tides during the period of spring and neap tides.

Generally, current patterns during the spring tide correspond to the change of tide clearly. During flooding, westerly current prevailed; on the other hand, easterly current prevailed in ebb tide. There is a big difference of current speed in spring tide and neap

tide. However, maximum velocity is only 11cm/sec when it is flood tide in spring tide. It's too weak to make drifting sand and transfer sand to accumulating area.

2) Float Tracking

The survey of upper layer current velocity and direction was carried out by float tracking at. Zone-A (in front of North Dock), Zone-B (Navigation Pole No.14 to 20), Zone-C (Beacon Buoy No.0 to Navigation Buoy 4). Detail results are described in Appendix 6-2-5.

At zone A and B, the current patterns had shown that the similar oscillation current flowed between northwest and southeast by south during the ebb tide to the slack water to the beginning of flood tide. But at zone C, the current patterns had shown that it seemed like to have no effect by tide rising and falling.

The current patterns in the flood tide coincide with the one in the ebb tide. It means that surface current dose not correspond to the change of tide like a zone C in neap tide.

According to the results of those analyses which referred previously, the current pattern in the bottom layer does not coincide with the one in the upper layer, even at very shallow lagoon.

(4) Littoral drift

Erosion of east side beach of North Dock is recognized within about 34m from existing eastern beach of the pier. In the east side of North dock, 2 - 3 trees are washed in the base and roots are visible. The soil in which these trees have grown is recognized land origin black soil. On the other hand, accumulation by seashore white sand is recognized in west side of North dock.

Above facts indicate that there are tendency of accumulation in west side of North dock and erosion in east side.

2-6-1-4 Topographic Survey

Topographic survey was performed in project site. Topographic maps on land are shown in Appendix 6-2-1.

North Dock is located at northern part of Peleliu Island facing to the road connecting to Peleliu Government Office. Ground level of the site goes up to west side a little at a slope of 1 in 100. Office of fisherman's association and new multi use building are built near the site. There are hotel, diving shop, workroom of construction company in the back side of the road, however private houses are not there near the site.

2-6-1-5 Survey of Location of Trees

Survey of location of trees was performed in project site. Location map of trees

around North Dock is shown in Appendix 6-2-2.

2-6-1-6 Bathymetric Survey

Bathymetric survey was performed in project site. Bathymetric maps are shown in Appendix 6-2-3.

Peleliu Island is surrounded by large scale coral reefs. There are natural channel having about 2m water depth from North Dock to North –East direction as the length of 5 km. Access channel of North Dock is using this natural channel. West side and north side of North Dock are shallow with the depth of -0.5m. In the north side of access channel strip shallow area are located with the length of 500m, where mangroves are grown. These areas are reserved environmental preservation area by Peleliu State and Ministry of Community and Cultural Affairs.

2-6-1-7 Sediment Quality Survey

Seabed sediment quality analysis has been carried out at the site (SQ-1: east side of North Dock, SQ-2: north-west side of North Dock, SQ-3: Access channel near North Dock). Samples were collected from seabed by diver. Gravity of seabed material is relatively heavy as around 2.8. Median grain size (D 50) which is 0.5 to 0.7mm at SQ-1, and SQ-2 and 1.25mm at SQ-3. Seabed material is sand. Detail results are described in Appendix 6-2-6.

2-6-1-8 Material Analysis

Material analysis was carried out. Two samples of sand and gravels from two quarry sites were sampled. The samplings were carried out at two quarry site of PTC (Palau Transportation Company) and Hawaiian Belau Rock (HBR).

According to the results, gravities of the material of PTC (sand and gravel) are 2.69 to 2.80. Gravities of the material of HBR are 2.55 to 2.64. Detail results are described in Appendix 6-2-7.

2-6-1-9 Soil condition

Soil investigation has been conducted at 4 locations of the project site. Figure 2.6.1.9-1 shows the bore hole points. Bore hole has been drilled to -7m depth at BH-1 and BH-2, -4.5m at BH-3, -9.5m at BH-4. There was sand layer in the depth of -1m to -3m At all bore holes bearing layer (limestone) had appeared (refer to Figure 2.6.1.9-2 to 2.6.1.9-5).

N-value of sand layer is over 10 and that of bearing layer is over 50. N-value of bearing layer was over 100 by the investigation in previous project in 1998. Therefore, stability of soil at project site is strong enough for marine construction.

Investigation of content of sulfur trioxide (SO₃) was conducted at land boring points (BH-1, BH-2) and the contents of SO₃ was confirmed as 25 to 70 mg/l. These figures are smaller the 3000mg/l that is prescribed in British Standard.

Detail results are described in Appendix 6-2-8.

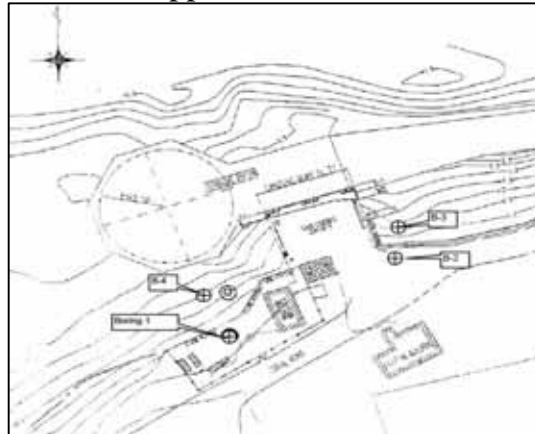


Figure 2.6.1.9-1 Bore-hole Points

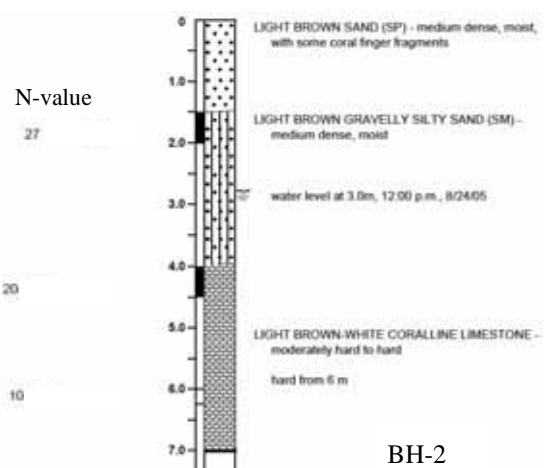
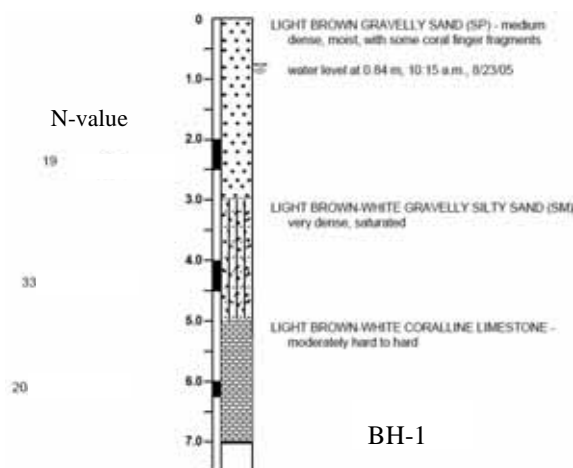


Figure 2.6.1.9-2 Result of Soil Investigation Figure 2.6.1.9-3 Result of Soil Investigation

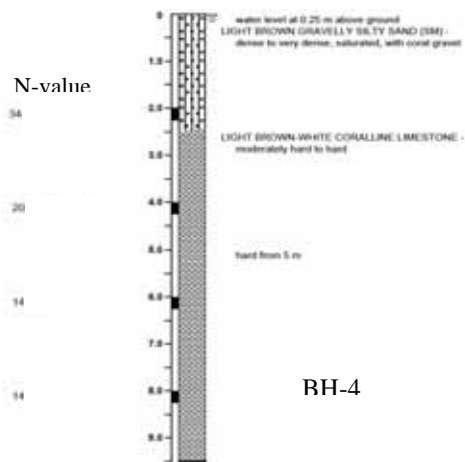
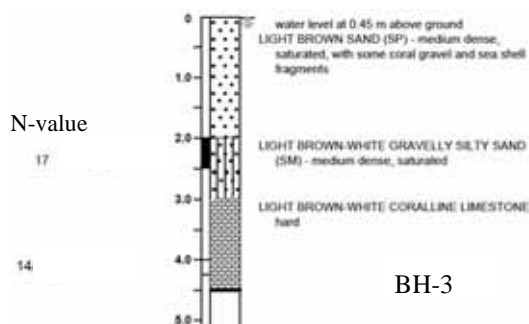


Figure 2.6.1.9-4 Result of Soil Investigation Figure 2.6.1.9-5 Result of soil Investigation

2-6-1-10 Magnetic survey

Magnetic survey for dud was conducted in the vicinity of North Dock and the access channel. Detail results are described in Appendix 6-2-9.

6 pieces of 0.5 (inches) caliber machine gun rounds were found in the east side of North Dock. Rusted fire extinguisher was found one meter below the surface in west side of North dock. A submarine cable was located and plotted at the three different locations of the channel. No items of any significance were located in near North Dock and access channel.

2-6-1-11 Rocky sea bed (Thickness of sand)

Rocky seabed conditions were observed in the access channel (Navigation Pole No.16 to No.20) for design of fishery facilities. It is confirmed that some rocky seabed is southern side of Navigation Pole No.16 to No.18 and southern side of No.20

2-6-1-12 Marine Life Observation

Marine life observation was carried out at 3 places in each zone (Zone-A, Zone-B, Zone-C) and extra zone D (offshore area of entrance of channel). Detail results are described in Appendix 6-2-4.

The marine life diversity is getting lower the zone D-C-A-B in sequence. The sea grass percent cover in each zone shows that sea bottom covered with more than 75% sea grasses, such a like *Enhalus acardoides*, *Thalassia hemiphrachii* and *Gymnodocea rotundata* etc, in all of the places except extra zone D near the channel entrance navigation buy. Not only in the access channel but also huge area around the channel are covered with sea grass. It means that sea grass compose a kind of a meadow. Tropical sea grass meadows typically occur in most shallow, sheltered soft-bottomed marine coastlines. Sea grass ecosystems vary from a few plants or clumps of a single species to extensive single or multispecies meadows covering large areas of the bottom. Sea grasses are primary producers that use energy from the sun to drive photosynthetic processes in the leaves. They also help to stabilize fine sediments with their leaf and root systems and maintain water quality. They provide food for many marine animals and shelter for others. Sea grasses, which spend most, if not all, of their time submerged have developed methods of underwater flowering and pollination for sexual reproduction. *Enhalus* plants are exception, as they must emerge to the surface to reproduce. All sea grasses have horizontal underground stems called rhizomes. Sea grasses can propagate vegetative through growth and branching of this rhizome. Therefore the impact to environment, sea grasses are min item of it, by dredging will be able to minimize if there remain enough thickness of surface soft-mud on the sea bottom for rhizome can sustain to grow.

2-6-1-13 Turbidity and Transparency

The survey was carried out at the same place as marine life observation survey. In the Transparency Survey, white board has hit the bottom at all survey points due to shallow water area and the transparency was more or less than 5m at the maximum.

The turbidity was about 2ppm in most of the points and was 3.5ppm at the maximum.

2-6-1-14 Water quality analysis

Water quality analysis has been conducted at 2 locations at the time of ebb tide and flood tide and tap water. The result of water quality analysis is shown in Table 1.4.6-1.

Total coliform in the basin of North Dock at flood tide indicates significant number. The basin area is suffering from excretion.

Table 2.6.1.14-1 Result of Water Quality Survey

Contents	Tap water	Site-1 (Basin)		Stite2 (Channel)	
		Ebb Tide	Flood Tide	Ebb Tide	Flood Tide
Sampling date	2005/08/09	2005/08/09	2005/08/10	2005/08/09	2005/08/10
Sampling time	16:15	15:20	08:30	17:00	09:10
Agrichemicals(g/m-3)	<0.00008				
DO(mg/l)	3.72	14.89	5.24	14.86	3.10
DO(% saturation)	49.4	196.4	70.1	197.1	49.1
Suspended solids(SS)	<3	34	42	20	40
Total Coliform (MPN/100ml)	12	1,990	13,000	1,990	1,730
Oil and grease (mg/l)	<4	<4	<4	<4	4
BOD (mg/l)	2.1	3.2	2.4	2.7	2.4
Organic phosphorus(mg/l)	0.2				
Salinity (%)	0.010	3.33	3.36	3.26	3.26
pH	7.86	8.22	8.26	8.26	8.28

2-6-2 Conditions of Project Site

The study team performed project site investigation in August 2005. Results of this investigation is described in Appendices (Appendix 6-3 Results of Investigation in the Project Site).

2-6-3 Environmental Consideration during Construction Period

(1) Dredging Works and Dumping Site

Turbidity is occurred by the dredging work of access channel and turning basin

during the construction period. However, diffusion is preventable by the contractor adopting contamination preventive measure and the monitor system. Bedrock was confirmed around Navigation Aids R16-R20. Bedrock will be dredged by Backhoe dredger. However, underwater blast may be necessary when digging by Backhoe is not possible. Silt protector and air curtain to protect diffusion of the turbidity will be installed when the underwater blast will be carried out. Temporary dredging and filling in the vicinity area of the existing pier will be required for the construction of new pier extension works. Extensive seaweed grounds are distributed in the adjacent area of the pier construction site, where serve the habitat for growth of small fishes and other marine life. However, considering that the scale of dredging and filling volume are comparatively small and area for pier construction is limited to only a small part of the area and the limited period of dredging works, a temporary lost of the partial sea grass ground is presumed not to affect so much to the maritime environment. The seaweed ground to be found there are also comparatively resistant to turbidity by dredging works and their growth is based on underground stems. Therefore it will be expected to recover rapidly after completion of the construction work. That is, the impact on the marine environment by the dredging works in access channel and turning basin is expected to be very small magnitude. However, to install a silt protector is recommended for the dredging works to prevent turbidity diffusion to the adjacent area. Since the dredged materials are prohibited to dump in the ocean area in Palau, the dredged material will be dumped in appropriate sites acquired in Peleliu Island.

(2) Pier Construction Works

In the marine area around the North Dock, domestic wastewater is discharged and the water is deteriorated. The marine environment turns worse. The construction site must be minimized the impact by the construction works to the surrounding environment, the work volumes conducted at the project site should be reduced at the most. It can be realized by allocating the required works to Koror State, such as in during pre-cast segments which are produced there for the pier structure. For protection of the marine environment, the measures will be adopted to prevent leakage of oil, falling of concrete pieces, other construction materials from construction site into the surrounding area. Also it is necessary to respect to the residential environment and consideration of the construction methodology will be necessary to minimize the impact of the construction works. Construction work machine to reduce noises and vibration is necessary to be selected, because 1 hotel and 1 restaurant located near the project site. And, there is a possibility to cut down some trees being around facilities of fishery cooperatives going with the construction of apron as well as west side extension of pier (refer to Figure 2.6.3(2)-1). In the case, the Contractor will make the report to E.Q.P.B

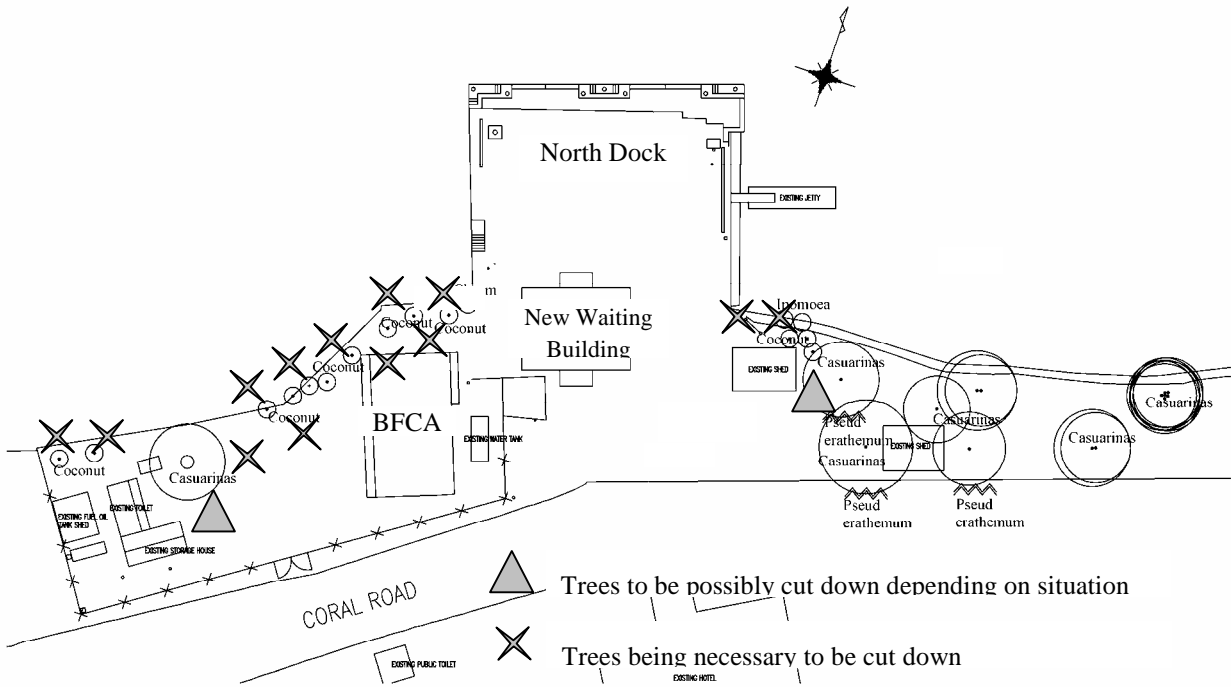


Figure 2.6.3(2)-1 Location Map of Trees

Chapter 3

Project Evaluation and Recommendations

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effect

The present project to be implemented under such background will therefore have the following direct and indirect effects

(1) Direct Effects

- 1) Sufficient Efficiency of Fish Landing and Improvement of Fishermen's Convenience

Extension of the pier with 41m to west will enable to be utilized at any time because cargo vessel and fishing boats can be berthed at the same time and each different berth. This will greatly improve the work efficiency and safety of fishery activities and other port-related activities.

- 2) Increased Navigable Days of Cargo Vessel due to Dredging of the Access Channel and Basin

(a) According to the tide table in 2005, navigable date of cargo vessel with full load will be 323 days in the future instead of 44 days at present.

(b) Navigation time of the cargo vessel through the access channel will be expected to improve from 55 minutes to 30 minutes approximately.

- 3) Secure of Safety Navigation by Installation of Navigation Aids

Installation of the navigation aids indicating the alignment and location of the access channel will ensure safety navigation of boats in rough weather and increasing of navigable efficiency of cargo vessel.

(2) Indirect Effects

- 1) Coming along with the facility improvements by the Project, fishery products produced by Peleliu State will be supplied in good quality to Koror State.

- 2) With the facility improvements in the Project, improvement of physical distribution between Koror State and Peleliu State will be promoted.

- 3) Enough capability of North Dock after implementation of the project can handle the increased fish catches, cargos and passengers. The improvement will assist the further vitalization of economy in Peleliu State.

The implementation effects expected through the Project and the extent of improvement from the existing circumstance are summarized in Table 3.1-1.

Table 3.1-1 Implementation Effects and Improvement from Existing Circumstance

Existing Circumstance and Difficulties	Countermeasures / Project Components	Effects and Extent of Improvement
Cargo vessel has occupied the berth. Congesting of existing narrow pier is too serious to berth the fishing boats, to handle the fish catch, to berth the general boats and to handle the cargo sufficiently.	Extending the pier with 41 m to west	Extension of the pier enables to moor the boats at any tide level, which promote efficiency of fishery port activities and related works.

Existing Circumstance and Difficulties	Countermeasures / Project Components	Effects and Extent of Improvement
Because of the depositing of sand and transportation of larger size cargo vessel, the vessel with maximum 2.4m draught can not navigate the access channel of which shallowest depth is DL-1.0m when it is low tide.	Dredging the access channel (width 21m) and basin Design Depth in the Access Channel: DL-2m (partly DL-2.5m) Design Depth in the Basin: DL-2m (partly DL-3m)	Navigable date of cargo vessel with full load will be improved by dredging in the access channel and basin. Navigation time of the cargo vessel through the access channel will be expected to improve the navigation time to Koror.
Shortage of navigation aids has led the difficulty for safe navigation of boats at night or in emergency cases.	Installing a navigation pole between No. 2 and No. 4 of existing navigation aids Installing a navigation aid between No. 16 and No. 18 of existing navigation aids	It will ensure the safety navigation of boats in bad weather and increasing of navigable efficiency of cargo vessel.

Result index is based on the results of base-line surveys for the period of 20 days in August 2005, which were surveyed fish catch quantity, activity of fishery cooperative, port traffic, cargo handling volume and on-board investigation in North Dock. Methods of prospecting of effects after implementation are by the examination between tide change and depth of the access channel and interview to the captain of cargo vessel.

3-2 Recommendations

It is recommended that both Palau Government and Peleliu State Government will responsible for management and operation of the project facilities. Utmost care should be taken to ensure the effective use of the project components.

(1) Appropriate Operation and Management

Proper guidance for fishermen and other users of the facilities will be required to ensure appropriate and smooth management and operation of the project facilities. In this context, guideline shall be prepared by Peleliu State Government.

(2) Appropriate Maintenance

Depositing sand in the access channel and bathymetric change in the vicinity of the pier and revetment are likely to occur after completion. Periodical sounding survey will be necessary to observe and examine the depositing sand phenomena of the access channel and bathymetric change due to littoral drift. When the depositing sand of the access channel and bathymetric change adjacent to the pier and revetment are observed, maintenance dredging should be immediately carried out by Ministry of Resources and Development.

(3) Restriction on the Pier Use

Since the pier facility has been designed on the basis of the state-owned middle size fishing boat and other larger boats such as ODESANGEL_DIL, any boats larger than the designed boat size must not use the Pier. Beside, any vehicle larger than the tractor trailer for 20 feet container (design load is 50kN) must not be allowed to access to the Pier.

(4) Restriction of Navigation along the Access Channel

The access channel is planned and designed on the basis of the state-owned middle size fishing boats and ODESANGEL_DIL to navigate at large tide range. It should be noted that somewhat larger boats, larger than ODESANGEL_DIL would be possible to navigate through the channel depending on the tide level and other vessel traffic. However, because of the limited width and depth of basin and access channel, it is quite difficult to approach and berth at the North Dock by larger vessel than ODESANGEL_DIL.

(5) Bad Sea Condition

During bad sea condition, ODESANGEL_DIL, fishing boats and other boats mooring along the Pier must immediately evacuate to safe areas. Small boats can be pulled up onto the surrounding beach.

(6) Ship Accidents

In case of ship accidents in the access channel, the channel should be closed instantly. Therefore urgent recovery works will have to be taken to maintain the lifeline of Peleliu State.

(7) Statistics on Fishery and Other Relevant Activities

The number of fishing operations, the amount of fish catches and the volume of fish shipped to Koror State will be recorded to compile fishery activity statistics. In addition, the ship particulars, number of calling boats and the volume of cargoes as well as the number of passengers including tourists will be also collected in order to study situation on physical distribution of goods, tourist visits and other relevant matters. These statistics will be executed by the staff of Peleliu State Government.

(8) Domestic Cooperation in Palau and Utilization of Capabilities of Local Contractor

As written in “(2) Appropriate Maintenance”, it is recommended that monitoring bathymetric survey will be carried out with the utilization of survey equipment and surveyors in Bureau of Land and Survey and survey boat of Palau International Coral Reef Center. Also, it is recommended that maintenance dredging by the construction machines owned by local contractor in Palau because it will be economical.

(9) Contriving for the Facility Utilization by Peleliu State

Extension of the pier in North Dock is limited due to the limitation of public area and existence of preserved shallow area with mangroves. If inconvenience causes for access to slipway or berths after construction, Palau side needs to contrive for the convenient utilization by removing trees or huts neighboring the extended area.

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Appendix 1. Member List of the Study Team

(1) In the Survey Mission

Name	Assignment	Organization
Official Member		
Mr. Tsutomu SHIMIZU	Leader	Rural Development Team, Project Management Group III, Grant Aid Management Department, Japan International Cooperation Agency (JICA).
Mr. Kosei BANURA	Technical Adviser	Office of Overseas Fisheries Cooperation, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries
Consultant Member		
Mr. Masakiyo MURAOKA	Chief Consultant/ Fisheries Harbor, Facility Planning	ECOH CORPORATION
Mr. Masanori IKEDA	Civil Engineering for Port and Harbor	ECOH CORPORATION
Mr. Shinji OKADA	Natural Condition Survey /Environmental and Social Consideration	ECOH CORPORATION (Assigned from Coastal Ocean Research Co., Ltd.)
Mr. Kazunori KOSUGE	Construction and Procurement Planning /Cost Estimation	ECOH CORPORATION
Mr. Hiroshi WATANABE	Architecture Planning	ECOH CORPORATION (Assigned from Commonwealth Engineers Co., Ltd.)

(2) In the Explanation Mission of Draft Final Report

Name	Assignment	Organization
Official Member Mr. Tsutomu SHIMIZU Mr. Kosei BANURA	Leader Technical Adviser	Rural Development Team, Project Management Group III, Grant Aid Management Department, Japan International Cooperation Agency (JICA). Office of Overseas Fisheries Cooperation, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries
Consultant Member Mr. Masakiyo MURAOKA Mr. Masanori IKEDA	Chief Consultant/ Fisheries Harbor, Facility Planning Civil Engineering for Port and Harbor	ECOH CORPORATION ECOH CORPORATION

Appendix 2. Study Schedule

(1) In the Survey Mission

No	Date	Day	Movement	Accommodation	Activities	
1	Aug	7	Sun	Narita CO962 (10:30)→ Guam (15:00) Guam CO953 (18:50) → Koror (19:50)	Koror	Official members (Messrs. SHIMIZU & BANURA): Depart from Japan and arrive in Palau
				Narita CO962 (10:30)→ Guam (15:00) Guam CO953 (18:50) → Koror (19:50)	Koror	Consultant member (Messrs. MURAOKA, IKEDA and OKADA) : Depart from Japan and arrive in Palau
				Narita CO962 (10:30)→ Guam (15:00)	Guam	Consultant member (Mr. KOSUGE) : Depart from Japan and arrive in Guam
2		8	Mon		Koror	Official members (Messrs. SHIMIZU & BANURA) and consultant member (Messrs. MURAOKA, IKEDA and OKADA): Courtesy call on the Embassy of Japan, JICA Palau Office, Ministries of the Government of Palau and have the meetings
				Guam CO953 (18:50) → Koror (19:50)	Koror	Consultant member (Mr. KOSUGE) : Interview to contractors and distribute the questionnaire in Guam, depart from Guam and arrive in Palau
3		9	Tue	Koror→Peleliu→Koror	Koror	Official members and consultant members: Courtesy call on Peleliu State Government and investigation at the project site Consultant member has meeting and contracting with sub-contractors.
4		10	Wed		Koror	Official members (Messrs. SHIMIZU & BANURA) and Consultant members (Messrs. MURAOKA, IKEDA, OKADA & KOSUGE) : Have the meetings with Ministries of the Government of Palau and relevant authorities to explain and discussion for the Inception Report and Questionnaires
				Koror→Peleliu	Peleliu	Consultant member (Mr. Okada) starts field survey.
5		11	Thu		Koror	Official members and consultant Members: Discussion of the Minutes of Meetings
					Peleliu	Consultant member executes the field surveys.
6	Aug	12	Fri		Koror	Official members and consultant Members: Discussion and Signing of the Minutes of Meetings
					Peleliu	Consultant members execute the field surveys in Peleliu.

No	Date	Day	Movement	Accommodation	Activities
7	13	Sat	Koror CO941 (01:45)→ Guam (04:45) Guam CO961 (06:30) → Narita (09:10)	Koror / Peleliu	Official members (Messrs. SHIMIZU & BANURA): Leave Palau and arrive in Narita Consultant members execute the investigations in Koror and Peleliu.
8	14	Sun	Peleliu→Koror Koror→Peleliu	Koror Peleliu	Consultant members have the team meeting and data compiling in Koror. Consultant members execute the field surveys in Peleliu.
9	15	Mon		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
10	16	Tue	Koror→Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
11	17	Wed	Peleliu→ Koror→Peleliu	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
12	18	Thu	Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
13	19	Fri	Koror→Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
14	20	Sat (Full Moon)	Koror→Peleliu→ Angaur Angaur→Koror	Koror / Peleliu	Consultant members execute the investigations in Koror, Peleliu and Angaur.
15	21	Sun		Koror Peleliu	Consultant members execute the data analysis and team meeting in Koror Consultant members execute the field surveys in Peleliu.
16	22	Mon	Koror→Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
17	23	Tue		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
18	24	Wed		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
19	25	Thu		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
20	26	Fri		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
21	27	Sat		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
22	28	Sun	Narita CO962 (10:30)→ Guam (15:00) Guam CO953 (18:50) → Koror (19:50)	Koror Koror Peleliu	Consultant member (Mr. WATANABE):Depart from Japan and arrive in Palau. Consultant members execute the investigations in Koror and Peleliu.

No	Date	Day	Movement	Accommodation	Activities
23	29	Mon	Koror→Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
24	30	Tue	Koror→Peleliu→ Koror	Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
25	31	Wed		Koror / Peleliu	Consultant members execute the investigations in Koror and Peleliu.
26	Sep 1	Thu		Koror Peleliu	Consultant members discuss with Ministries of the Government of Palau in Koror. Consultant member executes the investigations in Peleliu.
27	2	Fri	 Peleliu→ Koror Koror CO941 (01:45)→ Guam (04:45)	Koror Koror Guam	Consultant member (Messrs. MURAOKA, IKEDA and WATANABE): Field reporting to the Embassy of Japan, JICA Palau Office and Ministries of the Government of Palau. Consultant member (Mr. OKADA): Pick the survey equipment up in North Dock of Peleliu. Consultant member (Mr. KOSUGE) : Depart from Koror and arrive in Guam, interview to contractors and collect the answers of questionnaire in Guam
28	3	Sat	Koror CO941 (01:45)→ Guam (04:45) Guam CO961 (06:30) → Narita (09:10) Guam CO961 (06:30) → Narita (09:10)		Consultant member (Messrs. MURAOKA, IKEDA OKADA and WATANABE): Depart from Koror to Narita, Japan via Guam Consultant member (Mr. KOSUGE): Depart from Guam to Narita, Japan

(2) In the Explanation Mission of Draft Final Report

No	Date	Day	Movement	Accommodation	Activities
1	Nov 3	Thu	Narita →Guam Guam CO953 (19:40) → Koror (22:00)	Koror	Official members (Messrs. SHIMIZU & BANURA) and Consultant member (Messrs. MURAOKA and IKEDA): Depart from Japan and arrive in Palau
2	4	Fri		Koror	Official members (Messrs. SHIMIZU & BANURA) and consultant member (Messrs. MURAOKA and IKEDA): * Meeting with JICA Office * Courtesy call on the Embassy of Japan * Meeting with Ministry of Resource and Development
3	5	Sat		Koror	Official members and consultant members: * Meeting with Ministry of Resources and Development, if necessary * Documentation of Draft of Minutes
4	6	Sun	Koror→Peleliu→Koror	Koror	Official members (Messrs. SHIMIZU & BANURA) and consultant member (Messrs. MURAOKA and IKEDA): * Site Investigation to Peleliu North Dock
5	7	Mon		Koror	Official members (Messrs. SHIMIZU & BANURA) and consultant member (Messrs. MURAOKA and IKEDA): * Meeting with Ministry of Resources and Development to sign the Minutes * Reporting to the Embassy of Japan
6	8	Tue	Koror CO954 (02:30)→ Guam (05:25) Guam → Narita	Japan	Official members (Messrs. SHIMIZU & BANURA) and consultant member (Messrs. MURAOKA and IKEDA): * Leave Palau and arrive in Narita

Appendix 3. List of Parties Concerned in the Recipient Country

(1) Office of President

Hon. Tommy E. Remengesau, Jr. President

(2) Ministry of Resources and Development

Hon. Fritz Koshiba	Minister
Mr. Theofanes Isamu	Director, Bureau of Marine Resources
Mr. Franny Rpklan	Ocean Management, Bureau of Marine Resources
Mr. Leon E. Remengesau	Fishery Management, Bureau of Marine Resources
Mr. Gilbert U. Demei	Director, Bureau of Land and Survey
Mr. Masasinge Arurang	Director, Bureau of Public Works
Mr. Osamu Taniguchi	JICA Senior Overseas Volunteer

(3) Ministry of Health

Hon. Victor M. Yano M.D.	Minister
Mr. Nick N. Ngwal	Health Services Administrator
Dr. Ishmael Togamae	Southern Community Health Center
Mr. Stevenson Kuardei M.D.	Director, Public Health
Mr. Eric Rehuher	Bio Medical Engineer
Mr. Shozo Takaba	JICA Senior Overseas Volunteer
Mr. Masaru Takada	JICA Senior Overseas Volunteer
Mr. Jun Figuerod	Pacific Biomedical Services Inc.

(4) Ministry of Finance

Mr. Casimel E. Remengesau	Finance and Management Advisor
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(5) Environmental Quality Protection Board

Ms. Portia K. Franz	Executive Officer
Mr. Donald Dengokl	Assistant Executive Officer
Mr. Alex Apostoz	Environmental Engineer

(6) Ministry of Commerce and Trade

Mr. Arvin Raymond	Acting Director, Transport and Communication Division
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(7) Ministry of State

Mr. Guslav N. Aitaro	Bureau of International Trade & Technical Assistance
Mr. Ramon Recbei	Director, Bureau of Foreign Affairs

Mr. Hiroyuki Nagafuchi JICA Senior Overseas Volunteer

(8) Ministry of Community and Cultural Affairs

Ms. Vicky N. Kanai Director, Bureau of Arts and Culture

Ms. Rita Olsudong National Archaeologist, Bureau of Arts and Culture

(9) Palau National Communication Corporation

Mr. Stalin Bai Engineer

(10) Palau Visitors Authority

Ms. Lanny Ngedebuu Statistics Technician

(11) Palau Federation of Fishing Association

Mr. Victorio Uherbelau Chairman

Mr. Harry Ngirmidoc Acting Manager

Mr. Fredrick Rubaseh Fish Handler

(12) Peleliu State Government

Mr. Jackson R. Ngiraingas Governor

Mr. Masaru Ingloag Traditional Chief

Mr. Kalbesang Soalabzai Speaker

Mr. Hilberd Ridep Director of Public Works

Ms. Lebeca Ngituod Treasurer

Mr. Raver Shmull Tax Collection

Ms. Haidy Masahiro Office of Peleliu State Government in Koror

(13) Palau International Coral Reef Center

Mr. Steven Victor Research Department Head

Mr. Hideki Yukihiro Ph.D. JICA Research Coordinator

(14) Palau Public Utilities Corporation Peleliu Power Plant

Mr. Lester Ngirameked Superintendent

(15) Blilior Fisheries Cooperative(BFCA)

Mr. Kent Giramur Manager

(16) Crew of Peleliu State Cargo Vessel “ ODESANGEL_DIL”

Mr. Hosei Hideo Captain

(17) Crew of Peleliu State Cargo Vessel “PELELIU STAR”

Mr. Obichang Nobuo Captain

(18) Representative of Land Owner System

Mr. Ermas Ngira Elbaedoy Land Owner

Mr. Smau Amalei Ngirngesang Land Owner

(19) Belau Air Inc.

Ms. Madrei Singeo Representative

(20) Local Contractor

Mr. Surangel Samuel Whipps, Jr. President CEO, Surangel & Sons Co.

Mr. Mason N. Whipps Vice President, Surangel & Sons Co.

Mr. William Malano Chief Engineer, Socio Micronesia inc.

Mr. Peter Polloi Assistant Manager, Pacific Development Corporation

(21) Embassy of Japan

Mr. Naotake Ymashita Charged Affaires ad interim

Mr. Takashi Mita Special Assistant(Researcher / Advisor)

(22) JICA Palau Office

Mr. Yoshio Notsu Resident Representative

Mr. Kenji Aizono Project Formulation Advisor

(23) Japanese Consultant & Contractor

Mr. Fumihiko Shishido Resident Engineer, Nippon Koei Co.,Ltd.

Mr. Yuji Takao Project Manager, Nishimatsu Construction Co.,Ltd.

(24) Overseas Fishery Cooperation Foundation

Mr. Shigeru Kuramochi Director, Pacific Island Division

Appendix 4. Minutes of Discussions
(1) In the Survey Mission

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR DEVELOPMENT OF SOUTHERN OUTLYING STATE
IN THE REPUBLIC OF PALAU

In response to the request from the Government of the Republic of Palau (hereinafter referred to as "Palau"), the Government of Japan decided to conduct a Basic Design Study on the Project for Development of Southern Outlying State in Palau (hereinafter referred to as "the Palau") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Tsutomu Shimizu, Project Management Group III, Grant Aid Management Department, JICA, and is scheduled to stay in Palau from August 7, 2005 to September 3, 2005.


The Team held discussions with the officials concerned of the Government of Palau and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Koror, August 12, 2005

清水 勉

Tsutomu Shimizu
Leader
Basic Design Study Team
Japan International Cooperation Agency



Fritz Koshiha
Minister
Ministry of Resources and Development
Republic of Palau

1. Objective of the Project

The objective of the Project is to secure safe and effective utilization of the port of the Peleliu state through improvement of the port facilities and provision of the necessary equipment.

2. Project site

The site of the Project is the Peleliu state in Palau as shown in Annex-1.

3. Responsible and Implementing Agency

3-1. The responsible and implementing agency is the Ministry of Resources and Development.

3-2. The Palau side explained that the respective organizations which have responsibilities for the operation and maintenance of the facilities and equipment are listed below.

- (1) Pier, Channel, Rampway, Slipway, Beacon: Peleliu state government
- (2) Fishermen's assembly house: Fishery cooperatives of the Peleliu state
- (3) Medical equipment: Ministry of Health

4. Items requested by the Government of Palau

4-1. Items requested by the Government of Palau are shown in Annex-2. The Palau side will submit the revised list of materials and equipment for dispensary to the Team by August 16, 2005.

4-2. The Team visited the Peleliu state with the Governor on August 11, 2005. The Team paid courtesy call to the Governor's office and discussed more on the Project detail. The Palau side requested the Team to consider additional request for development of eastward embankment.

4-3. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval. The both sides confirmed that the final components of the Project will be decided after further analysis in Japan.

5. Japan's Grant Aid Scheme

5-1. The Palau side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3.

5-2. The Palau side will take the necessary measures, as described in Annex-4, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Study

6-1. The consultants will proceed to further studies in Palau until September 3, 2005.

6-2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around November 2005.

6-3. In case that the content of the report is accepted in principle by the Government of Palau, JICA will complete the final report and send it to the Government of Palau around January 2006.

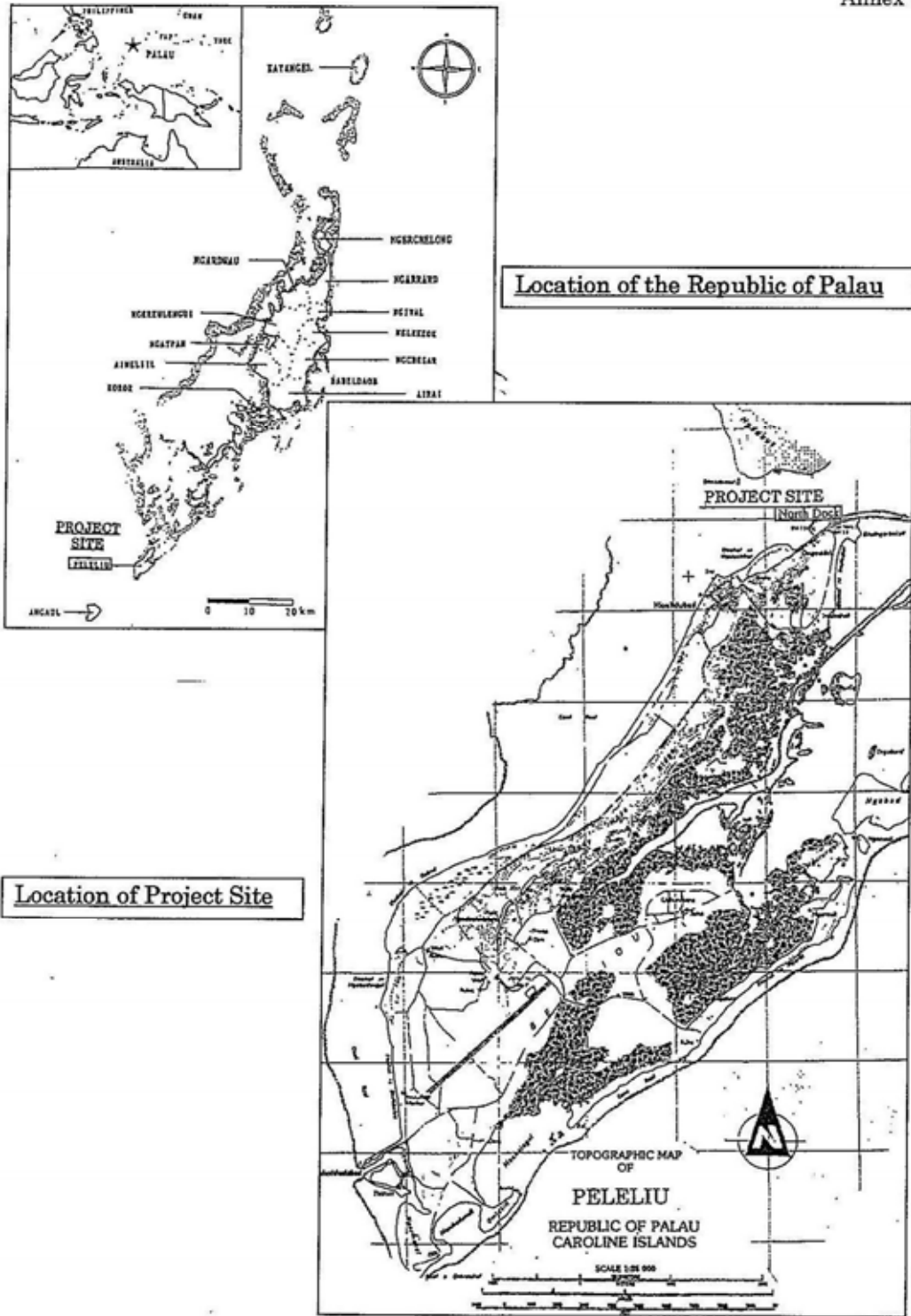
- 7-1. The Palau side will ensure enough budget and personnel for operation and maintenance of the facilities and equipment provided by the Project.
- 7-2. The Palau side will submit necessary data and information requested by the Team until September 2, 2005.
- 7-3. In case any metal dangerous subject (ordinance) was found by the magnetic survey, the Palau side will remove such subject with their own expense before the cabinet approval of Japan.
- 7-4. The Palau side will secure all required permits prior to the implementation of the Project (before the Exchange of Notes).
- 7-5. The Team emphasized the importance of proper operation and maintenance of facilities and equipment. Maintenance capabilities of the respective organizations will be one of the important criteria to decide the components of the Project.
- 7-6. The Team reiterated that the Palau side will remove any obstacle on the Project site, for example, barge, jetty, private boat and supporting structure.
- 7-7. The Palau side must secure and free the Project site from any complaints or problems on possible dispute of ownership before the Team departure on September 3, 2005.

Annex-1: Location Map

Annex-2: List of requested items

Annex-3: Japan's Grant Aid Scheme

Annex-4: Major Undertakings to be taken by Each Government



Location of Project Site

Location of the Republic of Palau

Location Map

List of Requested Items

1) Pier extension and dredging of anchorage

The existing narrow pier will be expanded and improved for landing and refilling activity by fishing boats, landing of materials and commodities required for lives in Peleliu, arrival and departure of passenger boats used by the local residents for their movement and the arrival and departure of small newly commissioned boat for tourists.

- a. New pier: extension 45m + corner part 5m = 50m
- b. Dredging of anchorage in front of new pier: 1,270m³
- c. Dredging of existing anchorage: (water depth 1.5m + allowance 0.5m = 2.0m), Scale 30m x 50m x 0.5m = 750m³
- d. Dredging of water channel: (former R2, R4, R5 area extension, 1,080m center) about 14,000m³

2) Rampway for landing

A rampway for landing of cargo carrier will be built.
Front edge + 1.0m, width x length = 6m x 8m

3) Slipway

A slipway for repair of boats will be built.
Water depth at front edge 1.5m, width x length = 4.5m x (0.3m x 10m)

4) Beacon

A beacon equipped with a solar panel will be built at the intersection between the artificial and natural channels so that the entrance of the channel can be recognized even at night and at high tide.

5) Fishermen's assembly house

A flat house with an area of 100m² will be built as a facility big enough for fishermen to assemble and to hold various kinds of workshops targeted for island residents. The structure of the facility is a 60 m² meeting room with a 40m² semi outdoor work space.

6) Provision of materials and equipment for dispensary

Medical materials and equipment centering on items for emergency will be provided to enable to address a sudden illness and injury by local residents or tourists as well as to give an appropriate first-aid treatment in case of a serious patient who needs to be taken to Koror. The details of the equipments are shown in the equipment list below.

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Japan's Grant Aid Scheme

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedure

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request. If necessary, JICA send a Preliminary Study Team to the recipient country to confirm the contents of the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by

document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- a) confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- b) evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;
- c) confirmation of items agreed on by both parties concerning the basic concept of the Project;
- d) preparation of a basic design of the Project; and
- e) estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participates the Study and prepares a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Project, JICA recommends the same consulting firm which participated in the Study to the recipient country, in order to maintain the technical consistency between the Basic Design and Detailed Design as well as to avoid any undue delay caused by the selection of a new consulting firm.

3. Japan's Grant Aid Scheme

1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

- 2) "THE PERIOD OF THE GRANT" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- 3) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- 4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

- 5) Undertakings required to the Government of the recipient country

- a) to secure a lot of land necessary for the construction of the Project and to clear the site;
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities outside the site;
- c) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid;
- d) to exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;
- e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
- f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Project; and
- g) to bear all the expenses, other than those covered by the Grant Aid, necessary for the Project.

- 6) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and

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staff for operation and maintenance of them as well as to bear all the expenses other than those covered by the Grant Aid.

7) "Re-export"

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

8) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commission to the Bank.

Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site(receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm sewer and others to the site)		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	To bear the following commissions to the Japanese bank for banking services based upon the B/A (Banking Arrangement)		
	1) Advising commission of A/P (Authorization to pay)		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
10	To accord Japanese nationals, whose service 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 the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts		●
12	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant		●
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

(2) In the Explanation Mission of Draft Final Report

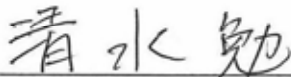
MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR DEVELOPMENT OF SOUTHERN OUTLYING STATE
IN THE REPUBLIC OF PALAU
(EXPLANATION ON THE DRAFT REPORT)

In August 2005, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Development of Southern Outlying State in Palau (hereinafter referred to as "the Project") to the Republic of Palau (hereinafter referred to as "Palau"), and through discussions, site survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

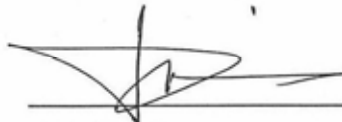
In order to explain and to consult the Government of Palau on the contents of the draft report, JICA sent to Palau the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Tsutomu Shimizu, Project Management Group III, Grant Aid Management Department, JICA, from November 4, 2005 to November 8, 2005.

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

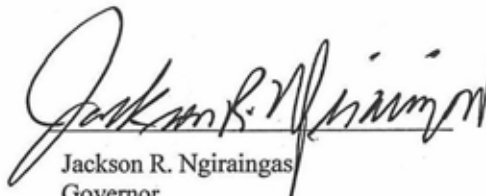
Koror, November 7, 2005



Tsutomu Shimizu
Leader
Draft Report Explanation Team
Japan International Cooperation Agency



Fritz Koshiha
Minister
Ministry of Resources and Development
Republic of Palau



Jackson R. Ngiraingas
Governor
Peleliu State Government

ATTACHMENT

1. Contents of the Draft Report

The Government of Palau agreed and accepted in principle the contents of the draft report explained by the Team.

2. Japan's Grant Aid Scheme

The Government of Palau understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Palau as explained by the Team and described in Annex-3 and Annex-4 of the Minutes of Discussions signed by both parties on August 12, 2005.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Palau by January 2006.

4. Other Relevant Issues

4-1. Obligations of the Palau side

- 1) The Government of Palau shall obtain the environmental permit from the Environmental Quality Control Board and send it to JICA Palau Office by November 24, 2005.
- 2) The Government of Palau shall complete following arrangements necessary for the Project by November 11, 2005.
 - (a) Certificate of Land Use Right
 - (b) State Authorizations
 - (c) Historic Preservation Office Clearance
- 3) The Government of Palau shall prepare other relevant permit promptly.
- 4) The Government of Palau shall prepare temporary yard and dumping sites as follows before the commencement of construction works.
 - (a) Temporary construction yard of 1,000 m² adjoining to the coast in Koror state
 - (b) Temporary construction yard of 19,000 m² including dumping site adjoining to south ward of North Dock in Peleliu State
 - (c) Other dumping sites of more than 10,000 m² for dredging sand in Peleliu State
- 5) The Government of Palau shall provide boundary fence around temporary construction yards in Peleliu and Koror State before the commencement of construction works.
- 6) The Government of Palau shall level temporary construction yard and dumping sites in Peleliu State including removal of trees and other obstacles before the commencement of construction works.
- 7) The Government of Palau shall remove or relocate existing obstacles at the Project site, such as the floating jetty, and secure temporary jetty for the Peleliu boats unloading/loading during the construction period. In addition, coordination between the contractor and the Peleliu State Government will be executed.

8) The Government of Palau shall remove it with its own expense, if any dangerous metal object like UXO would be found in the Project site during the construction works.

4-2. Recommendation of Operation and Maintenance of the Facilities after Handover

- 1) Ministry of Resources and Development and Peleliu State Government will conclude a memorandum of understanding to secure proper operation and maintenance of the facilities of the Project.
- 2) Peleliu State Government shall be responsible for the operation and maintenance of the facilities of the Project. Peleliu State Government shall check the condition of facilities periodically and conduct minor repairs and maintenance works including partial dredging.
- 3) Ministry of Resources and Development shall provide technical and budgetary support when large scale of repair would be required.
- 4) The Government of Palau shall conduct monitoring the marine topographic change by periodical bathymetric survey with technical support from the Bureau of Land and Survey. The Government of Palau promised to make necessary arrangement for such survey and maintenance dredging.

4-3. Both parties agreed to revise the Project title to "Project for the Improvement of North Dock of Peleliu State, Elochl".

4-4. Ministry of Resources and Development will consult authorities concerned to establish refund system of internal taxes and other fiscal levies, which would be imposed on the local procurement of materials and equipment by Japanese nationals for the Project.

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Appendix 5. Cost Estimation Born by the Recipient Country

(1) Obligation by Palau side during the Implementation Stage

Palau side shall bear following costs for the implementation of the project.

Table A 5-1 Cost Estimation Born by Palau side during the Implementation Stage

Contents	Quantity	Estimated Cost(US\$)	Responsible Agency
1.Maintenance of Temporary Construction Yard	23,000m ²	18,000	Bureau of Marine Resources
2.Facility of Safety Control	1km	1,000	
3.Road Maintenance	1km	1,000	Public Works
4.Banking Arrangement and Others	1 Ls	5,500	Bureau of Marine Resources
Total		25,500	

(2) Obligation by Palau side after handing-over the Project

Palau side shall bear following costs after handing-over the project.

Table A 5-2 Cost Estimation of Annual Maintenance Cost

Contents	2007(US\$)
1. Maintenance Dredging for Turning Basin & Access Channel (dredging volume is prospected 4,300 m ³ .) Charterage of tag boat and dredger+Crew	30,710
2.Maintenance Pier Facilities (e.g. rubber fender, mooring chain, bollard etc.) Paints, rust removal and consumable parts	4,520
3.Maintenance Navigation Light (LED light, battery etc.) Paints, rust removal and consumable parts	3,610
Total Cost	38,840

Appendix 6. Other Relevant Data, Appendix 6-1. Relevant Information of Contents of the Project
 Appendix 6-1-1. Check List of Contents of the Project (Requested Facilities and Medical Equipment)

Check List of Contents of the Project (Facilities) by Japan side on September 29, 2005

No.	Contents of the project requested by Palau	Subjects	Necessity	Feasibility	Urgency	Maintenance		Results of the Examination
						Management	Maintenance	
			Waiting Time or Berthing Numbers of Boats and Vessel	Increasing of Berthing Boats, Passengers or Cargos	Danger of Navigation, Frequency of Accident, Collapse of Existing Structure	Securing of Budget and Manpower, Existence of Organization and Management Plan	Securing of Budget and Manpower, Existence of Organization and Maintenance Plan	
1	Pier extension and dredging of anchorage							
1-1	New pier: extension 45m, Corner part 5m		A	A	A	B	B	(A)
1-2	Dredging of anchorage in front of new pier (-2.5m)		A	A	A	B	C	(A)
1-3	Dredging of existing anchorage: (water depth -1.5m + allowance 0.5 = 2.0m)		A	A	B	B	C	(B)
1-4	Dredging of water channel: (former R2, R4, R5 area extension, 1,080m center, water depth-2.0m)		A	A	A	B	C	(A)
2	Ramp way for landing							
	A Ramp way for landing of cargo carrier is built. Front edge + 1.0m, width x length = 6m x 8m		A	A	A	B	B	(A)
3	Slipway							
	A slipway for repair of boats will be built. Water depth at front edge -1.5m, width x length = 4.5m (0.3m x 10m)		B	B	C	B	C	(B)
4	Navigation Aids							
	A navigation aid equipped with a solar panel will be built at the intersection between the artificial and natural channels		A	B	B	B	C	(B)
5	Fishermen's assembly house							
	The structure of the facility is a 60 m ² - meeting room with a 40m ² - semi outdoor work space.		C	C	C	B	B	(C)
6	Embankment in East ward coast of North Dock		A	C	B	B	C	(B)

(Notes: High Priority or Less Difficulty A>B>C Low Priority or High Difficulty)

Check List of Contents of the Project (Equipment for Health Center) by Japan side on September 29, 2005

No.	Contents of the project requested by Palau	Subjects	Necessity					Feasibility			Urgency		Operation		Maintenance		Results of the Field Study	
			Demand of Medical Service, Medical Apparatus and Medicine	Congestion of Dispensary, Category of Disease and Hurt	Record of Accidents and Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.	Record of Patient, Number of existence in Belau National Hospital.		Record of Patient, Number of existence in Belau National Hospital.
7	Provision of materials and equipment for dispensary																	
7-1	Dynamap Monitor (Indirect Blood Pressure Monitors)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	More than 10 equipments are existed in Belau National Hospital.
7-2	Portable X-Ray Machine (70mm for Chest)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2 equipments are existed in Belau National Hospital. The physician in Peleliu reports that he needs retraining to operate it.
7-3	Table Top Sonogram (Ultrasonic Diagnostic)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2 equipments are existed in Belau National Hospital. The physician in Peleliu reports that he can operate it with limited function.
7-4	Table Top Electrolyte Machine		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	This is the medical testing equipment of blood and not curing equipment to the patients. The physician in Peleliu reports that the equipment will need the cost to operate the equipment. There is the same equipment in Belau National Hospital. Laboratory technologist will be requested to operate it.
7-5	Basic CBC Analyzer (Automatic Blood Cell Counter)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	This is the medical testing equipment of blood and not curing equipment to the patients. Retraining is requested by the doctor in Peleliu. There are 2 of the same in Belau National Hospital. Laboratory technologist will be requested to operate it.
7-6	2 Nos of IV Drop Machine (Infusion Pump)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	More than 10 of the same equipments are existed in Belau National Hospital. Difficulty to use existing liquid dropping pole in Peleliu Dispensary in stead of this equipment due to lack of nurse is expressed.
7-7	Suction Machine		B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	More than 10 of the same equipments are existed in Belau National Hospital.
7-8	Electric O ₂ Concentrator		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5 equipments are existed in Belau National Hospital.
7-9	Tympanogram (Audiometer)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3 equipments are existed in Belau National Hospital. One of the equipment is stored in BNH.
7-10	Pulmonary Function Test (Spirometer)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3 equipments are existed in Belau National Hospital.

7-11	4 Nos. of Nebulizers		B	C	C	C	C	C	C	C	B	(C)	More than 8 of the equipments are existed in Belau National Hospital.
7-12	5 Nos. of Hospital beds with arm Table		C	C	C	C	C	C	C	C	B	(C)	There are already 4 beds without table in Peleliu Dispensary.
7-13	Portable Dental Unit		C	C	C	C	C	C	C	C	C	(C)	There are 7 of the same unit in Belau National Hospital and Super Dispensary in Koror.
7-14	Portable Heat Monitor with Defibrillator capability		C	C	C	C	C	C	C	C	B	(C)	There are more than 10 equipment in Belau National Hospital. Also there is 1 of the equipment which carried into Peleliu Dispensary on August 11 after repair.
7-15	Complete Emergency Kit		C	C	C	C	C	C	C	B	B	(C)	3 of the equipment are existed in Belau National Hospital. Existing kit in Peleliu is lack of medicine and equipment. Maintenance and logistics of medicine and equipment by BNH will be necessary.
7-16	Digital Tonometer		C	C	C	C	C	C	C	B	C	(C)	This is the medical testing equipment of eye and not curing equipment to the patients.
7-17	Digital Otoscope		C	C	C	C	C	C	C	B	C	(C)	This is the medical testing equipment of ear and not curing equipment to the patients.
7-18	Digital Ophthalmoscope		C	C	C	C	C	C	C	C	B	(C)	More than 10 of the equipments are existed in Belau National Hospital.
7-19	10 Nos. of Gulcometers		B	C	C	C	C	C	C	C	C	(C)	There is a fixed type of the equipment in Belau National Hospital. It is required to continue to buy reagent of the equipment although it is expensive.
7-20	10 Nos. of Blood Pressure Cuff with Large Belt		C	C	C	C	C	C	C	C	B	(C)	More than 10 equipments are existed in Belau National Hospital. Also there are 3 equipments which carried into Peleliu Dispensary on August 11 after repair.
7-21	5 Nos. of Stethoscope		C	C	C	C	C	C	C	C	B	(C)	This is the basic equipment of doctors and nurses.
7-22	Backup Power Supply		C	C	C	C	C	B	C	B	C	(C)	Maintenance of the equipment is difficult by Peleliu Dispensary. There are the facilities only in Belau National Hospital and Northern Super Dispensary in Palau.

(Notes: High Priority or Less Difficulty A>B>C Low Priority or High Difficulty)

Appendix 6-1-2. Final Check List of Requested Medical Equipment

Check List of Contents of the Project (Equipment for Health Center) by Japan Side on September 29, 2005

No.	Contents of the project requested by Palau	Subjects	Necessity	Feasibility	Urgency	Operation	Maintenance	Evaluation	Categorising the Medical Equipments in June 2005	Degree of Difficulty for Operation and Maintenance	Medical Reporting by JICA Palau Office on August 8	Detailed explanation on August 16 presented by Ministry of Health.	Interview on August 17	Medical Report No.1 issued on August 21	Discussion in Belau National Hospital on August 25	Medical Report No.2 issued on August 27	It was reported in Belau National Hospital on August 31	It was reported in Belau National Hospital on August	
			Demand of Medical Service, Medical Apparatus and Medicine	Congestion of Dispensary, Category of Disease and Hurt	Record of Accidents and Patient, Number of existence in Belau National Hospital.	Securing of Budget and Specialist, Existence of Organization and Operation Plan	Securing of Budget and specialist, Existence of Organization and Maintenance		Suggested by Madical Collage in Tokyo	Suggested by Madical Collage in Tokyo	Member of JICA Palau Office	Staffs of Belau National Hospital	Medical Doctor of Southern Community Health Center	Medical Doctor of Southern Community Health Center	Staffs of Belau National Hospital	Medical Doctor of Southern Community Health Center	Bio Meditech Engineer in BNH	Bio Meditech Dealer in BNH	
6	Provision of materials and equipments for dispensary																		
6-1	Dynamap Monitor (Indirect Blood Pressure Monitors)		C	C	C	C	B	(C)	For Primary Care	Advanced Skill and Technology are not necessary							17 equipments are registered in Belau National Hospital.	There are 1 equipment in the Health Center, 3 in Belau National Hospital (BNH) and 1 in ambulance.	
6-4	Portable X-Ray Machine (70mm for Chest)		C	C	C	C	C	(C)	For Primary Care	Advanced Skill or Technology are required	No Radiologist and Radiography technician in Peleliu State	C-Arm type with processor will be requested. Or 70mm chest X ray machine will be alternated.	There is no developping room in Health Center. 70mm chest X ray machine will be preferred than C-arm type. Priority Ranking No.8	Able to use and operate it with some retraining required.	Training for the operation will be able to done in Koror.		2 equipments are registered in Belau National Hospital.	There are 2 equipments in BNH.	
6-5	Table Top Sonogram (Ultrasonic Diagnostic)		C	C	C	C	B	(C)	For Primary Care	Advanced Skill and Technology are not required			Priority Ranking No.7	Able to use and operate it with limited fucntions	Training for the operation will be able to done in Koror.		4 equipments are registered in Belau National Hospital.		
6-6	Table Top Electrolyte Machine		C	C	C	C	C	(C)	For Primary Care	Advanced Skill or Technology are required	No Laboratory Medical Technologist in Peleliu State.	The equipment is required advanced technique for maintenance.		Reagents might be a cost factor hindering the full utilization of the machine.			1 equipment is registered in Belau National	There is 1 equipment in BNH.	
6-7	Basic CBC Analyzer (Automatic Blood Cell Counter)		C	C	C	C	C	(C)	For Primary Care	Advanced Skill or Technology are required			Priority Ranking No.6	Basic work up for fever in baby clinics. With retraining able to operate			2 equipments are registered in Belau National Hospital.	There is 1 equipment in BNH.	
6-10	2 Nos. of IV Drop Machine (Infusion Pump)		C	C	C	C	B	(C)	For Secondary Medical Care	Advanced Skill and Technology are not necessary	Ordinal matal pole with liquid pack for dropping will be alternative.		Priority Ranking No.5	With the doctor working alone this machine would greatly assist in delivering the required amounts of fluids especially for pediatric patients.	Nurse is dispatched to Peleliu once a month. And the medical doctor will be dispatched by the request.		15 equipments are registered in Belau National Hospital.	There are more than 10 equipments in BNH.	
6-11	Suction Machine		B	C	C	C	B	(C)	For Secondary Medical Care	Advanced Skill and Technology are not necessary				This equipment is used especially for management of acutely ill unconscious patient. And also with proper tips used to remove foreign objects/discharges in nose and in ears including impact cerumen removal		There is 1 equioment in Health Center in Peleliu.	13 equipments are registered in Belau National Hospital.	There are more than 10 equipment sin BNH.	
6-12	Electric O2 Concentrator		C	C	C	B	B	(C)			O2 cylinder will be alternative.		Priority Ranking No.1	This is a priority need. Frequency of Oxygen usage 3-5 times per week especially asthmatics	Transportation of O2 cylinder between Koror and Peleliu is difficult. Frequency of transportation of O2 cylinder will be reduced by the equipment	There is 1 portable equioment in Health Center in Peleliu.	5 equipments are registered in Belau National Hospital.	There are apploximaety 8 equipments in BNH.	
6-15	Tympanogram (Audiometer)		C	C	C	C	B	(C)	For Secondary Medical Care	Advanced Skill and Technology are not necessary	Difficult to find the demand in Peleliu State		Priority Ranking No.2	It is very useful in assessing the hearing of head start and elementary students.			1 equipment is registered in Belau National Hospital.	There are 3 equipments in BNH. 1 of them is stored in	
6-16	Pulmonary Function Test (Spirometer)		C	C	C	C	B	(C)						Utilization would be very much restricted to management of Asthmatic patients. However there are few cases requiring differentiation between the lung pathologies ie COPD vs Asthma etc			3 equipments are registered in Belau National Hospital.	There are 2 equipments in BNH.	
6-17	4 Nos. of Nebulizers		B	C	C	C	B	(C)			For Respiratory Diseases			Heavily utilized in Peleliu		There is 1 equioment in Health Center in Peleliu.	3 equipments are registered in Belau National Hospital.	There are apploximaety 8 equipments in BNH.	
6-18	5 Nos. of Hospital beds with arm Table		C	C	C	C	B	(C)					There are 4 beds without side table. Priority Ranking No.10	Currently there are four old beds without arms. There is no place for patients/or the Dr to place items for the patient eg BP cuff, thermometer etc.					
6-19	Portable Dental Unit		C	C	C	C	C	(C)	For Primary Care	Advanced Skill and Technology are not necessary	One equipment purchased in two years ago had not been used for 1 year.			Depends on availability of Dental Personnel	Dentist is dispatched to primary school in Peleliu to check the teeth condition once a year.		7 equipments are registered in Belau National	There are 1 equipment in the Health Center and 1	
6-21	Portable Heat Monitor with Defibrillator capability		C	C	C	C	B	(C)	For Primary Care	Advanced Skill and Technology are not necessary	People can operate with knowredge. Mentenance has problem like broken the equipment by overcharging.			Although this item probably would be under utilized. The reality remains. Peleliu/Angaur are transported by boat and some times rough seas that a premature baby would succumb to the harsh environment of the evacuation process itself.		There is 1 equioment without monitor in Health Center in Peleliu.	29 equipments are registered in Belau National Hospital.	There are 1 equipment in the Health Center and 3 in BNH.	
6-22	Complete Emergency Kit		C	C	C	B	B	(C)	For Primary Care	Advanced Skill and Technology are not necessary			Priority Ranking No.3	An emergency kit to replace the current kit that is not fully accomodated and unsafe to carry around.			3 equipments are registered in Belau National Hospital.		
6-23	Digital Tonometer		C	C	C	B	C	(C)	For Primary Care	Advanced Skill or Technology are required	No Oculist in Peleliu, Difficult to find the demand in Peleliu State		Priority Ranking No.9	Acute Eye pain requiring urgent exclusion of Glaucoma			There is no registration in Belau National Hospital.		
6-24	Digital Otoscope		C	C	C	B	C	(C)	For Secondary Medical Care	Advanced Skill or Technology are required	No Otolaryngologist in Peleliu			Ear infection is very common amongst childrens and adults.			There is no registration in Belau National Hospital.	There are more than 10 equipment sin BNH.	
6-25	Digital Ophthalmoscope		C	C	C	C	B	(C)	For Primary Care	Advanced Skill or Technology are required	No Oculist in Peleliu, Flash light will be alternative.		Priority Ranking No.4	DM,HTN is very common on the island therefore the associated complications fall sick easier. This equiptment will expedite the detection of the complications.			1 equipment is registered in Belau National Hospital.	There are more than 10 equipment sin BNH.	
6-27	10 Nos. of Gulcometers		B	C	C	C	C	(C)	For Primary Care	Advanced Skill or Technology are required	Contentious supply of reagent will be requested.			It is necessary for Quick glucose determination in emergency situations and diabetic clinics and inpatient management of Diabetic patients		There is 1 equioment in Health Center in Peleliu.	1fixed type equipment is registered in Belau National Hospital.	There is 1 fixed type equipment in BNH.	
6-28	10 Nos. of Blood Pressure Cuff with Large Belt		C	C	C	C	B	(C)	For Primary Care	Advanced Skill and Technology are not necessary	It will be necessary 2 at least. There are some blood pressure cuffs.	Large belt type will be requested.		Extra Large arm cuff would be ideal for persons that have big arms in Peleliu and the Southern Region.			1 large arm type equipment is registered in Belau National Hospital.	There are 3 normal size equipments in the Health Center and 10 in BNH.	
6-29	5 Nos. of Stethoscope		C	C	C	C	B	(C)	For Primary Care	Advanced Skill and Technology are not necessary	All of doctor or medical staff will needs to procure by themselves because it is very basic and symbolic devise for medical person.			Numbers of consultation is averaging 300-400 per month in Peleliu					
6-New	Backup Power Supply		C	C	B	B	C	(C)						Electric power is cut once a week. Back-up electric supply system is requested for treatment room and pharmacy.	Back-up generator was not able to procure in the Health Center due to limitation of budget.				

(Notes: High Priority or Less Difficulty A>B>C Low Priority or Much Difficulty)