


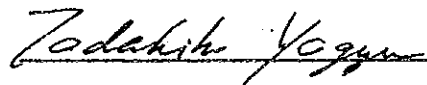
SCOPE OF WORK
FOR
THE STUDY
ON
COASTAL PROTECTION AND PORT IMPROVEMENT
IN
THE COOK ISLANDS

AGREED UPON BETWEEN
MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

APRIL 17, 1991
Rarotonga
THE COOK ISLANDS



Mr Richard C Chapman
Acting Secretary
MINISTRY OF PLANNING AND
ECONOMIC DEVELOPMENT



Dr. Tadahiko Yagyu
Leader of the
Preliminary Study Team
JAPAN INTERNATIONAL
COOPERATION AGENCY

I. INTRODUCTION

In response to the request of the Government of the Cook Islands, the Government of Japan has decided to implement the Study on Coastal Protection and Port Improvement in the Cook Islands (hereinafter referred as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of the Cook Islands.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVE OF THE STUDY

The objective of the Study is to carry out the study on coastal protection and port improvement at Rarotonga Island in the Cook Islands from technical and economic point of view.

III. STUDY AREA

The Study shall cover the whole area of Rarotonga Island.

IV. SCOPE OF THE STUDY

In order to achieve the objective mentioned above, the Study shall cover the following items:

1. Collection, review, and analysis of the existing data, information, and reports relevant to the Study.
2. Site surveys for the Study, if necessary.
 - 1) topographical data
 - 2) geological and geophysical data
 - 3) hydrological and hydraulical data
 - 4) hydrographical data
 - 5) meteorological data
 - 6) port activity, facilities and equipment
 - 7) land use

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8)coastal erosion

3.Master Plan for the period up to the year 2010.

A Master Plan for the port improvement of the Avarua-Avatiu port area(hereinafter referred to as "the Port Area")

- 1)port traffic forecast
- 2)projection of land requirement
- 3)basic layout plan of the major port facilities
- 4)land use plan
- 5)rough design and cost estimate
- 6)phased development plan

B Coastal conservation plan for the Rarotonga Island.

- 1)setting up area for the conservation plan
- 2)clarification of mechanism of erosion
- 3)selection of suitable countermeasures

4.Feasibility Study for the period up to the year 1997.

A Feasibility Study on the short term port improvement plan of the Port Area.

- 1)detailed layout plan of the major port facilities
- 2)preliminary design and cost estimate
- 3)economic analysis
- 4)implementation program
- 5)recommendation on port management and operation system

B Coastal protection plan from disaster.

- 1)basic layout plan of coastal protection facilities
- 2)preliminary design
- 3)cost estimate for construction, operation and maintenance
- 4)economic analysis
- 5)construction, operation and maintenance program

5.Conclusion and recommendation.

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V. STUDY SCHEDULE

The Study shall be carried out in accordance with the attached tentative schedule.

VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of the Cook Islands.

1. Inception report

Twenty(20)copies within one(1)month after the commencement of the Study.

2. Interim Report

Twenty(20)copies within four(4)months after the commencement of the Study.

3. Draft Final Report

Twenty(20)copies within six(6)months after the commencement of the Study. The Government of Cook Islands will submit its comments on the report to JICA within thirty(30)days after receipt of the Draft Final Report.

4. Final Report

Fourty(40)copies within one(1)month after receipt of the comments on the Draft Final Report.

VII. UNDERTAKINGS OF THE GOVERNMENT OF THE COOK ISLANDS

1. To facilitate smooth conduct of the Study, the Government of the Cook Islands shall take necessary measures;

- 1) to secure the safety of the Japanese study team (hereinafter referred to as "the Team").
- 2) to permit the members of the Team to enter, leave, and sojourn in the Cook Islands for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees.

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- 3) to exempt the members of the Team from taxes, duties, fees, and other charges on equipment, machinery, and other materials brought into the Cook Islands for the conduct of the Study.
 - 4) to exempt the members of the Team from income tax and other charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study.
 - 5) to provide necessary facilities to the Team for remittances as well as utilization of the funds introduced into the Cook Islands from Japan in connection with the implementation of the Study.
 - 6) to secure permission for entry into private properties or restricted areas for the conduct of the Study.
 - 7) to secure permission for the Team to take all data and documents (including photographs) related to the Study out of the Cook Islands to Japan.
 - 8) to provide medical services as needed. Its expenses will be chargeable to the members of the Team.
3. The Government of the Cook Islands shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Team.
4. Ministry of Planning and Economic Development shall act as a counterpart agency to the Team and also as a coordinating body in relation with other Governmental and non-governmental organizations concerned for the smooth implementation of the Study.
5. Ministry of Planning and Economic Development shall provide the Team with the followings in cooperation with other organizations concerned;
- 1) available data and information related to the Study.
 - 2) counterpart personnel.
 - 3) suitable office with necessary office equipment in Rarotonga.

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- 4) credentials or identification cards
- 5) available vehicles with drivers necessary for the implementation of the Study.

VIII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. to dispatch, at its own expense, the Team to the Cook Islands.
2. to pursue technology transfer to the Cook Islands counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and Ministry of Planning and Economic Development shall consult with each other in respect of any matter that may arise from or in connection with the Study.

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TENTATIVE SCHEDULE

Months	1	2	3	4	5	6	7	8	9
Fork in Cook is.									
Fork in Japan									
Reports	△				△			△	△
	IC/R				IT/R			DF/R	F/R

Remarks : IC/R...Inception Report
 IT/R...Interim Report
 DF/R...Draft Final Report
 F/R...Final Report

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MINUTES OF MEETING ON
SCOPE OF WORK
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Dr. Tadahiko Yagyu
Leader of the
Preliminary Study Team
JAPAN INTERNATIONAL
COOPERATION AGENCY

The Japanese Preliminary Study Team headed by Dr. Tadahiko YAGYU visited the Cook Islands for the purpose of discussing the Scope of Work for the Study on Coastal Protection and Port Improvement, from April 9th to April 17th, 1991.

The Team had a series of discussions with the representatives of the Ministry of Planning and Economic Development and other agencies concerned for exchanging the views and opinions, and conducted field surveys in the study area.

The list of attendants of the meeting is attached hereto.

As the results of the above, the both sides have confirmed the following points.

Aerial Photographs

The available information referred to in the Section IV 5 (1) will include aerial photographs.

Steering Committee

The Cook Islands Government will organise a Steering Committee which will be chaired by the Acting Secretary of the Ministry of Planning and Economic Development to co-ordinate all matters related to the Study.

Definition of the Port Area

The Port Area defined under the Section IV.3A includes both Avarua and Avatiu ports and an area between the two ports.

Area to be formulated the coastal protection plan

The coastal protection plan from disaster under the Section IV.4B will be formulated for coasts adjacent to the Avarua-Avatiu town which are considered to be important for Rarotonga island.

The abovementioned coasts may include a coast line up to the airport.

Financial Analysis

Since financial analysis is required for obtaining a financial assistance from international financing institutes, the feasibility study on the short term port improvement plan of the Port Area under the Section IV.4A will include a preliminary financial analysis.

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Schedule of the Full Scale Study Team

The Government of the Cook Islands requested the visiting Team that a Full Scale Study Team commence the work on the Study as soon as possible.

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ATTENDANTS LIST

1 JAPANESE SIDE:

Dr. Tadahiko Yagyu	Leader
Mr Tadayoshi Kawazoe	Member
Mr Yutaka Matsubara	Member
Mr Ken-ichi Torii	Member
Mr Masahiro Yokokawa	Member
Mr Masayuki Koike	Member

2 COOK ISLANDS SIDE:

1 Mr Richard C Chapman (Chairman)	Acting Secretary Ministry of Planning and Economic Development (MOPED)
2 Mr Aukino Tairea	Secretary Ministry of Foreign Affairs
3 Mr George Cowan	Secretary Ministry of Works (MOW)
4 Mr Oliver Peyroux	Chief Surveyor Survey Department
5 Mr Don Dorrell	Consultant to the Prime Minister on Coastal Protection
6 Mr Poko Tutaka	Deputy Secretary Ministry of Trade Labour and Transport (TLT)
7 Mr Ben Parakoti	Engineering Officer Ministry of Trade Labour and Transport (TLT)
8 Mr Teariki Rongo	Director Conservation Service
9 Mr Vaitoti Tupa	Conservation Officer Conservation Service
10 Mr Stuart Kingan	Scientific Officer/Consultant
11 Dr Charito Chapman	Senior Research Economist Ministry of Planning and Economic Development (MOPED)

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12 Mr Brent Dark

Development Economist
Ministry of Planning and Economic
Development (MOPED)

13 Mr Tai Manuela

Director of Programmes/Planning
Ministry of Planning and Economic
Development (MOPED)

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対処方針

< 項目 >

< 対処方針 >

1. 調査の名称
和文名を“クック諸島海岸保全・改良計画調査”とし、英文名を“Study on Coastal Protection and Port Improvement in the Cook Islands”とする。
→先方T/Rは、マスタープランの要請を掲げているが、調査内容は、M/P+F/Sであることから、単にStudyとする。
先方より強い変更要請があった場合英文調査名の変更もありうる。
2. 調査の内容
基本的にはS/W案に記載の内容で提案するが、現地踏査の結果、調査内容の基本部分の変更とはならないと判断される場合には、調査団に於いて修正できるものとする。
3. 報告書
以下の報告書を作成するものとする。
 - a Inception Report 英文版20部
(調査実施方針・スケジュール等を記載、調査開始後1ヶ月)
 - b Interim Report 英文版20部
(Master Planの概要を記載、調査開始後5ヶ月)
 - c Draft Final Report 英文版20部
(最終案を記載、調査開始後7ヶ月)
 - d Final Report 英文版40部
(dに対するコメントを踏まえた最終報告書上記コメント受領後1ヶ月)→先方の要請書には報告書に関する記述が欠落しているので、我が方より上記を提案する。部数については、必要に応じて変更できるものとする。
4. 調査日程
調査期間は9ヶ月程度とする。S/WのTENTATIVE SCHEDULEの通り。

5. C/P研修員 C/P研修員受入れの要請があった場合、その内容をM/Mに記載することで対応する。
→平成3年度後期分については、既に1名分の枠を確保済みにつき、A2-3Formの提出を要請する。
6. その他
- 1) アンダーテイキングの内容の変更等については、請訓する。
→請訓の具体的な方法につき事前に確認の要がある。
 - 2) 調査内容の大規模な変更については、請訓する。
 - 3) 技術的な事項については、調査団の権限で対応できるものとする。
 - 4) 本格調査の実施時期については、平成3年度下半期を目途とするが明言は避ける。
 - 5) 本格調査では、環境問題に対する配慮が必要になると思われるので、現地にて内容を協議し必要に応じM/Mに記載する。

附属資料 5.

資料リスト (収集資料)

地域	太平洋州	調査団名又は 専門家氏名	クック諸島海洋保全・ 改良計画調査	調査の種類又は 指導科目	事前調査	作成部課	社調・社調一
国名	クック諸島	配属機関名		現地調査期間 又は採通期間	3年4月8日 ~ 3年4月20日	担当者氏名	小池 雅之

番号	資料の名称	形態	版型	ページ数	オリジナル コピーの別	部数	収集先名称又は 発行機関	寄贈・購入 (価格)の別	取扱区分	利用表示	利用者所属氏名	納入 予定日	納入 確認
1	計画・経済開発省の組織図		A-4	1	コピー	1	MOPED	寄贈	JR				
2	公共事業省・通産・運輸・労働省・ 郵便局の組織・本体		A-4	3	コピー	1	"	"	"				
3	1987/88年度年次報告書	本	A-4	66	コピー	1	"	"	"				
4	1989/90・90/91年度公共事業省 歳出		A-4	8	コピー	1	"	"	"				
5	クック諸島での土地利用指定条例		B-5	2	コピー	1	"	"	"				
6	旧来の地主所有地の法人化に対す る土地取引条例		B-5	24	コピー	1	"	"	"				
7	土地取引修正条例 1973		B-5	2	コピー	1	"	"	"				
8	土地取引修正条例 1974		B-5	1	コピー	1	"	"	"				
9	港湾貨物取扱指定条例		B-5	5	コピー	1	"	"	"				
10	臨海部工業に関する条例		B-5	1	コピー	1	"	"	"				
11	港湾貨物取扱規則		B-5	3	コピー	1	"	"	"				
12	ラロトンガ島港湾使用料に関する 条例		B-5	6	コピー	1	"	"	"				
13	同上の修正条例 1976		B-5	3	コピー	1	"	"	"				
14	同上の再修正条例 1980		B-5	1	コピー	1	"	"	"				
15	土地区分規則		A-4	5	コピー	1	"	"	"				
16	ラロトンガ島の地図 1/25,000	図面	A-1	1	オリジナル	2	N.Z.測量庁	購入	"				
17	ラロトンガ島コンタママップ 1/20,000	"	A-1	1	オリジナル	1	SOPAC	寄贈	"				
18	地形図(アパチュエーワクバイン) 1/1,000	"	"	1	コピー	1	DOS	"	"				

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19	ベンチマーク位置図	図面			1	コピー	1	DOS	寄贈	JR				
20	航測線図、測線位置図	"			1	コピー	1	"	"	"				
21	1/1,000 地形図(アパチュエー地区)	"			1	コピー	1	"	"	"				
22	ラロトンガ全島地形図 1/15840	"			1	コピー	1	"	"	"				
23	ラロトンガホテル付近深淺図	"			7	コピー	1	"	"	"				
24	サンセットホテル付近深淺図	"			1	コピー	1	"	"	"				
25	アパチュエー港内深淺図 1989	"	A-1		1	コピー	1	港務局	"	"				
26	"	"	A-1		1	コピー	1	"	"	"				
27	"	"	A-1		1	コピー	1	"	"	"				
28	"	"	A-1		1	コピー	1	"	"	"				
29	アパチュエー土質柱状図	"	A-1		1	コピー	1	"	"	"				
30	アバルア港深淺図 1989	"	A-3		1	コピー	1	"	"	"				
31	航空写真 鉛直 1/3,350	写真			3	コピー	1	DOS	"	"				
32	" 鉛直ステレオ 1/10,000	"			2	コピー	1	"	"	"				
33	ラロトンガ島 潮汐表 1991年		A-4		12	コピー	1	"	"	"				
34	" 潮位図		A-4		12	コピー	1	"	"	"				
35	南太平洋の港湾の土質 No.1	本	A-4		22	オリジナル	1	SOPAC	"	"				
36	" No.9	"	A-4		22	コピー	1	"	"	"				
37	ラロトンガ島の海岸形態論		A-4		40	コピー	1	"	"	"				
38	Circulation and blushing of Nea-tangia Harbour and Muri Lagoon		A-4		11	コピー	1	"	"	"				
39	Baseline Study for Coastal Management		A-4		16	コピー	1	"	"	"				
40	クック諸島の地質	本	A-4		103	コピー	1	N.N.-Geo-logical Survey	"	"				
41	ラロトンガ島の海岸近辺の調査		A-4		10	コピー	1	アジア太平洋経済社会委員会	"	"				

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42	Notes on late quaternary sea levels		A-4	5	コピー	1	SOPAC	寄贈	JR				
43	The biogeography of the Cook Islands Coral fauna		A-4	7	コピー	1	"	"	"				
44	Reef Islands of Rarotonga		A-4	13	コピー	1	The Smithsonian Institute	"	"				
45	Sedimentation in Ngatanga Harbour and Miri Lagoon		A-4	26	コピー	1	N. Z. 地質局	"	"				
46	Sea level changes and tectonics in the Middle Pacific		A-4	21	コピー	1	神戸大学	"	"				
47	A Hurricane warning is now in force for Rarotonga		A-4	10	コピー	1	クック島地理院	"	"				
48	南クック諸島の気候・天候	本	A-4	69	オリジナル	1	N. Z. 気象庁	"	"				
49	北クック諸島の気候・天候	本	A-4	45	オリジナル	1	"	"	"				
50	クック諸島での熱帯性サイクロン		A-4	11	コピー	1	ラロトンガ気象庁	"	"				
51	ラロトンガ島/アイタタキ島航空写真	写真	A-2	2	オリジナル	1	ラロトンガ航空	購入	"				
52	波浪資料 1980年	本	A-4	5	コピー	1	SOPAC	寄贈	"				
53	波高観測報告書 1987	"	A-4	80	コピー	1	"	"	"				
54	" 1988	"	A-4	80	コピー	1	"	"	"				
55	" 1989	"	A-4	80	コピー	1	"	"	"				
56	The Cook Islands-images of polynesia	"	A 4変形	44	オリジナル	1	Int'l Trust Co	購入	"				
57	Project Profile		A 4	26	コピー	1	MOPED	寄贈	"				
58	Cook Islands Vol. I	本	"	72	コピー	1	"	"	"				
59	" Vol. II	"	"	10	コピー	1	"	"	"				
60	" Vol. III	"	"	43	コピー	1	"	"	"				
61	Maps of the Cook Islands	"	A 4変形	19	オリジナル	1	Survey Dept.	"	"				
62	Government of the Cook Island Second Development Plan (1988~92)	"	A 4	117	オリジナル	1	MOPED	"	"				
63	MOPED 1981~88 Annual Report	"	"	66	オリジナル	1	"	"	"				
64	Avatiu Harbour	地図	A 1	1	コピー	1	TLT	"	"				

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65	Foreshore Development and Town Planning Map	地図	A1		2	コピー	1	TLT	寄贈	JR				
66	アパルア港航空写真	写真	A4		1	コピー	1	Mr. Dorrell	"	"				
67	アパチウ港資料		"		5	コピー	1	TLT	"	"				
68	潮位表		"		12	コピー	1	ハワイ大学	購入	"				
69	Aitutaki 島地図	地図	A1		1	オリジナル	1	N. Z. 測図庁	"	"				
70	Mangaia 島地図	"	"		1	オリジナル	1	"	"	"				
71	Manuae 島・Takutea 島地図	"	"		1	オリジナル	1	"	"	"				
72	Palmerston 島地図	"	"		1	オリジナル	1	"	"	"				
73	Penthyln 島地図	"	"		1	オリジナル	1	"	"	"				
74	Suvarrow 島地図	"	"		1	オリジナル	1	"	"	"				
75	クック諸島政府予算書 (Estimates) 1990年	本	B5		230	オリジナル	1	クック諸島政府	購入	"				
76	" " 1990年補追	"	"		72	オリジナル	1	"	"	"				
77	" " 1991年	"	"		222	オリジナル	1	"	"	"				
78	クック諸島政府 内閣 1989		A3		1	コピー	1	"	寄贈	"				
79	Economic Indicator 3 Qtr 1990		A4		5	コピー	1	"	"	"				
80	Preliminary Economic & Social Indicators		"		70	コピー	1	MOPED	"	"				
81	クック諸島 経済指標		"		5	コピー	1	"	"	"				
82	Sea Level Data NODC Bulletin 91-1		"		6	コピー	1	米 国 商務省	"	"				
83	Sea Level Monitoring Data	フロッピーディスク	MD 2HD			オリジナル	1	ハワイ大学	"	"				

附属資料 6. 本格調査に必要な資料の入手状況

本格調査に必要な資料の入手状況

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
	* 1. Authorities and Government Agencies concerned Administrative Organization Chart with Jurisdictional responsibilities and brief explanation	○	組織図/組織体系 MOPE D MOTLT MOW 郵便局	MOPE D (Ministry of planning and Economic Development)	
1	a) Ministry of Foreign Affaires				
2	b) Ministry of Planning and Economic Development				
3	c) Ministry of Trade Labour and Transport				
4	d) Ministry of Works				
5	e) Prime Minister's Department				
6	f) Department of Survey				
	2. Nationwide Socio Economic Data				
	(1) Statistics of the last ten years and forecast on national economy and economic indicators	○	年次報告書 (87/88)	MOPE D	有無の記号
7	a) GNP (if unavailable, GDP)	○	MOW歳出 (88/90, 90/91)	MOW	(○ ((事前調査時
8	b) Population				(△
9	c) Industrial products (by main sort)				((専門家派遣時
10	d) Foreign trade (export and import) values.				((J I C A 保有
	* (2) Materials of latest national economic development	△	第2次開発計画 (88~92)	MOPE D	
11	a) Authorized development plans of economics, industry, agriculture and tourism.	△	年次報告 (87/88)	MOPE D	
12	b) Development programs of transportation facilities (port, road, railway, etc.) c) Development programs of Housings and infrastructures	△	Foreshore Develop- ment and Town Planning Map.	MOW	

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先 又は 発行所	
13	d) Long term forecast of economic indicators (GNP: if revised, other indicator: if any)				
14	* (3) Annual budget (national total and by sector)				
15	* (4) Public investment by sector (results and plan)				
16	3. Transportation systems (1) Network maps of national transportation system Ports, road, railways, commercial flights.				
17	(2) Traffic flow data and forecasts of cargo/passengers by each mode				
18	(3) Transportation costs of each mode				
19	* (4) Development/improvement policies and plans for each mode				
20	(5) Related studies, if any (national transportation studies, etc)				
21	4. Port Activities in the Cook Islands * (1) Geographical distribution of ports	△	フバチウ港関連資料 (貨物、入港船舶、 所有船舶、図面)	TLT	
22	* (2) Functions and capacities of major ports				

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
23	* (3) Future development plan of major ports				
24	(4) Design and planning criteria				
25	(5) Port related budget				
26	a) Port construction budget b) Port maintenance budget				
27	* (6) Port traffic statistics of major ports				
28	a) Cargo volume b) Vessels				
29	(7) Origin and destination data for port cargoes				
30	(8) Port administration and management system				
31	* (9) Related studies, if any				
32	5. Avarua-Avatiu Port Area				
33	* (1) Port facilities a) Layout of facilities b) Inventory of facilities (type, dimensions, completion data) Protection facilities Channel and navigation aids Mooring facilities Storage facilities Cargo handling equipment Access roads	△ ○ ○ △	アバチウ港 (Map) アバチウ港深淺図 アバルア港深淺図 アバルア港航空写真	TLT TLT	

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
34 35	c) Construction history d) Technical standards for port facilities Design criteria Material and construction standards				
36	(2) Utilization a) The date opened for service, problems (degree of congestion, deterioration through aging, etc.) and requests made by users (forwarding companies passengers, etc.) of each of the facilities.				
37	* b) Agencies responsible for the operation of each of the facilities.	○	Waterfront Communi. 条例	TLT	
38 39	c) Restriction of vessel navigation d) Port tariff	○	Tariff 条例		
40	* (3) Land and coastal use in and around the Port area	○	土地利用指定条例	MOPED	
41 42	a) Land use at present and future development plan b) Main industrial facilities c) Transportation facilities and their development plans	○ ○	土地取引条例 土地区分規則	MOPED NZ 測量庁	

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
43	(4) Cargo traffic				
44	a) Cargo traffic statistics for the last 5 years. b) Origins and destinations of cargoes handled at the Port Area in the Cook Islands, or customs data available for this analysis.				
45	* (5) Ship statistics for the last 5 years	○	メモ	TLT	
46	(6) Passenger traffic for the last 5 years				
47	* (7) Cargo handling system a) Cargo handling operator b) Charge system c) Cargo handling method d) Working hours per day and number of sifts per day	○ ○	港湾貨物取扱規則 港湾貨物取扱指定 条例	TLT TLT	
48	(8) Financial state				
49	a) Port tariffs	○	ラロトンガ島の港湾 使用料条例	TLT	
50	b) Five year and annual budget c) Financial statements				
51	(9) Development/improvement plan				
52	* a) Implementation schedule	○	臨海部工業に関する 条例	MOPED	
53	* b) Basic policy and traffic forecast c) Major components of the plan and investment requirements				
54	* (10) Related studies and plans				

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
55	6. Coastal area in Rarotonga island * (1) Present situation of land and littoral sea use, and future plan. * (2) Facilities layout of coastal protection				
56	a) Geographical distribution of coastal protection.	○	ペンチマーク位置図	DOS	
57	b) As-built drawings of the coastal protection projects.	○	航測測線図 / 測量位置図	DOS	
58	c) Documents and criteria of the design for the projects.	○	海岸管理のための基準線調査	SOPAC	
59	(3) Topography and bathymetry at the coastal area	○	ラロトンガ島の海岸近辺の調査	アジア太平洋経・社・委	
60	a) Bathymetric contour map (historical maps of yearly & seasonal bottom change)	○	The Biography of the Cook Islands	SOPAC	
61	b) Historical change of shore line (yearly & seasonly variation)	○	Coral Bauna	スミソニアン研究所	
62	c) Historical maps of sounding & land leveling (yearly & seasonal variation)	○	Reef Islands of Rarotonga		
63	d) Historical aerophotographs of coastal area (yearly & seasonal variation)	○	ラロトンガ島の海岸形態論	SOPAC	
64	(4) Littoral drift a) Bottom sediments data Grain size analysis, specific gravity, boring data. b) Attested photographs of erosion (before and after erosion)	○	ナガタングキアノムリ地区ラグーンの淤砂 Sedimentation in Ngatanga Harbour and Murilagoon	SOPAC NZ地質局	

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
85	c) Records of erosion (eroded shore line, eroded lagoon bed, collapse of slope)				
86	d) Suspended load sampling, investigation of littoral drift by tracer				
	7. Natural conditions				
	* (1) Meteorological conditions				
87	a) Contour maps of atmospheric pressure	○	A Hurricane warning is now in force	クック地理院	
88	b) Wind data (wind speed, direction)		Rarotonga		
88	c) Whether conditions Climate, precipitation by month, by hour and other statistics data for whether	○	クック諸島の気候・天候	NZ気象庁	
70	d) Records of cyclone (include the contents of above a), b), c)	○	クック諸島での熱帯性サイクロン	ラロトンガ気象庁	
	* (2) Oceanographical conditions				
71	a) Wave data Wave height, wave direction, wave period. Determination of design waves which applied for past projects.	○	南方クック諸島の気候・天候	NZ気象庁	
72	b) Current data Distribution maps of current velocity and direction in the Lagoon Tidal current data	○	南方クック諸島の気候・天候	NZ気象庁	
73	c) Tide Tidal levels (Astronomical tide) Tide tables in 1991 Seiche data in the ports	○ ○	潮汐表(1991)/潮位図 Notes on late quaternary sea level Sea level changes and tectonics in the Middle Pacific	DOS SOPAC 神戸大学	

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
74	(3) Disaster by cyclones a) History of disasters and their detail description b) Photographs of disasters	△	Report on counter measures against coastal Harzards	JICA	
75		○	ラロトンガ島の地図 1/25,000	市販	
76		○	ラロトンガ島のコン ターマツプ 1/20,000	SOPAC	
77		○	地形図 (アバーチュー付近) 1/1,000	DOS	
78	* (4) Geographic Conditions a) Maps of sounding and land leveling b) Hydrographic maps at the ports c) Chart maps at the ports	○	地形図 1/15,840	DOS	
		○	深淺図(ラロトンガホ テル、サンセット ホテル付近)	DOS	
		○	アバチニュー港)	港湾局 (TLT)	
		○	アバルア港) 深淺図	DOS	
		○	航空写真 南太平洋港湾の土質	SOPAC	
78	(5) Geological and subsurface soil conditions	○	クック諸島の地質 アバチニュー港土質 柱状図	NZ地質測量庁 港湾局 (TLT)	
80	* a) Boring data, results of soil tests b) Bottom sediments data	○			

NO.	ITEM OF NECESSARY DATA	AVAILABILITY			備考
		有無	資料名	入手先又は発行所	
81	8. Laws and Regulations (1) Laws and related regulations				
82	(2) Agreement on the use of port by the Navy				
83	9. Construction and Maintenance (1) Management Organization for Construction and Maintenance.				
84	(2) Available construction material and the cost.				

