

部 数：英文 20部

提出時期：調査開始後12カ月以内

(5) ドラフトファイナルレポート

記載事項：残りの2航路分のフィージビリティ調査結果，調査全体に係る総合評価

部 数：英文 20部

提出時期：調査開始後16カ月以内

(6) ファイナルレポート

記載事項：ドラフトファイナルレポートに対するフィリピン国側のコメントを受け，
必要な追加及び修正を行ったもの

部 数：英文 50部

提出時期：コメント受理後2カ月以内

5-2 本格調査の留意事項

本格調査の内容や進め方について，I/A, M/M 及び現地での協議・打合せ事項を踏まえつつ取りまとめると次のとおりである。

(1) 調査対象地域

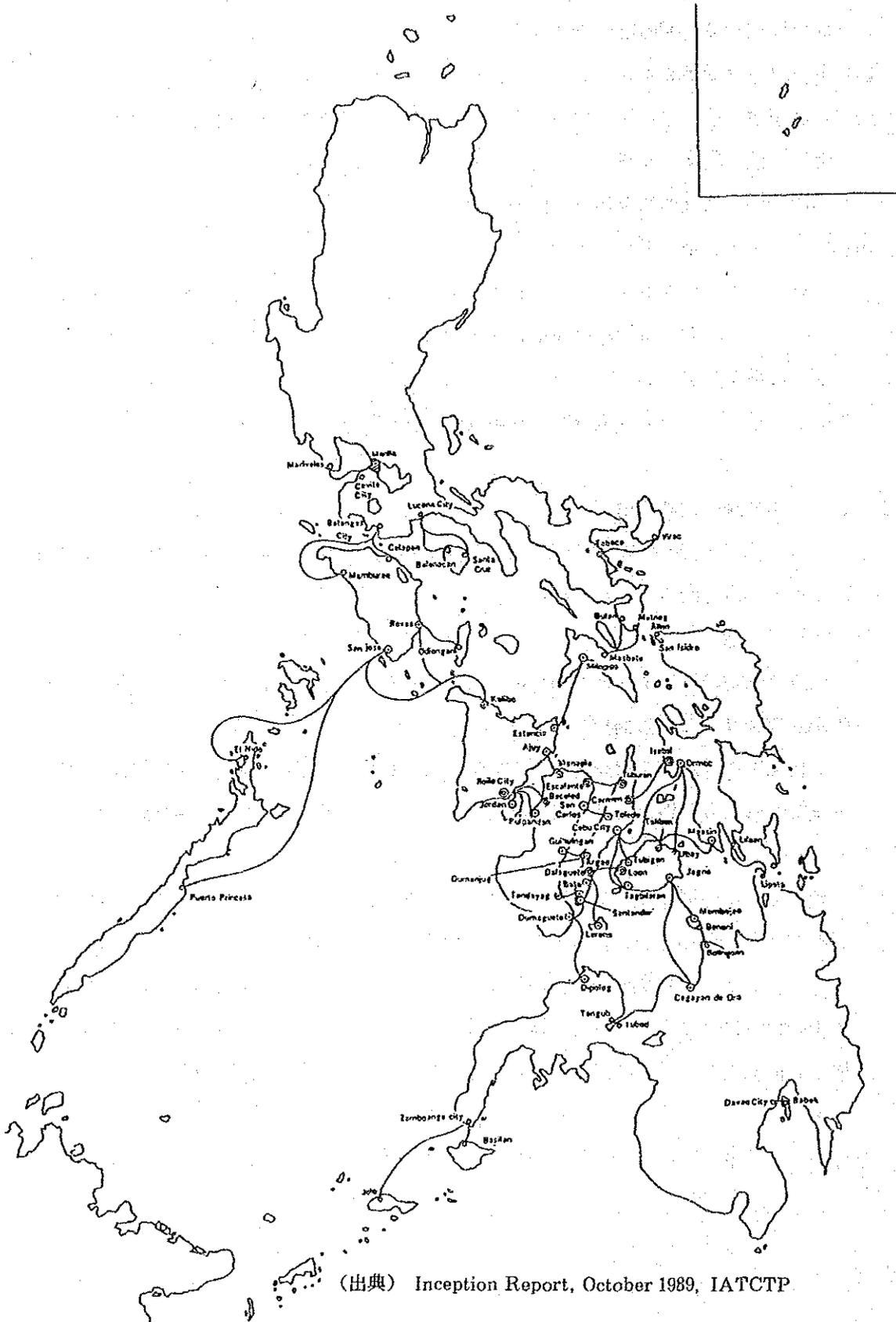
調査対象地域はフィリピン国全域としているが，実際上は，比側において作成済みのRoRo フェリー航路候補42ルート（図5-1，表5-1）が対象となる。

本格調査では，この42ルートが大前提とし，例えば地形的に新規港湾の建設が全く不可能であるような場合を除いて，調査対象ルートの変更を検討する必要はないものと考えてよい。

従って，本格調査の実施に当たっては，比側で行った本42ルートの選定に特に重要な問題がなかったかどうかを明らかにすればよいものと思われる。

また，フィージビリティ調査の対象ルートについては，事前調査時のM/Mにおいて比側の提案による4ルートを本格調査団がレビューし，プログレスレポート提出時（本格調査開始後3カ月）に決定することとしてフィリピン側と合意している。

LONG LIST OF POSSIBLE RORO ROUTES



(出典) Inception Report, October 1989, IATCTP

図5-1 RoRo フェリー航路候補

表5-1 RoRo フェリー航路候補リスト

Long List of Possible RORO Routes

ROUTE NO.	LINK	LENGTH (N.M.)	LOCATION	REGION	TERMINAL	T R A F F I C				
						PASSENGER '000	CARGO '000 MT	TERMINAL	PASSENGER '000	CARGO '000 MT
EXISTING RORO ROUTES										
1	Matnog - Allen	13.5	Sorsogon-M. Samar	V-VIII	Matnog			Allen		
					1985	113	163	1985	113	163
					1988	571	449	1988	571	449
2	Matnog - San Isidro	22.8	Sorsogon-M. Samar	V-VIII						
3	Batangas City - Calapan	22.8	Batangas-Dr. Kindoro	IV	Batangas			Calapan		
					1978	886	198	1978	765	155
					1979	748	172	1979		
					1980	638	187	1980	518	133
					1981			1981	554	194
					1982			1982	683	253
					1983	553	357	1983	769	321
					1986	688	421	1986	668	421
					1987	478	455	1987	479	455
					1988	596	461	1988	596	461
4	Liloan - Lipata	38.8	S. Leyte-Surigao	VIII-X	Liloan			Lipata		
					1988	198	549	1988	198	349
5	Argao - Looa	12.8	Cebu-Dabul	VII	Argao			Looa		
					1986			1986	92	26
					1987	53		1987	58	25
					1988			1988	48	26
6	Escalante - Tuburan	18.8	Negros Occ.-Cebu	VI-VII	Escalante			Tuburan		
					1986	96	185	1986		
					1987	98	145	1987	88	112
					1988	142	212	1988	122	137
7	Caraan - Isabel	65.8	Cebu-Leyte	VII-VI						
8	Tandayag - Bato	4.5	Cebu-Negros Or.	VII	Tandayag			Bato		
					1986	185	13	1986	185	13
					1987	223	8	1987	223	8
					1988	244	17	1988	244	17
9	Tahod - Taagub									
POSSIBLE ROUTES										
10	Iloilo City - Bacolod	24.8	Iloilo-Negros Occ.	VI	Iloilo			Bacolod		
					1978	689	672	1978		
					1979	645	792	1979		
					1980	1186	988	1980		
					1983	1414	955	1983	1488	415
					1986	162	639	1986	182	639
					1987	184	941	1987	184	941
					1988	128	838	1988	128	838
11	Iloilo City - Pulupandan	25.8	Iloilo-Negros Occ.	VI				Pulupandan		
								1988	2	291
								1983		167
12	Iloilo City - Jordan	4.5	Iloilo-Eniaraas	VI						

(出典) Inception Report, October 1989, IATCTP

(注) ○印は中西部ビサヤに出入する航路であり、OD調査の対象とする必要がある(全部で23ルート)

Long List . . . (Con't)

ROUTE NO.	LINK	LENGTH (N.M.)	LOCATION	REGION	T R A F F I C						
					TERMINAL	PASSENGER '83	CARGO '83 NY	TERMINAL	PASSENGER '83	CARGO '83 NY	
13	San Carlos - Toledo	12.8	Negros Occ.-Cebu	VI-VII	San Carlos			Toledo			
						1978	321	89	1978	296	22
						1979	381	63	1979	298	38
						1980	486	55	1980	343	24
						1983	376	59	1983		
						1986	289	46	1986		
14	Cebu City - Tubigon	22.8	Cebu-Bacol	VII	Cebu			Tubigon			
						1978	2164	2297	1978		
						1979	3172	2588	1979		
						1980	3124	2362	1980		
						1983	3693	2517	1983	532	38
						1986			1986		25
15	Santander - Danao	4.5	Cebu-Negros Or.	VII				Danao			
						1987			1987	297	47
						1988			1988	318	55
									1978	267	267
									1979	376	248
									1980	538	234
16	Danao - Dipolog	43.8	Neg. Or.-Zambo. d.N.	VII-IX							
17	Jaena - Cagayan de Oro	32.8	Bacol-Misamis Or.	VII-X	Jaena			Cag de Oro			
						1978			1978	425	366
						1979	211	29	1979	479	587
						1980	146	23	1980	464	584
18	Zamboanga City - Basilan	16.8	Zambo. d.S.-Basilan	IX	Zamboanga			Basilan			
						1978			1978	699	129
						1979	698	789	1979	611	138
						1980	1128	789	1980	533	116
						1981	967	758	1981		
						1982	858	578	1982		
19	Zamboanga City - Jolo	63.8	Zambo. del Sur-Sulu	IX				Jolo			
									1988	166	93
									1983	258	148
20	San Jose - Puerto Princesa	233.8	Occ. Mindoro-Palawan	IV	San Jose						
						1980	14	62			
						1981	23	91			
21	Cavite City - Mariveles		Cavite-Bataan	III-IV							
						1982	38	162			
22	Batasang City - Maaburao		Batasang Occ. Mindoro	IV							
23	Lucena City - Balanacan	28.8	Quezon-Morindaque	IV	Lucena			Balanacan			
						1978	228	71	1978	128	34
						1979	215	79	1979	128	31
						1980	228	23	1980	115	38
						1981	183	43	1981	92	14
						1982	194	42	1982	135	13
	1983	186	37	1983	183	18					

Long List . . . (Con't)

ROUTE NO.	LINK	LENGTH (N.M.)	LOCATION	REGION	T R A F F I C					
					TERMINAL	PASSENGER '88	CARGO '88 MT	TERMINAL	PASSENGER '88	CARGO '88 MT
24	Tabaco - Virac	34.0	Albay-Catanduanes	V	Tabaco			Virac		
					1978	119	74	1978	124	41
					1979	116	75	1979	121	42
					1980	41	74	1980	184	35
					1983	71	95	1983	72	39
					1984		34	1984		
25	Bulan - Masbate		Sorsogon-Masbate	V	Bulan			Masbate		
					1978	45	33	1978	128	115
					1979	59	22	1979	84	118
					1980	66	17	1980	111	115
					1983	57	23	1983	127	146
26	Milagros - Estancia		Masbate-Iloilo	V-VI						
27	San Jose - Kalibo		Occ. Mindoro-Aklan	IV-VI						
28	Cebu City - Ormoc		Cebu-Leyte	VII-VI				Ormoc		
								1978	275	124
								1979	299	188
								1980	329	98
								1983	392	138
29	Ubay - Ormoc		Bohol-Leyte	VII-VI						
30	Davao City - Bohol		Davao-Samal Island	XI	Davao					
					1978	213	837			
					1979	264	754			
					1980	183	676			
					1983	197	964			
31	Rozas - Odiongan	27.0	Mindoro Or.-Romblon	IV						
32	Rozas - Kalibo	68.0	Mindoro Or.-Aklan	IV-VI						
33	Matalog - Masbate	35.0	Sorsogon-Masbate	V						
34	Cebu - Talibon - Masina	68.0	Cebu-Bohol-Leyte	VII-X				Talibon		
								Masina		
					1980			1980	177	30
					1983			1983	148	25
					1986		43	1986		
					1987	136	58	1987		
					1988	154	56	1988		
35	Jagna - Maabayo	38.0	Bohol-Cariguan	VII-X						
36	Benoni - Balinongan	8.0	Cariguan-Missais Or.	X						
37	San Jose - El Niño	135.0	Mindoro Occ.-Palawan	IV						
38	Cebu City - Tagbilaran	22.0	Cebu-Bohol	VII				Tagbilaran		
								1978	482	283
								1979	433	218
								1980	565	185
								1983	580	289
39	Lucena City - Sta. Cruz	36.0	Quezon-Marinduque	IV				Sta Cruz		
								1978	79	37
								1979	76	34
								1980	95	35
								1981	57	25
								1982	62	25
								1983	63	24
40	Dalaguete - Larena	18.0	Cebu-Siquijor Island	VII						
41	Gwibulagan - Dusanjug		Negros Or.-Cebu	VII						
42	Ajoy - Masapla		Iloilo-Negros Occ.	VI						

(2) 既存資料のレビュー

事前調査団が収集した資料(資料-8)は多岐にわたっているが、このうち「輸送安全対策基礎調査報告書、平成元年3月、(財)海事国際協力センター」,「IMPLEMENTATION PROGRAM FOR FEEDER FERRY DEVELOPMENT PROJECT, January 1986, MPWH」,「REVIEW OF TRANSPORT PROJECTS IN THE MTPIP 1987-1992, January 1988, NTPP」,「PRESIDENTIAL TASK FORCE ON INTER-ISLAND SHIPPING, February 1989」,「RoRo FACILITIES FOR CERTAIN MAJOR ISLANDS IN THE PHILIPPINES, PPA」

「FEEDER PORTS STUDY, October 1989, ADB」

については特に詳細なレビューが必要である。

ここで示したように、フィリピンではRoRo輸送を含む島しょ間輸送について、様々なスタディが実施されてきている。

現地での協議でもしばしば話題になったが、「スタディばかり多くて現実の施設整備、輸送システムの改善が実現していない」という批判が根強い。過去のスタディを詳細に分析し、実現に至らなかった原因を徹底的に検討し、実効性ある“RoRo輸送計画”へ結びつけることが必要である。

さらに、「NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY, Reconnaissance Survey Report for Western and Central Visayas, June 1989, IATCTP」

「NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY, Reconnaissance Survey Report for Batangas-Calapan Route Bicol, Eastern Visayas & Surigao, June 1989, IATCTP」

「NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY, INCEPTION REPORT, October 1989, IATCTP」

は、本調査のプレスタディそのものといってよく、本格調査の内容に盛り込まれるべき内容が含まれており、詳細な検討、分析がなされるべきである。

港湾、海運に係る統計、組織規定等については大部分を本格調査団が入手する必要がある。カウンターパート機関であるIATCTP(RoRoオフィス)を通じれば、原則としてすべての必要な資料が入手できる。また、国立統計局では、一般人が自由に資料を購入できることになっている。ただし、Region, Province, Municipalityレベルの統計等については各々の地方オフィスに出向かなければ入手できないものもある。

RoRo輸送システムを考える場合には港湾と結ぶ道路ネットワークが極めて重要であり、その現状、将来計画を正確に把握しておく必要がある。

また、海運政策については、特に以下に示す観点からの検討、分析が必要である。

① 関係機関の権限分担

② 営業免許

③ 運賃

④ 船舶購入許可制

(3) 社会経済条件の分析と将来見通し

本調査のマスタープラン対象エリアが全国に及んでいること、長期、短期の整備計画の前提となる需要予測についても中央、西ビサヤ地方を対象としていることから、これらの作業に当たっての基礎情報となる国、地方の社会経済条件の分析及び将来見通しを行うことが極めて重要である。

(4) 自然条件調査

1) 現地踏査

本調査ではマスタープランの対象 RoRo ルートとして42ルート、F/Sについては同じくビサヤ地方の4ルートを予定している（F/S 4ルートは、マスタープラン42ルートの内数である）。

F/Sの対象となっている4ルート 8港を含む OD 調査の対象となっている23ルート 46港（重複分を除くと39港）については、ローカルコンサルタントによる踏査を含めて、すべての港を踏査する必要がある。

マスタープランの対象となっている42ルートは、IATCTPによって提案されているルートである。対象ルートに含まれる港湾の規模、利用度に応じて踏査されることとなる（図5-2参照）。

現地踏査に当たっては、既にサービスの提供されているルートについては、実際に乗船してみるとともに、運航している海運会社、主要荷主、関係行政機関へのインタビュー、情報収集を合わせて実施する必要がある。

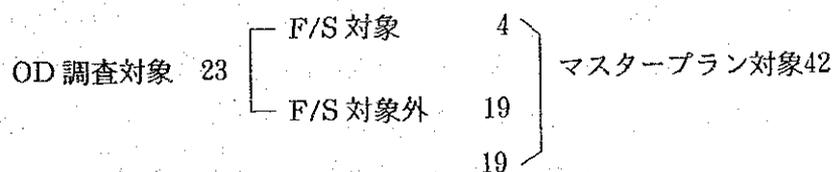


図5-2 調査対象ルート

2) 各港の自然条件

① 概要

現在すでに RoRo フェリーが就航している 9 ルートのうち、本調査において F/S の対象となるのはビサヤ地域の次の 4 つのルートである。

- (a) Argao (Cebu 島) - Loon (Bohol 島)
- (b) Tuburan (Cebu 島) - Escalante (Negros 島)
- (c) Bacolod (Negros 島) - Iloilo (Panay)
- (d) Carmen (Cebu 島) - Isabel (Leyte 島)

現在 RoRo 船が就航している港については 3 - 5 において自然条件の概況を記しておいた。本節では、F/S の対象となる可能性のある上記 4 ルートについて、さらに詳細な自然条件に関する資料としてどのようなものが入手可能であるかを明らかにし、F/S を行うに当たってどのような現地調査を追加実施すべきであることを述べることにする。

② ビサヤ地域の一般的海象特性

パナイ島、ネグロス島、セブ島、ボホール島の主要な島から成る中部フィリピンはビサヤ地方と呼ばれている。この地域は東側はルソン島、サマル島、レイテ島、ミンダナオ島の一連の島が南北に並んでおり、太平洋から来襲する台風による波に対してほぼ完全に遮蔽されている。一方、西側は、ミンドロ島、パラワン島及びこれら両島の間小さな島々で囲まれている。そのため、ビサヤ海域は一種の閉鎖海域となっている。

この地域に現れる気象擾乱は、北東の季節風及び台風である。台風は南東から北西に向かうコースをとる。

上記のビサヤ地域の 4 島は、いずれも北東から南西の方向に走る海峡（水路と呼ぶ方がふさわしい形状である）を隔て並んでおり、本件調査の対象となるフェリー港は互いにこれらの海峡の対岸に位置している。

以上のような地形条件によって、いずれの港湾においても対岸までの水域の長さが限られているため、その水域に発生する波は、当該水域の上の風によって支配されるような風波が卓越していると考えられる。

しかし、これら 4 島間の海峡が季節風の吹く方向と同じ北東から南西に向かう方向であるため、季節風によって海峡に沿う波が発生し、長時間継続するという状況がしばしば起こっていると思われる。このように、波高はそれほど大きくなくても長時間継続する波によって、漂砂やシルテーションなどが広い範囲で生じているようである。実際、コンタクトミッション及び事前調査団が現地調査を行った港湾

においては、突堤（埠頭へのアプローチ）の片側は砂の堆積、他方は欠壊が見られた。一般には季節風の風上側である北東側が堆積、南西側が欠壊となっているが、Tuburan 港は、突堤の北側に欠壊、南側に堆積が見られた。これは、この港の北側の岬及び Madridejos 島やその付近の島々によって、北東の季節風に対しては遮蔽された位置にあるため、北西からの波が卓越しているためと推定された。

以上のように、この地域の波に関する問題は波自体より、波によって引き起こされる海岸近くの流れや漂砂、あるいはシルテーションであろう。ことに、ネグロス島 Bacolod、及び将来のフェリー港の候補地であるネグロス島北西端の Manapula や Magalona ではシルテーションが大きな問題となっており、大型船（1000トン以上）が着岸できる施設を建設するには長いアプローチが必要である。ネグロス海運所有のバコロド栈橋はその典型的な例である。

ピサヤ地域の潮差一般に 2 m 前後と比較的大きく、そのため潮流もところによってはかなり強いようである。ことに、イロイロ港では前面に Guimaras 島があるため、局所的には 1 m/s を越える強い流れが生じているようである。

③ 入手可能な資料

港湾の自然条件に関する資料は、PPA が所有している。フェリー港に関する PPA が保管する資料は表 3-8 (p.43) に示すとおりである。この中から、上記の 4 ルートの港に係わる資料について入手の可否をとりまとめたものが表 5-2 である。以下、この表に掲げた各項目について説明を加える。

(a) 港湾計画図

港湾計画図は 3 港については整っているが他の 5 港については、整備されていない。図 3-3 は 1 例としてバタンガス港の平面図を示している。なお、この港湾計画図には付近の地形状況及び等深線も記入されているので、港湾施設周辺の状態を知ることができる。

(b) 土質データ

土質データは、最近外国からの資金によって大規模な工事が行われたいくつかの港（セブ、イロイロ）については保管されているが、その他の港については残っていない。

入手できる土質資料の 1 例として、イロイロの外貿埠頭における土質資料を確認したところ、柱状図など、必要な資料はきちんと作成されているようであった。

(c) 地形図及び深淺図

地勢図及び深淺図は、主要な港湾については整備されているようであるが、そ

他の小さな港湾については得られていないが、あっても不十分なものである。

(d) 気象条件

気象条件として入手可能な要素は、風向、風速、雨量であり、PAGASA（気象庁）が全国各地の測候所で観測したデータをまとめ、発行している「Climatological Data」に掲載されている。風については、長年にわたって各月の平均値を求めた風況資料と、各月の過去最大風速及びその風向を求めた台風に対する資料がある。また、雨量については各月の過去最大雨量（一時間当たり）が得られている。表5-2に示すように、すべての港湾について気象データは得られるようである。

(e) 潮位、潮流

検潮所があるのはセブ、イロイロの2箇所のみである。潮位については、National Mapping & Resource Info. Authority（水路部）から、全国の多数の地点における年間の潮位を潮位表として発行されている。FS調査対象予定港のすべてが潮位表に掲載されてはいないが、近隣の潮位計算地点の資料を利用することができる。

一方、潮流については、セブ、イロイロの2地点しか記載されておらず、かつセブとマクタン島、イロイロとギマラス島の中の狭い海峡の中での潮流についてのデータである。

(f) 波浪、漂砂

利用できる資料はない

3) 本格調査において実施することが望まれる自然条件調査

① 土質調査・地形測量

F/S調査対象予定の多くは土質データ、地形データがなく、セブ、イロイロにおいても必ずしもRoRo施設建設地点でのデータがあるとは限らないので、調査対象全港について土質調査、地形測量を実施する必要がある。

② 波浪調査

波浪実測データはないが、風の資料が入手できること、また調査対象地点の周辺海域は閉鎖海域であることから、調査対象全港において風資料に基づく波浪推算を行うことにより、波浪状況を知ることができる。従って、波浪実測の必要はない。

表5-2 自然条件に関する資料の有無一覧表

港名 (島の名)	施設 配置図	地形図	深淺図	気象条件注)			近隣測候所
				風況	台風	雨量	
Argao (Cebu)	○	△	△	○	○	○	Cebu, Dalaguete
Loon (Bohol)	—	—	—	○	○	○	Tagbilaran
Escalante (Negros)	○	△	△	△	△	△	San Carlos
Tuburan (Cebu)	—	—	—	△	△	△	Bayawan
Carmen (Cebu)	—	—	—	△	△	△	Cebu
Isabel (Leyte)	—	—	—	○	○	○	Baybay, Merida
Iloilo (Panay)	○	○	○	○	○	○	Iloilo, Barotac, Viejo
Bacolod (Negros)	○	○	○	○	○	○	Iloilo, Pulupandan
情報の所在, 出典	PPA			Climatological Data-Part II National Institute of Climatology PAGASA			

(注) 風況：各月の平均値 資料の有無 ○：当該港のデータ有り
 台風：過去最大値（各月ごと） △：部分的または近隣地点のデータ有り
 雨量：過去最大雨量（1時間あたり） —：なし

表5-2 自然条件に関する資料の有無一覧表（続き）

港名 (島の名)	土質 データ	検潮所	海象条件注)				近隣の潮位計算地点
			波浪	潮位	流況	漂砂	
Argao (Cebu)	—	△Cebu	—	△	△Cebu	—	Cebu, Carcar Bay
Loon (Bohol)	—	—	—	△	—	—	Maribojoc Bay
Escalante (Negros)	—	—	—	△	—	—	San Carlos
Tuburan (Cebu)	—	△Cebu	—	○	—	—	Cebu
Carmen (Cebu)	—	△Cebu	—	○	△Cebu	—	Cebu
Isabel (Leyte)	—	—	—	△	—	—	Baybay
Iloilo (Panay)	○	○	—	○	○	—	Iloilo, Barotac, Viejo
Bacolod (Negros)	—	—	—	○	—	—	Iloilo, Pulupandan
情報の所在, 出典	PPA	Tide & Current Tables (潮位, 潮流表) Dept. of Environment & Natural Resources National Mapping & Resource Info. Authority					

(注) 1) 検潮所は Cebu, Iloilo, の2カ所のみ
 2) 流況は Iloilo と Guimaras 島の間, Cebu と Mactan 島の間

③ 潮位・潮流調査

潮位表により、潮差や変動状況についてのデータは得られるが、RoRo 施設の設計において重要である工事基準面が必ずしも正確であるとは言えない。RoRo 施設では特に潮位とランプの高さの位置が重要であるので、F/S 調査対象予定全港において潮位観測を実施して基準面を正確に設定する必要がある。

④ 深淺測量及び漂砂調査

F/S 調査対象予定港の多くはシルテーションの問題があると言われている。そのため、各港の詳しい深淺測量を行い海底地形状況を正確に捉えるとともに、観察程度に留まるであろうが漂砂移動の傾向を捉えておく必要がある。

なお、参考までに表 5 - 3 に DPWH, 表 5 - 4 に AOB が利用しているコンサルタントを示す。

(5) OD 調査

事前調査団は、本格調査の一環として中西部ビサヤ地方を対象とする OD 調査を実施することで、比側と合意した。また、その実施計画立案の参考とするため、調査体制、調査方法につき、IATCTP RoRo オフィスのスタッフ、サンタ・マリア氏 (Mr. Faustino STA・MARIA, DPWH Project Management Office for Feasibility Study) の意見を聴いた。

1) 対象ルート

RoRo 輸送に係る需要予測に当たっては、貨物及び旅客の OD 調査を実施する必要がある。現在の輸送実績及び人口、産業の集積度からみた将来の動向を勘案すると、中央及び西ビサヤ地方内及び、この地方と他地方を連絡する合計 23 ルート (表 5 - 1 の○印) を調査対象ルートとすることが適当であると考えられる。

2) 調査体制

Local の民間コンサルタントに下請け発注することで、実施可能である。ただし、OD 調査の経験、人材ともに不十分であり、調査実施計画は比側カウンターパートの協力を得つつ、JICA 本格調査団で作成する必要があると思われる。すなわち、下請けコンサルタントの業務は、調査員 (アルバイト) の手配とその監督程度に留まることとなる。

表5-3 DPWHが利用しているコンサルタント

(自然条件調査)

(土質調査関係)

1. TECHNOASIA GENERAL CONSTRUCTION INC.
Parkview Bldg., 112 Gamboa St.
Legaspi Village, Makati Metro Manila
Tel no. 817 68 26 to 31
General Manager : Engr. RENE LOBO
2. EXPLOR TEST CORPORATION
17 Mayami St. Cubao, Quezon City
Tel no. 96 71 08
General Manager: Mr. RAMON GANERO
3. GEOTECHNICAL/QUALITY CONTROL SERVICES
99 Scout Rallos St. cor. Ybardolaza St.
Diliman, Quezon City
Tel no. 98 10 70
General Manager: JULIO S. RIVERA
4. GEOTECHNIC PHILS., INC.
800 EDSA, Quezon City
Tel no.
President: Mr. NORBERTO CHU
5. TECHNOSTEST INC.
893 EDSA, Quezon City
Tel no. 96 10 26 / 97 52 91

(地形測量関係)

1. F.F. CRUZ & CO. INC.
800 EDSA Quezon City
Tel no. 921 52 41
2. GEODESY SERVICES INC.
Rm. 609-a Benlor Bldg.
1184 Quezon Ave. Quezon City
Tel no. 99 26 41 local 272
President: Engr. EPIFANIO LOPEZ

表5-4 ADBが利用しているコンサルタント

(港湾プロジェクト全般)

1. BTMC: Basic Technology and Management Corporation
2. DCCD Engineering Corporation
3. Engineering and Development Corporation of the Phils.
4. Trans Asia (Phils). Inc.
5. Phil. International Consultants Inc.
6. TCGI
7. Asiatic Consultants, Inc.
8. Construction Consultants Corporation

なお、当初、Mr. サンタ・マリアは民間コンサルタントを使わず、DOTC 及び DPWH の職員が自ら OD 調査を実施することが適当であると主張した。(地方出先機関の職員またはアルバイトを調査員として使う。) しかしながら、この場合 DOTC 及び DPWH の職員のインセンティブ・サラリーや調査旅費を本格調査団が負担する必要があるが、これは JICA の制度上不可能である旨説明し、納得してもらった。

なお、参考までに ADB がよく利用しているコンサルタントで OD 調査の経験がある会社を以下に記しておく。

1. FF Cruz
2. Certeza
3. DCCD Engineering Corporation
4. Technosphere
5. Trans Asia Phils.

3) 調査方法

① 旅客

我国の航空旅客動態調査のように、旅客にアンケート票を配布して記入してもらうことは旅客の協力が得られず不可能(言語の多様性及び旅客の識字率の問題もある)。調査員が、旅客1人1人にインタビューして回答を得る他ない。

従って、調査対象を特定の航海(便)に限定したとしても、全数調査は不可能である。

② 貨物

以下に記す2つの方法の併用が適当と思われる。

i) 特定の日における海上貨物のOD実態調査(サンプル調査)

1 ルートの発・着の両ターミナルにおけるトラック運転手へのインタビュー調査。港運業者へのインタビュー調査。

ii) 太宗貨物の年間を通じての(または季節別)流動実態に関するデータの収集。

太宗貨物の主要荷主(例 サンミゲル・ビール社)に対するヒアリング。

ヒアリング対象となる企業、事業所の候補をJICA本格調査団の訪比までにリストアップしておくよう、Mr. サンタ・マリアに依頼済みである。

政府機関が保有するODデータの入手。

例えば、穀物のODデータはNational Food Authorityが保有している。ただし、このデータには輸送手段(とりわけ、トランシップメントの有無)までは含まれていないかもしれないとのこと。

この種のデータの所在情報についても、JICA本格調査団の訪比までに調べておくよう、Mr. サンタ・マリアに依頼済みである。

(6) 需要予測

① RoRo フェリー輸送構造の分析

ここでは、RoRo フェリー輸送の実態及びOD調査の結果を踏まえ、地域経済指標とRoRo フェリー需要との相関分析、RoRo フェリー適合貨物のタイプ分析等を行う。

② 背後圏の設定

社会経済条件の分析結果、道路ネットワークの現状及び将来計画、OD調査の結果等を基に、RoRo フェリー輸送に係る背後圏を設定する。

③ 予測

前述の①の分析に基づき、ルート別の輸送量を貨物、旅客の別で予測する。

OD調査を実施しないルートに関しては、輸送モデルの構築が困難な場合も予測される。この場合には、トレンド予測などの簡便な手法を用いざるを得ないであろう。

なお、対象ルートの足が短いことから航空輸送のウェイトはほとんど零に近いものと考えられるため、予測に当たって航空による輸送分担を考慮する必要はないと思われる。

(7) マスタープランの作成

1) 長期整備計画

① 目標年次

マスタープランの目標年次は2010年とする。

② RoRo ルート案の作成

IATCTP が提案している42ルートについて検討を加え、RoRo ルートとしての成立可能性を検討する。42ルートの中には、すでに RoRo 船が就航しているもの、RoRo 船ではない通常の貨物船が就航しているもの、現在は定期的な船舶の運航がなされていないものという3種類がある。

ここでは、既に運航サービスがなされているルートについてはこれを尊重しつつルート選定の基準を設定し、新規ルートの妥当性を概略検討することとなる。この際、需要予測の結果、道路ネットワークの現状と将来計画とともに、当該ルートに関係する地域の地理的位置、社会経済条件といった観点から検討がなされるべきである。他に代替的な交通手段のない、あるいは非常に貧弱な地域においては、「住民の足の確保」といったシビルミニマムの要請に答えることが必要とされよう。

なお、(1) 調査対象地域の項で述べたように、本42ルートについては、本格調査の段階では基本的にはその選定の妥当性を検証するに留まるものと考えられる。

③ 運航計画及び整備計画の作成

需要予測の結果を用いて、就航船の船型及び便数の代替案を設定する。船型については、フィリピン国の RoRo 船がほとんどすべて日本の中古船であることから、これらの船型が検討の対象となろう。船型の変化については、海運政策の検討、時に船舶購入許可制の検討結果に基づいた分析がなされる必要がある。

想定された船型、取扱貨物量、乗降旅客数を基に目標年次2010年の整備計画の案を作成する。

ここでの計画には、水域、外かく、係留施設、上屋、倉庫、旅客ターミナル、港内道路、アクセス道路が含まれる。本マスタープランでは、施設計画平面図の作成は行わず、RoRo ルート案について必要な施設の種類、規模、現在の施設の改善策、新規建設の必要性、位置に関するコメントが付されるべきものと考えられる。

④ 所要投資額の算定

作成された整備計画に関し、必要な投資額を算定する。この際、算定のための単価は、F/S において算定された積算単価を参考とすることが適当であろう。

⑤ 整備順位の検討

マスタープランの対象となっているルートについて、整備すべき優先順位を検討する必要がある。これは、本調査を基に、フィリピン側が将来において独自に F/S を実施し、自ら施設整備を行っていきたいという意向を有していることから、フィリピン側で将来、優先的に施設整備の検討対象とすべきルートを本格調査において明らかにする必要があるからである。

2) 海運政策

海運政策については、以下の項目について検討、提言を行うこととなる。

① 関係機関の権限分担

② 航路免許

③ 運賃

④ 船舶購入許可制

①については、RoRo フェリー輸送に関係する行政機関の数が多いため所掌する権限が錯綜しており、行政事務が非効率となっていること、また輸送サービスに必要な提出書類の数も多く、繁雑であること、などが結果的に RoRo フェリー輸送サービスを提供する海運会社の事務を増大させ、本来のサービスレベル（便数の増加、船舶修理への投資、安全対策への配慮）の向上を妨げてしまっているという問題意識がある。

②については、現在の免許の与え方が新規参入を規制する方向で機能しており、これが、海運会社間の競争を減少させ、RoRo フェリー輸送網の拡大、発展あるいはサービスレベルの向上を阻んでいると考えられている。

③については、運賃の決定に関し認可制を採るべきか、自由設定を認めるべきか、RoRo フェリー輸送のみに他の海運モードとは異なる運賃制度を定めるべきか、というような観点からの検討が求められている。運賃についての行政側からの取り組み方に混乱があるというのがフィリピン側の認識のようであった。

④については、外国から船舶を購入する場合、許可を受けた場合のみ関税を安くするという制度が存在し、これが海運会社の船舶購入意欲を減少させ、結果として船舶の近代化を妨げているという批判がなされている。

海運政策については、対象が広範囲に及びかつ扱い方によっては内政干渉と受け取られかねない問題であるという認識から、フィリピン側との協議の結果、本調査では前述の問題に関する検討、分析の方法の提示、日本をはじめとする諸外国の事例の紹介にとどめ、具体的な提言は行わないこととなっている。

以上、③～④に関する検討及び提言を行うに際し、1989年2月に出された「内航海運に関するタスク・フォース」の答申内容を十分配慮すべきである。

(8) 短期整備計画のフィージビリティ調査

1) 目標年次

短期整備計画の目標年次は1997年（本格調査終了後5年）とする。

2) 短期整備計画に含まれる RoRo フェリー航路の決定

5-2 (p.53頁) で述べたように、フィージビリティ調査の対象4ルートはプログレスレポート提出時に決定されることになっている。

比側においては、提案した4ルート以外にもいくつかの代替ルートを挙げているが（資料-7）、本格調査の段階で代替ルートとの比較検討を行うことまでは求められていない。本ルート選定の妥当性を検証することで足りるであろう。

3) RoRo フェリー船舶の概略分析

就航船の問題はマスタープラン作成の場合と同様である。ただし、短期の計画であることから、具体的な船舶購入計画がない限り、現在就航している船舶を前提とせざるを得ないであろう。

4) 運航計画

運航計画についても、就航船と同様現在の体制が基本となるが、運航に従事している海運会社、港湾の管理運営主体の意向等を勘案しつつ、見直しを行う必要のある航路もでてくる可能性がある。

5) 整備計画

短期整備計画の対象となる施設はマスタープランと同様である。アクセス道路については、事前調査時のミニッツ（資料-2）において、比側において設計及び積算を行い、その結果をもとに本格調査団が経済、財務分析を行うことになっている。

計画対象港のうちバコロド港、イロイロ港については、取扱貨物、施設の観点からみて規模も大きいことから、港湾全体の利用、今後の整備の方向を勘案した検討が必要となろう。

6) 施設設計及び施工・積算

設計に当たっては、施設整備後にできるだけ維持・補修費がかからないタイプが検討されるべきであろう。

建設費については、施設の耐久性の確保とも関係するため一概にはいえないが、維持・補修費の低減については比側よりコメントもなされており、検討される必要がある。

7) 経済財務分析及び管理運営

各港ごとに経済財政分析を行うことになるが、本格調査の実施スケジュール上、2ルートずつ時期をずらして調査することになっている。これは比側が、少なくとも2ルートのフィージビリティ調査を1991年6月までに完了するよう強く要請したためであり、やむを得ない措置であったが、実施に当たっては、後半の2ルートの検討時に前半の2ルートも合わせて全体としての整合が確保されるよう分析がなされるべきである。

8) 管理運営

調査対象港の管理運営主体は、PPAとMunicipal Governmentのいずれかである。開発主体は前者の場合はPPA、後者の場合はMunicipal GovernmentとDPWHのいずれかの可能性がある。

本格調査に当たっては、一応現在の管理運営全体を前提としつつ、状況によっては変り得ることを念頭に置く必要がある。現在Municipal Portであっても、施設整備がなされることによって取扱貨物量、乗降旅客数も多くなり、PPAの管理に移管することが適当であると考えられる港湾もあると思われる。

なお、開発主体を含めて、PPAとDPWHの間には各々の権限の拡張、維持に関する争いがあり、調査実施に当たって留意する必要がある。

5-3 本格調査団の構成

本調査は、対象地域がフィリピン国全域となっていること、RoRoフェリー航路候補42ルートすべてについてはマスタープランを作成することとなること、フィージビリティ調査の対象も4ルートを予定していることなどから、質・量ともに大規模な調査となっている。

また、需要予測の前提作業として、ピサヤ地方を中心とする航路23ルートについてOD調査を実施することとしており、これについても相当な業務量が予想される。

さらに、フィリピン側よりフィージビリティ調査2ルートについては1991年6月までに完成して欲しいという要請があり、これに対応するため、短期間で各種の調査作業を並行して進める必要がある。

これらの条件を勘案すると、調査団の構成は以下のとおりとすることが必要である。

- (1) 総括
- (2) 港湾計画Ⅰ（フェリーポート配置・整備計画）
- (3) 港湾計画Ⅱ（短期施設整備計画）
- (4) 需要予測／経済分析
- (5) 管理運営／財務分析

- (6) 海運政策 I
- (7) 海運政策 II
- (8) 施設設計
- (9) 施工・積算
- (10) 自然条件（海象）
- (11) 自然条件（土質）
- (12) 交通解析
- (13) 交通調査

担当分野のうち、主要な作業内容は以下のとおりである。

(1) 総括

レポート取りまとめ、説明・協議

(2) フェリー網計画

- 1) 調査対象 RoRo フェリーポート（42ルート、73港重複を除く）の港湾施設、港湾活動の現況、将来計画の把握、分析、評価
- 2) 海運政策に係る政策ガイドラインの取りまとめ
- 3) マスタープラン対象ルート案選定の妥当性の概略検討
- 4) 長期施設整備計画の作成（目標年次 2010年）
- 5) 投資計画の作成
- 6) 整備優先順位付け

(3) 港湾施設計画

- 1) フィージビリティ調査の対象4ルート、8港の港湾施設、港湾活動の現況、将来計画の詳細な把握、分析、評価
- 2) 対象港の長期発展方向の検討
- 3) 短期施設整備計画の作成（目標年次 1997年）

(4) 需要予測 / 経済分析

- 1) OD 調査実施計画の取りまとめ、実施に当たっての指導
- 2) 社会・経済フレームの分析・設定
- 3) 長期需要予測
- 4) 短期需要予測
- 5) 経済分析のためのモデル構築
- 6) 経済評価

(5) 管理運営 / 財務分析

- 1) RoRo フェリー輸送に係る関係行政機関の権限分担の分析及びこれに係る政策ガイドラインの作成
- 2) RoRo フェリーボートの管理運営計画の作成
- 3) 財務分析のためのモデル構築
- 4) 財務評価

(6) 海運政策 I

- 1) 営業免許制度の分析及びこれに係る政策ガイドラインの作成
- 2) 運賃制度の分析及びこれに係る政策ガイドラインの作成

(7) 海運政策 II

- 1) 船舶購入許可制度の分析及びこれに係る政策ガイドラインの作成
- 2) 船舶運航計画の作成 (マスタープラン及びフィージビリティ調査の対象港)

(8) 施設設計

- 1) 設計条件の検討
- 2) 長期施設整備計画におけるコスト算出のための設計面からの検討
- 3) 短期施設整備計画における概略設計

(9) 施工 / 積算

- 1) 施工上の問題点の把握と解決策の検討
- 2) 長期施設整備計画のコスト算出
- 3) 短期施設整備計画での施工計画策定
- 4) 短期施設整備計画の積算

(10) 自然条件 (海象)

- 1) 潮位観測
- 2) 潮流調査
- 3) 深浅測量
- 4) 漂砂調査

(11) 自然条件 (土質)

- 1) 土質調査
- 2) 地形測量

(12) 交通解析

- 1) OD 調査実施計画案の作成
- 2) OD 調査の実施
- 3) OD 調査結果の分析

(13) 交通調査

- 1) OD 調査の実施
- 2) OD 調査結果の集計, 整理

5-4 本格調査スケジュール

本格調査のスケジュール等は I/A の付属資料に示されているが, 実際の暦を基に検討すると表 5-5 のとおりとなる。

表 5-5 調査スケジュール案

項目 \ 月	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
フィリピンにおける作業	=====											=====				=====			
日本国内における作業	=====			=====							=====			=====				=====	
レポートの提出			△ PR/R				△ IT/R (1)					△ IT/R (2)				△ DF/R		△ F/R	

(注) 月の1,2,3…は, 実際の暦では1990年7月, 8月, 9月に相当するものと仮定している。

5-5 カウンターパート機関とSteering Committee

本調査のカウンターパート機関は DOTC, DPWH, NEDA, PPA, MARINA から成る IATCTP である。実際上は, その実施機関である RoRo オフィスがカウンターパート機能を有することとなる。

今回の調査では, 調整の必要な省庁はすべてカウンターパート機関に入っているため, これ以外に, 特に Steering Committee は設置されていない。

本調査の遂行上, 調整すべき問題が発生する場合には, すべてこのカウンターパート機関たる IATCTP において解決が図られることとなる筈である。

5-6 関連データの所在

収集資料リストに示したものの以外に, マニラ及び地方の行政機関等に存する多数の資料・データを入手する必要があるものと予想されるが, これらは原則的には IATCTP の実施機関である RoRo オフィスを通じて入手することができる。

資 料

1. Implementing Arrangement
2. Minutes of Meeting
3. 要請書 (T/R)
4. Questionnaire
5. 協議議事録
6. Memorandum of Agreement
7. 比例選定の Short List
8. 面会者リスト
9. 収集資料リスト

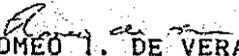
資料 1. Implementing Arrangement

IMPLEMENTING ARRANGEMENT
ON
TECHNICAL COOPERATION
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
INTER-AGENCY TECHNICAL COMMITTEE ON TRANSPORT PLANNING
FOR
NATIONWIDE ROLL-ON ROLL-OFF
TRANSPORT SYSTEM DEVELOPMENT STUDY
IN THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY

AND
INTER-AGENCY TECHNICAL COMMITTEE ON TRANSPORT PLANNING

JANUARY 31, 1990


ROMEO I. DE VERA
Undersecretary, Department of
Transportation and Communications,
as the Lead Agency of the Inter-Agency
Technical Committee on Transport Planning


KOJI KOBUNE
Leader
Preliminary Study Team,
Japan International
Cooperation Agency

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the Nationwide Roll-on Roll-off Transport System Development Study (hereinafter referred to as "the Study") and exchanged the Note Verbales with GOP concerning the implementation of the Study.

Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation program of GOJ, will undertake the Study in accordance with the relevant laws and regulations in force in Japan.

On the part of GOP, Inter-Agency Technical Committee on Transport Planning (hereinafter referred to as "IATCTP"), shall act as the counterpart agency to the Japanese study team (hereinafter referred to as the "The Team") and also as the coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The present document constitutes the implementing arrangement between JICA and IATCTP under the above-mentioned Note Verbales exchanged between the two Governments.

II. OBJECTIVES

The objectives of the Study are:

- (1) To formulate a master plan of a RO/RO ferry transport system including policy guidelines for an effective RO/RO ferry transport system.
- (2) To identify, prioritize the potential RO/RO ferry routes and conduct a feasibility study on the Short Term Development Program.

III. SCOPE OF WORK

3.1 Review and Analysis of the Existing Data and Information.

- (1) To collect, review and analyze available data, information, reports and plans relevant to the Study.
- (2) To review and assess the present policies and plans that may affect the Study:

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- 1) Institutional Arrangements
- 2) Franchising
- 3) Pricing
- 4) Vessel Acquisition

3.2 Analysis and Forecast of Socio-economic Characteristics

- (1) To analyze the present national and regional socio-economic characteristics.
- (2) To formulate the future framework for the year 2010.

3.3 Observation of Natural Conditions.

To carry out the following field surveys for natural conditions at RO/RO ferry ports for the possible feasibility study.

- 1) Field Reconnaissance for evaluating the present conditions of RO/RO ferry terminals and access roads.
- 2) Sounding Survey.
- 3) Boring Survey.
- 4) Current observation.
- 5) Wave estimation.

3.4 Future Demand Forecast.

- 1) To conduct the OD survey on cargo and passenger.
- 2) To analyze the inter-island traffic demand.
- 3) To forecast RO/RO ferry traffic by modes (cargo and passenger).

3.5 Master Plan of RO/RO Ferry Transport System.

- 1) To formulate a conceptual network plan of RO/RO ferry ports.
- 2) To estimate the vessel size likely to call the port.
- 3) To prepare a development policy for RO/RO ferry ports.
- 4) To prioritize the RO/RO ferry ports to be developed within the conceptual network.
- 5) To formulate policy guidelines on institutional arrangement, franchising of RO/RO ferry routes, pricing and acquisitions of RO/RO ferry vessels.

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3.6 Feasibility Study on the Short Development Program.

- 1) To select potential RO/RO ferry routes for the short term development.
- 2) To make the preliminary analysis for RO/RO ferry vessels to call the ports.
- 3) To establish the RO/RO ferry operation plan on each route.
- 4) To make the preliminary design and cost estimation of RO/RO ferry ports and related facilities.
- 5) To carry out economic and financial analysis for each RO/RO ferry port.
- 6) To recommend on the effective port operation and management system.

IV. STUDY SCHEDULE

The Study will be implemented in accordance with the attached tentative schedule (Appendix).

V. REPORTS

JICA shall prepare and submit the following reports in English to the GOF.

5.1 Inception Report (20 copies)

This report is to describe the overall approach and implementation program of the Study and to be submitted at the commencement of the work in the Philippines.

5.2 Progress Report (20 copies)

This report will be submitted within 3 months after the commencement of the Study and will contain the preliminary outcome of the field reconnaissance of the RO/RO ferry ports to be considered in the feasibility study.

5.3 Interim Report (I) (20 copies)

This report will be submitted within 7 months after the commencement of the Study and will contain the analysis and forecast of socio-economic characteristics, observation of natural conditions, future demand forecast and the RO/RO ferry policy guidelines.

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5.4 Interim Report (II) (20 copies)

This report will be submitted within 12 months after the commencement of the Study and will contain the master plan of the RO/RO ferry ports and the outcome of the feasibility study for 2 routes.

5.5 Draft Final Report (20 copies)

This report will be submitted within 16 months after the commencement of the Study and will present a draft of all the results of the Study including the outcome of the feasibility study of the remaining RO/RO ferry routes.

The IATCTP shall provide JICA with written comments in English on the Draft Final Report within 1 month after the receipt of the Draft Final Report.

5.6 Final Report.

This report will be submitted within 2 months after the receipt of the written comments on the Draft Final Report by the IATCTP and will contain all essential recommendations, results and findings of the Study.

VI. IMPLEMENTING ARRANGEMENTS

A. Undertaking of GOP

In accordance with the Note Verbales exchanged between GOJ and GOP, GOP shall accord privileges, immunities and other assistance to the Team and through the authorities concerned, take necessary measures to facilitate the smooth conduct of the Study.

1. GOP shall be responsible for dealing with the claims which may be brought by the third parties against the members of the Team and shall hold them harmless in respect of claims and liabilities arising in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or willful misconduct of the above-mentioned members.

GOP shall secure the safety of the Team during the implementation of the Study.

2. The IATCTP shall, at its own expense, provide the Team with the following, if necessary, in cooperation with other agencies concerned:

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- 2-1. Available data, information related to the Study.
 - 2-2. Counterpart personnel and support staff necessary for the Study.
 - 2-3. Suitable office space in Metro Manila and study area.
 - 2-4. Credentials or identification cards to the members of the Team.
3. The IATCTF shall make the necessary arrangements with the governmental and non-governmental organizations concerned for the following:
- 3-1. To secure the safety of the Team.
 - 3-2. To permit the members of the Team to enter, leave and sojourn in the Philippines for the duration of their assignment therein.
 - 3-3. To exempt the members of the Team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into the Philippines for the conduct of the Study.
 - 3-4. To exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emolument or allowance paid to the members of the Team for their services in connection with the implementation of the Study.
 - 3-5. To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into the Philippines from Japan in connection with the implementation of the Study.
 - 3-6. To secure permission for entry into private properties or other areas for the conduct of the Study.
 - 3-7. To secure permission to take all data and documents (including aerial photographs) related to the Study to Japan by the Team.
 - 3-8. To provide medical services as needed and its expenses will be chargeable to the members of the Team.

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B. Undertaking of the GOJ

In accordance with the Note Verbales exchanged between GOJ and GOP, GOJ, through JICA, shall take the following measures for the implementation of the Study,

1. To dispatch, at its own expense, a study team to the Philippines.
2. To pursue technology transfer to the Philippines counterpart personnel in the course of the Study, by way of training in the Philippines and in Japan.

VII. CONSULTATION

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

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ATTACHMENT

TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
WORK IN THE PHILIPPINES	—————											—					—		
WORK IN JAPAN	—						—————						—————				—		
REPORT PRESENTATION	△			△			△					△				△		△	
	IC/R			PR/R			IT/R(I)					IT/R(II)				DF/R		F/R	

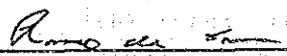
Legend:

IC/R: Inception Report
 IT/R: Interim Report
 PR/R: Progress Report
 DF/R: Draft Final Report
 F/R : Final Report

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MINUTES OF MEETING
FOR
NATIONWIDE ROLL-ON ROLL-OFF
TRANSPORT SYSTEM DEVELOPMENT STUDY
IN THE REPUBLIC OF THE PHILIPPINES
AGREED UPON BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
INTER-AGENCY TECHNICAL COMMITTEE ON TRANSPORT PLANNING
MANILA, PHILIPPINES
JANUARY 31, 1990


ROMEO I. DE VERA
UnderSecretary
Department of Transportation
and Communications
as the Lead Agency of the
Inter-Agency Technical Committee
on Transport Planning


KOJI KOBUNE
Leader
Preliminary Study Team
Japan International
Cooperation Agency

The Japanese Preliminary Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Koji Kobune visited the Republic of the Philippines (hereinafter referred to as "the Philippines") from January 24 to February 1, 1990, and had a series of discussions with the Philippine side in connection with the Nationwide Roll-on Roll-off Transport System Development Study (hereinafter referred to as "the Study"), and carried out field observation survey of the Study area.

The list of the members of the Team and the Philippine side is shown in Annex.

The main objective of the discussion was to set forth the Implementing Arrangement acceptable to both Governments and to exchange views on how to carry out the Study in a most appropriate and effective manner to meet the Study objectives acceptable by both sides.

After several discussions, the Team and the Philippine side agreed on the final Implementing Arrangement dated January 31, 1990 for the Study.

The main issues which were clarified and/or confirmed are as follows:

1. Future Demand Forecast:

The Japanese side explained the method of the future demand forecast such that a nationwide traffic forecast will be conducted using the macroscopic socio-economic data at provincial level. In addition, for the routes connecting Central or Western Visayas, a detailed OD survey will be undertaken. The result of both methods will be carefully combined in order to get the output of the whole nationwide demand forecast.

2. Feasibility Study

The feasibility study will be conducted on four (4) RO/RO ferry routes proposed by the Philippine side. The Study team will review them and, at the submission of the Progress Report, the routes will be finally selected.

3. Access Roads

The port related facilities shall include access roads. The result of the preliminary design and cost estimation of the access roads conducted by the Philippine side will be applied to the economic analysis of the RO/RO ferry ports.

4. Counterpart Training.

The Philippine side requested the Team to recommend to the Government of Japan the counterpart training in Japan of three (3) or more personnel during the course of the study starting in fiscal year 1990.

The Japanese side replied that it would be generally difficult to meet the request as far as the number of personnel is concerned, but will make the best effort to recommend it to the Government of Japan.

5. Undertakings of GOP

The Philippine side confirmed agreement on the undertakings on the best effort basis but clarified that IATCTF and DOTC will make arrangements only for those items within its areas of responsibility.

Review

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Annex: Participants to the Discussions on the
Implementing Arrangement
Nationwide Roll-on Roll-off Transportation
System Development Study (NRTSDS)

PHILIPPINE PANEL

Hon. Romeo I. de Vera
Undersecretary
Department of Transportation and Communications

Mr. Augusto B. Santos
Director, Infrastructure Staff
National Economic and Development Authority

Mr. Cesar T. Valbuena
Chief, Planning Service
Department of Transportation and Communications

Mr. Geronimo S. Alonzo
Acting Project Manager, NRTSDS
Chief Civil Engineer
FMD-Feasibility Studies
Department of Public Works and Highways

Mr. Roberto Aquino
Project Manager A
Philippine Ports Authority

Ms. Helen Sarigumba
Supervising Transportation Development Officer
Planning and Policy Staff
Maritime Industry Authority

JAPANESE PANEL

Mr. Koji Kobune
Team Leader, Preliminary Study Team
Director, Marine Observation Laboratory
Marine Hydrodynamics Division,
Port and Harbour Research Institute, MOT

Mr. Hiroshi Hayashida
Deputy Director, Office of International
Affairs, Construction Division,
Ports and Harbour Bureau, MOT

Mr. Seiji Matsumoto
Deputy Director, Shimonoseki Investigation
Design Office, The 4th District Port
Construction Bureau, MOT

Mr. Toshiyuki Iwama
1st Development Study Division
Social Development Study Department, JICA

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ROLL-ON ROLL-OFF (RO/RO) STUDY TEAM

Mr. Edgar Doffa
Deputy Project Manager, NRTSDS
Sr. Economic Specialist
Infrastructure Staff
National Economic and Development Authority

Mr. Faustino Sta. Maria, Jr.
Head Civil Engineer
PMO-Feasibility Studies
Department of Public Works and Highways

Mr. Ephraim Capucan
Supervising Civil Engineer II
PMO-Feasibility Studies
Department of Public Works and Highways

Mrs. Victoria Corpuz
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Ms. Rosa Cerdillo
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Sr. Transport Development Officer
Department of Transportation and Communications

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Sr. Transport Development Officer
Department of Transportation and Communications

Ms. Lualhati Bernabe
Research Engineer, NRTSDS
Department of Public Works and Highways

KK

OTHERS

Mr. Hirotaka Sato
First Secretary
Embassy of Japan

Mr. Tsutomu Moriya
Assistant Resident Representative
Philippine Office, JICA

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NATIONWIDE ROLL-ON, ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY

Terms of Reference

INTRODUCTION

Transportation in the Philippines is characterized by the dominance of road transport for intra-island and coastal shipping for inter-island movements. The former accounts for about 65% of freight and 90% passenger movement, while the latter handles about 35% of freight and 7% of passengers. These two modes generally complement rather than compete with each other. The two other transportation modes, air and rail, handle very little traffic accounting for only 3% of the total passenger and negligible portion of the total freight movement.

For the last two development plans, the Government has encouraged the improvement of inter-island movement of goods and passengers through the development of RORO ferry systems. Initial attempts to interconnect the eastern corridor paved the way for the development of the Pan-Philippine Highway Ferry Routes with exclusive terminals and vessels. Presently, there are now nine (9) routes being serviced by RORO vessels namely :

(1) Matnog (S. Luzon)	-	Allen (Samar)
(2) Matnog (S. Luzon)	-	San Isidro (Zambo)
(3) Liloan (Leyte)	-	Lipata (S. Mindanao)
(4) Batangas (Luzon)	-	Calapan (Mindoro)
(5) Escalante (Negros)	-	Tuburan (Cebu)
(6) Argao (Cebu)	-	Loon (Bohol)
(7) Iloilo (Panay)	-	Cebu (Cebu)
(8) Iloilo (Panay)	-	Bacolod (Negros)
(9) Carmen (Cebu)	-	Isabel (Leyte)

The more successful RORO routes have been initiated by the private shipping companies, showing that their development can be highly viable if properly planned and managed. The success along these routes may be said to be largely due to the efficiency of the system developed by private shipping sectors.

In the past, several attempts to study and identify possible island interconnections using RORO facilities were made. Unfortunately, the plans were not implemented and are now outdated. The main reason for the Government's failure to provide assistance in this area is the absence of a clear institutional arrangement for the implementation and eventual operation of the system, which is basically composed of a complementary network of ports facilities, maritime routes and access roads.

Building upon the experience from the previous projects, the Government now desires to undertake a study on the development of viable RORO ferry systems focusing on the effective utilization of existing transport facilities. In view

need for multi-disciplinary expertise, it has been agreed that the study shall be conducted by the Inter-Agency Technical Committee on Transport Planning (IATCTP) with technical assistance from appropriate foreign donor institutions.

OBJECTIVES

The primary objectives of the project shall include, but not be limited to, the following:

- i) To identify, study and prioritize the potential RORO routes that require the development of special coastal facilities and access roads ;
- ii) To determine the likely types and capacities of conveyances to effectively carry the traffic flows and to establish the appropriate improvements for ramps and other RORO service facilities including access roads ;
- iii) To establish pricing policies and regulatory/management measures to achieve efficient utilization of resources; and
- iv) To identify and program priority investment projects for developing a nationwide RORO ferry system.

Towards the middle of the study, appropriate coordination and institutional arrangements among various agencies shall be identified according to the balance of activities outlined below in the Scope of Work.

SCOPE OF WORK

The study shall be undertaken in two stages, with the first stage defining the directions for immediate action programs and the broad tasks for the medium and long-term plans, as well as, detailed project studies under the second stage.

STAGE I

Stage I shall involve the formulation of immediate action programs and shall be completed within a period of nine (9) months from the date of commencement inclusive of mobilization time. It is expected that works identified under this stage shall be undertaken solely by the local project team. The activities covered shall include, but not necessarily be limited to the following :

- 1) Preliminary Review and Mapping

The findings, recommendations and data contained in all previous surveys and studies, particularly regional development plans, shall be reviewed, analyzed, confirmed and, if necessary, supplemented with more recent data.

A rapid mapping of existing RORO facilities and identified possible routes shall be undertaken using existing information from the central offices of the participating agencies.

2) Assessment of Present Policies and Plans

This involves the review of the existing systems on:

- maritime regulations and restrictions on inter-island vehicle movement,
- franchising and vessel acquisition,
- institutional arrangement for implementation and operation, and
- tariff and user charges, among others.

Towards the middle of this stage, alternative institutional arrangements for possible implementation of an initial package of projects shall be identified.

3) Initial Project Selection

This involves the initial identification of the more meritorious routes that are clearly identified by present traffic patterns.

Basic functional facility requirements shall be established for the identified routes taking into consideration results of previous studies and more recent innovations.

The resulting identified projects at pre-feasibility level shall be ranked according to a set of criteria to be formulated by the project team. Such criteria are expected to utilize all readily available information, validated as necessary by data from surveys conducted by the team.

4) Formulation of Immediate Action Program

A short list of identified priority projects shall be formulated to constitute an immediate action program. Eventual implementation of such programs are envisioned to consist of very short detailed studies and design and physical implementation.

Relatedly, gaps in the existing policies and plans for the development of the system shall be identified and alternative options for improvement shall be drawn.

5) Preparation of Interim Report

- summarizing the present framework for implementing and operating RORO projects
- identifying gaps in the policies/plans and general directions for improvement
- outlining a long list of possible routes and subjects that may be studied and developed for the medium and long-term period
- outlining a short list of possible projects and related activities for an immediate action program

STAGE II

Activities under Stage II are envisioned to be undertaken with foreign technical assistance and shall be completed within a period of nine (9) months. This shall include, but not necessarily be limited to the following:

- 1) Review, as necessary, of the work carried out by the Project Team;
- 2) Review and analysis of the impact of planned and committed development projects;
- 3) Preparation of a master list of possible routes which may be developed in the medium and long term period;
- 4) Conduct of detailed surveys on cargo and passenger flows
- 5) Analysis of data and generation of traffic forecasts
- 6) Formulation of alternative plans for integrating RORO shipping routes with existing and proposed road system
- 7) Preparation of appropriate designs with preliminary cost estimates for planning and programming purposes,
- 8) Development of a framework for long-term project evaluation and prioritization using the following criteria:
 - project cost
 - technical feasibility
 - economic and financial viability
 - social impacts
- 9) Identification of appropriate pricing policies
- 10) Development of policy guidelines on franchising of RORO shipping routes,

- 11) Development of appropriate institutional arrangement for implementation and operation of RORO transport systems
- 12) Preparation of a Final Report including the recommendations from the above findings; and
- 13) Preparation of an Implementation Program for a Nationwide RORO System Development Project suitable for submission to foreign institutions for capital assistance.

STUDY ADMINISTRATION

MANAGEMENT

A project team shall be established under the Inter-Agency Technical Committee on Transport Planning (IATCTP) with representatives from the National Economic and Development Authority (NEDA), Department of Transportation and Communications (DOTC), Department of Public Works and Highways (DPWH), Philippine Ports Authority (PPA) and Maritime Industry Authority (MARINA). The IATCTP Technical Committee shall act as the Steering Committee of the study, and the study team shall be composed of both full-time and part-time staff from the IATCTP member agencies. In particular, the study team shall interact closely with the DPWH EMO-Feasibility Studies, the PPA Planning and Engineering Department and the MARINA Planning and Programming Staff.

The team shall report directly to the Steering Committee on a regular basis in order to review specific work progress and problems, as well as to make policy decisions regarding the conduct of the study. The IATCTP (Steering Committee) shall report to the Cabinet Committee on Transport Planning the interim and final conclusions/recommendations of the study.

STUDY DURATION

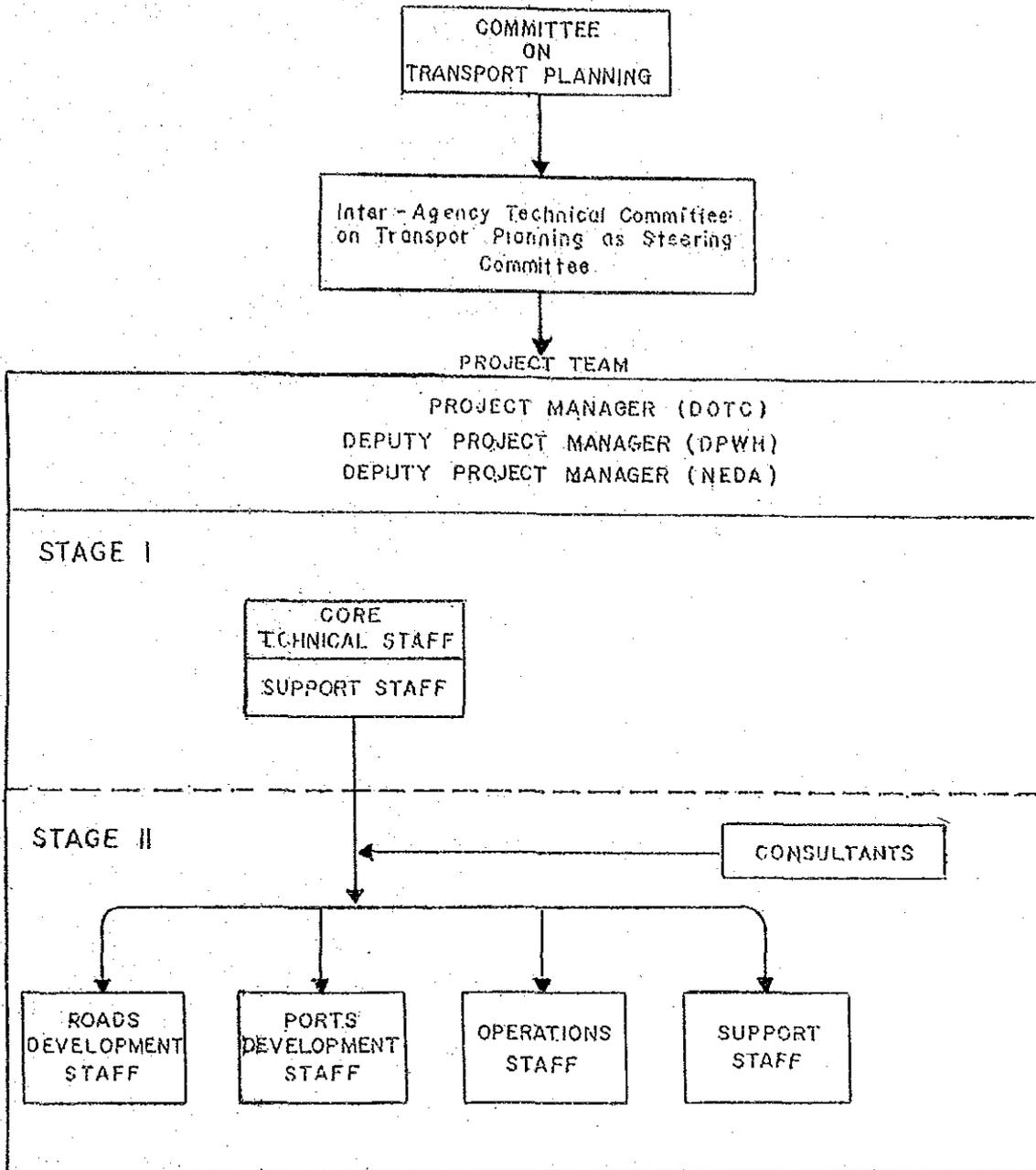
The study is expected to have a duration of eighteen (18) months.

STAFFING REQUIREMENTS

The project team is constituted as a task force to undertake the formulation of immediate, medium and long-term plans for RORO transport systems and coordinate its development with concerned Government agencies and possibly the private sector. Attention shall be given to the coordination of its activities in order to establish an early commitment to the findings and recommendations of the study and to ensure that programs of the concerned agencies are reflected in the progressive development of the project.

Technical assistance shall be secured from foreign institutions and emphasis shall be given to the regular interaction between local team members and the expatriate consultants. It is required that the consultants maintain a high level of interaction as part of their assignment to the project to effect transfer of technology.

Attached is a chart showing the Project's organizational structure. The core technical group established under Stages I shall be decomposed into three groups towards the later part of Stage II, with each group given specific tasks pertaining to access roads development, ports development, and operations. During the conduct of Stage II team shall be assisted by qualified consultants on a, more or less, continuous basis.



資料 4. Questionnaire

QUESTIONNAIRE

FOR

**NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT
SYSTEM DEVELOPMENT STUDY**

IN

REPUBLIC OF THE PHILIPPINES

Preliminary (Contact) Study Team

Government of Japan

October, 1989

JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA)

This questionnaire is prepared by the Japanese Preliminary (Contact) Study Team (hereinafter referred to as the "Team") on the Nationwide Roll-on Roll-off Transport System Development Study in the Republic of the Philippines (hereinafter referred to as the "Study") to get basic information and necessary data. We would appreciate it very much if you would provide us with appropriate written answers.

(Note; the Team would like to get the ※-marked items during its stay in the Philippines in order to help the Study start as quickly as possible. With regard to other items without ※-marks, we would like to confirm whether or not they are available at this moment. We would like you to note that further detailed data/information might be required during the course of the Study.)

I. Scope of the Study

※ 1. Preferable Ro-Ro ferry routes for the Study, if any.

※ 2. Preferable ports or sites for the Study, if any.

II. Comprehensive Data/Information

The following data/information are requested to enable us to study the general framework of national development, to set up the future economic indicators and to study the present conditions and future trends of Ro-Ro ferry shipping and Ro-Ro ferry ports etc.

1. Macro socio-economic conditions

※ (1) National development plans

① Long term plans (transportation master plans etc.)

② Short term plans (five-year plans etc.)

③ Socio-economic indicators (GDP, population etc.)

(2) Annual national budget, with breakdown

※ (3) Statistics, economic indicators by province

2. Domestic Transport and Shipping

- ※ (1) Network maps of national transportation system:
 - ports, roads, railways, commercial flights
- (2) Traffic flow data and forecasts of cargos/passengers by each mode
- (3) Traffic mode sharing ratios of port cargos and passengers in the Ro-Ro/ferry shipping routes
- (4) Transportation costs of each mode
- ※ (5) Origin-destination surveys for port cargos and passengers
- (6) Development/improvement policies and plans for each mode
- ※ (7) Port cargo and passengers statistics
- ※ (8) Container cargo transportation including domestic feeder service
 - ① Container traffic volumes at each port
 - ② Container shipping services (routes, feeders, frequencies etc.)
 - ③ Development plans for container terminals
- ※ (9) Related studies, if any (national transportation studies etc.)

(example)

- ① Review of Transport Projects in the MTPIP 1987-1992 (NTPP, 1988)
- ② Road Feasibility Studies III of DPWH (1981, updated in 1982)
- ③ Car Ferry Ports Development Program (DPWH, 1986)
- ④ Ro-Ro Facilities Development Project (PPA)
- ⑤ Studies on Ro-Ro Ships Designs, Provement and Financing (MARINA)

III. Ferry Port Development and Management System

The following data/information are requested to enable us to study the ferry port development and management as well as to examine the economic and financial viability of the possible ferry ports.

- ※ 1. Organization of government bodies and their responsibility
 - (1) Inter-Agency Technical Committee on Transport Planning (IATCTP)
 - (2) National Transportation Planning Project (NTPP)
 - (3) National Economic and Development Authority (NEDA)
 - (4) Development of Transportation and Communications (DOTC)

- (5) Development of Public Works and Highways (DPWH)
 - (6) Philippines Port Authority (PPA)
 - (7) Maritime Industry Agency (MARINA)
 - (8) Management body of each ferry port
 - (9) Other related governmental bodies
- ※ 2. Government authorities/offices in charge of the following aspects of projects and general procedures followed for project implementation: planning, financing construction, operation, facility maintenance etc.
3. Relevant laws and regulations
4. Structure of ferry port tariffs
5. Annual operation reports of major ferry ports
6. Financial positions of port sector
Financial statements (balance sheet, income statement and cash flow statement) for the past ten years
7. Possible port management systems for the new ferry ports.

IV. Ro-Ro/Ferry Shipping

- ※ 1. Supply of vessels
- (1) Vessel list as the total in the Philippines
 - (2) Vessel list by main routes
2. Ship owners and operators
- (1) Vessel list by owners and operators
 - (2) Vessel list by type and size
 - (3) Vessel list by ages
 - (4) Situation of vessel acquisition (price for second hand names of seller etc.)

(5) Actual performance of passenger and cargo per year by owners and operators:

① by routes

② by ships

(6) Revenue and cost in general condition

(7) Moderate and proper freight rate and fare for a ferry owners and operators

3. Seafarers engaged in the inter-island shipping

(1) Number of seafarers

(2) General condition of seafarers employments and salary

4. Wartime laws and regulations

Inter-island shipping (system of franchising and improvement of fare and freight rate)

V. Improvement/Construction of Ferry Ports

1. Socio-economic conditions

(1) Statistics of socio-economic indicators

(2) Regional development plans, including projected future economic indicators

(3) Network maps of transportation system

(4) Present conditions of road and railway systems

(5) Traffic flow data and forecasts (Origin-destination surveys for ferry port cargos and passengers, and related surveys)

(6) Land use maps and land use plans

(7) Development plans for transportation facilities

(8) Major sources of port cargos traffic such as major factories, cargo distribution centers

2. Port facilities for existing Ro-Ro/ferry services

※ (1) Layout (whole area of the ports, ferry terminal area)

※ (2) List of facilities (type, dimensions, completion date)

- ① channels and navigational aids
- ② break waters
- ③ mooring facilities
- ④ parking area
- ⑤ cargo
- ⑥ boarding bridge/facilities for passengers and vehicles
- ⑦ access roads, railways

(3) Technical standards for ferry port facilities

(design criteria, material and construction standards etc.)

※ (4) Present problems

3. Port statistics of existing Ro-Ro/ferry services for the past ten years

- ※ (1) Number of vessels (type, tonnage etc.)
- ※ (2) Cargo volume (commodity, container or bulk, origin and destination etc.)
- ※ (3) Number of passengers
- ※ (4) Ferry ship owners and operators
- ※ (5) Frequency of the ferry service
- ※ (6) Size and capacity of the ferry ships

4. Development/improvement plan of ferry port facilities

- ※ (1) Implementation schedule
- (2) Basic policy and traffic forecasts
- ※ (3) Major components of the plan, investment requirements
- (4) Finance source

5. Ferry terminal operator

- (1) tariffs
- (2) financial statement
- (3) number of staffs

6. Port management body

- (1) port tariffs
- (2) five year and annual budgets
- (3) financial statements
- (4) number of staffs

VI. Natural Conditions

The following data and informations are requested to enable us to study the port planning and design of ferry port facilities at selected sites.

- ※ (1) Location maps
- ※ (2) Topographic maps
- ※ (3) Sounding maps
- (4) Aerial photos
- (5) Meteorological conditions
 - ① Wind data (wind velocity, direction)
 - ② Record of typhoons
 - ③ Rain fall
- (6) Hydrographic conditions
 - ① Wave data (wave height, period, direction)
 - ② Tide data
 - ③ Current data
 - ④ Littoral drift surveys
- (7) Geological conditions
 - ① Boring data
 - ② Results of soil tests
 - ③ Sea bed materials
- (8) Earthquake data
 - ① List of recorded earthquakes
 - ② Seismic coefficient
- (9) River conditions
 - ① Flow discharge
 - ② Sedimentation discharge
- (10) Dredging Data

① Dredging records (location, volume)

② Data of dredged materials

VII. Others

1. Local consultant firms with sufficient experiences and ability for port development, transport development and field survey

(1) Name of the firms

(2) Address, telephone, cable of the firms

(3) Major achievements of the firms

2. Billing rates of local experts

port engineer, coastal engineer, civil engineer, architect, mechanical engineer, electrical engineer, naval architect, surveyor, transport economist accountant, draftsman, typist

3. Direct cost of field survey by local consulting firms

(1) Meteorological survey

(wind observation)

(2) Topographical survey

(3) Geological survey

(boring/sounding, soil test)

(4) Hydrographic survey

(wave observation, current observation, tidal observation, littoral drift survey)

MINUTES OF THE MEETING

The JICA Contact Mission (The Mission) headed by Mr. Koji Kobune, visited the Republic of the Philippines during the period from October 26 to November 4, 1989 for the purpose of clarifying the Nationwide Roll-on Roll-off Transport System Development Study (The Study).

The Mission had a series of discussion with representatives from the Inter-Agency project team for the Study and other related government officials and carried out field survey on Manila port, Batangas port, proposed project sites and private ports near Bacolod and Iloilo port. The member lists of both sides are attached in Annex 1.

The main items discussed are as follows:

1. The Philippine side explained that the Study is important as described in the Medium-Term Development Plan (1987- 1992) and emphasized the necessity of diversification of transport services including Roll-on Roll-off (Ro-Ro) services.
2. The Philippine side explained that the Study should cover three main items as follows:
 - (1) Institutional arrangement for implementation and operation of Ro-Ro transport system.
 - (2) Policy formulation for appropriate Ro-Ro services.
 - (3) Infrastructural development for Ro-Ro facilities and the management and operation of the facilities.

3. The Philippine side also explained that the Stage I study is in progress by their own project team and that the team has already completed the Inception Report. In the Inception Report, based on the data available and the previous studies conducted by various government agencies, 42 possible Ro-Ro routes were identified.
4. In reply to the inquiry by the Japanese side as to how smoothly the results of Stage I study would be connected with Stage II study, which the Philippine side requested to be taken up by JICA, the Philippine side proposed that the short list of potential routes be finalized as soon as possible. Both sides agreed that the Philippine side will send the short list for potential routes with rationale for selection by the end of November through JICA Manila Office.
5. The Philippine side strongly requested that all the results of JICA study should be submitted by the middle of 1991, so that they will be able to make best use of it within the period of the current medium-term plan. The Japanese side replied that it would be practically impossible because the JICA study could not be started sooner than June 1990 because of the Japanese fiscal year system. The Philippine side strongly re-emphasized that the final result of the JICA study for the very urgent and important routes should be submitted by the middle of 1991. The Japanese side

promised to convey the request regarding the time schedule of the JICA study to the government of Japan.

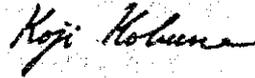
6. Both sides agreed that the number of routes for feasibility study should be of appropriate number and that there is the possibility that the feasibility study will not cover all of the routes given in the short list.
7. The Japanese side explained the tentative flow of JICA study (attached in Annex II) and the Philippine side understood it.
8. Both sides agreed that, for the purpose of determination of the design conditions of Ro-Ro facilities, the JICA study team should assume the likely types and capacities of conveyances.
9. Both sides agreed that the JICA study should cover the management and operation of Ro-Ro facilities of the ports to be included in the feasibility study.
10. The Philippine side requested that the JICA study should also cover the development of the framework to determine appropriate institutional arrangement and policies related to Ro-Ro services.

The Japanese side replied that it would be generally difficult to include the items of institutional arrangement and policies in the JICA study and that the extent of the inclusion of these items would be discussed with Japanese governmental agencies concerned.

11. The Philippine side understood the undertakings of the Philippine Government mentioned in the standard Implementing Arrangement for the JICA study. However, the Mission was informed that it would be very difficult to provide the service vehicle, copying machine and additional computers for the JICA study. The Mission took note of this problem.


ALEJO J. ESPINOSA

Assistant Secretary
Department of Transportation
& Communications as Lead
Agency of Inter-Agency
Project Team


KOJI KOBUNE

Leader of Contact Mission
Japan International Cooperation Agency (JICA)

MEMBER LISTS

PHILIPPINE SIDE

1. Romeo I. de Vera
Undersecretary
Department of Transportation and Communications
2. Manuel M. Bonoan
Assistant Secretary
Department of Public Works and Highways
3. Alejo J. Espinosa
Assistant Secretary
Department of Transportation and Communications
4. Jesus M. Sunga
Director, Infrastructure Staff
National Economic and Development Authority
5. Manolette B. Fernandez
OIC, Office of the Deputy Administrator for Planning
Maritime Industry Authority
6. Cesar T. Valbuena
Service Chief, Planning Services
Department of Transportation and Communications
and concurrent Project Coordinator, Nationwide Roll-On,
Roll-Off Transport System Development Study (NRTSDS)
7. Augusto B. Santos
Executive Director, Inter-Agency Technical Committee on
Transport Planning (IATCTP)
National Economic and Development Authority
8. Samuel C. Custodio
Division Chief, Water Transport Planning Division
Department of Transportation and Communications
and concurrent Project Manager, NRTSDS
9. Geronimo S. Alonzo
Chief Civil Engineer, PMO-Feasibility Studies
Department of Public Works and Highways
and concurrent Deputy Project Manager, NRTSDS
10. Edgar L. Dona
Transport Division, Infrastructure Staff
National Economic and Development Authority
and concurrent Deputy Project manager, NRTSDS

ANNEX I

11. Faustino N. Sta. Maria, Jr.
Head Civil Engineer, PMO-FS
Department of Transportation and Communications
12. Roberto S. Aquino
Project Manager A
Philippine Ports Authority
13. Ephraim D. Capucan
Supervising Civil Engineer II, PMO-FS
Department of Public Works and Highways
14. Ronnie S. Navarro
Senior Transportation Development Officer
Department of Transportation and Communications
15. Helen M. Sarigumba
Senior Maritime Industry Planning Specialist
Maritime Industry Authority
16. Victoria A. Corpuz
Systems Analyst, PMO-FS
Department of Public Works and Highways
17. Alma D. Porciuncula
National Economic and Development Authority
18. Rosa Q. Cerdino
Project Engineer
Philippine Ports Authority
19. Victor Emmanuel L. Dato
National Economic and Development Authority
20. Lualhati Bernabe
Civil Engineer
Department of Public Works and Highways
21. Susan Maano
Civil Engineer
Department of Public Works and Highways
22. Ildebrando R. Ibay
Research Engineer
Nationwide Roll-On, Roll-Off Transport System Development
Study

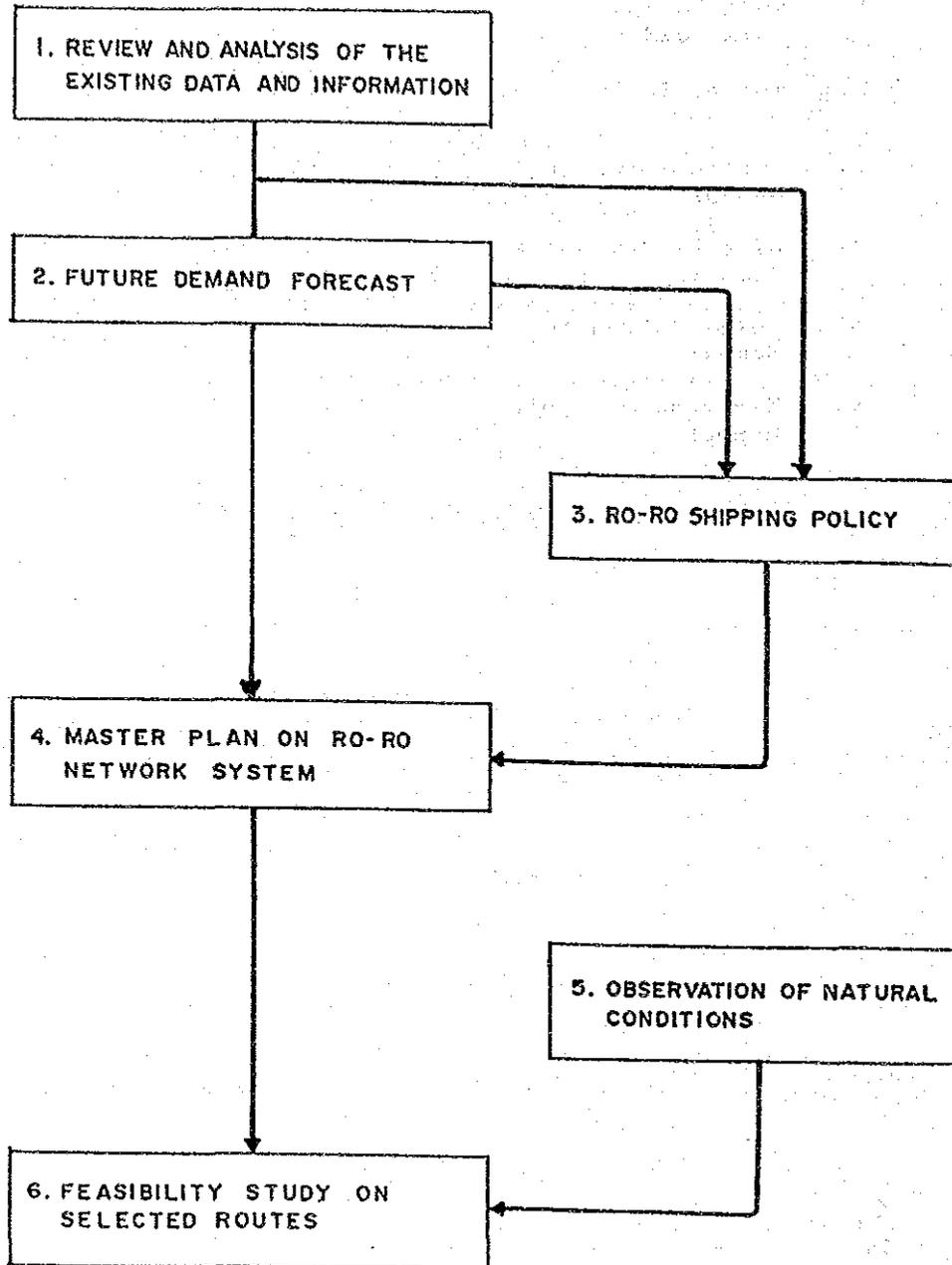
JAPANESE SIDE

1. Koji Kobune
Team Leader
2. Toichi Iwata
Member
3. Kunitosi Kurihara
Member
4. Hiroshi Hayashida
Member
5. Seiji Matsumoto
Member
6. Kazumasa Harimoto
Member

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ANNEX II



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資料 6. Memorandum of Agreement

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This Agreement, made and entered into by and between:

The Department of Transportation and Communications, a government office with address at Philcomcen Building, Ortigas Avenue, Pasig, Metro Manila, represented in this Agreement by UnderSecretary ROMEO I. DE VERA, hereinafter referred to as the DOTC;

The Department of Public Works and Highways, a government office with address at Bonifacio Drive, Port Area, Manila, represented in this Agreement by UnderSecretary TEODORO T. ENCARNACION, hereinafter referred to as the DPWH;

The National Economic and Development Authority, a government office with address at Amber Avenue, Pasig, Metro Manila, represented in this Agreement by Deputy Director-General FILOLOGO PANTE, JR., hereinafter referred to as the NEDA;

The Philippine Ports Authority, a government agency with address at Narsman Building, Port Area, Manila, represented herein by General Manager ROBELIO A. DAYAN, hereinafter referred to as the PPA;

- a n d -

The Maritime Industry Authority, a government agency with address at PPL Building, U.N. Avenue, Manila, represented herein by Administrator PHILIP S. TUAZON, hereinafter referred to as the MARINA;

WITNESSETH : That

WHEREAS, the Philippines by its archipelagic nature depends primarily on the complementary systems and networks of coastal shipping and road transport for the inter-island movement of people and goods;

WHEREAS, the Philippine economy has registered an upturn resulting in greater inter-island trade and thereby underscoring the need for more efficient transportation systems;

WHEREAS, advancing transport technologies have focused on inter-modality for efficient movement of people and cargo and the Roll-On, Roll-Off (RO-RO) technology has shown distinct advantages for inter-island commerce and trade;

WHEREAS, a number of domestic shipping companies have already acquired RO-RO vessels which are already plying domestic routes;

WHEREAS, the RO-RO technology requires special access and port infrastructure and facilities to fully harness the benefits therefrom and there is a need to identify and prioritize the RO-RO ports and routes as well as the necessary road connection for developing a nationwide RO-RO ferry cum road transport system;

WHEREAS, the policies on arrastre and stevedoring charges, and vehicle clearance requirements have to be rationalized to take into account the unique characteristics of RO-RO shipping;

WHEREAS, the Committees on Infrastructure and Transport Planning have authorized the immediate conduct of the Nationwide Roll-On, Roll-Off Ferry Cum Road Transport Development Study and have tasked the Inter-Agency Technical Committee on Transport Planning, with the DOTC as the lead agency, to undertake the said study;

NOW, THEREFORE, for and in consideration of the foregoing premises, the parties hereto have agreed and do hereby agree to jointly oversee the implementation of the Nationwide Roll-On, Roll-Off (RO-RO) Ferry Cum Road Transport System Development Study under the following terms and conditions:

1.0 AGENCY RESPONSIBILITIES:

1.1 The DOTC shall:

- 1.1.1 Provide over-all work project management for the study, including budgeting and hiring of contractual personnel, in accordance with the Terms of Reference of the study;
- 1.1.2 Provide necessary transport policy guidelines towards the effective implementation of the objectives of this study;
- 1.1.3 Provide expertise and recommendations on relevant problems, activities and subject matters within its purview; and,
- 1.1.4 Provide access to technical reports/papers, studies and development plans that are pertinent and relevant to the conduct of the study.

1.2 The DPWH shall:

- 1.2.1 Assist in the overall management of the project in accordance with the Terms of Reference of the study;
- 1.2.2 Provide expertise and recommendations on relevant problems, activities and subject matters pertaining to planning and design of highways and access roads; and,
- 1.2.3 Provide access to technical reports/papers, studies and development plans that are pertinent and relevant to the conduct of the study.

1.3 The NEDA, through the Inter-Agency Technical Committee on Transport Planning (IATCP) shall:

- 1.3.1 Assist in the administration of the work program, in accordance with the Terms of Reference of the study;

- 1.3.2 Provide necessary economic and development policy guidelines and thrusts that will stimulate the growth of the RO-RO ferry cum road transport system;
 - 1.3.3 Provide expertise and recommendations on relevant problems, activities and subject matters within its purview; and,
 - 1.3.4 Provide access to technical reports/papers, studies and development plans that are pertinent and relevant to the conduct of the study.
- 1.4 The PPA shall:
- 1.4.1 Provide necessary port development policy guidelines and thrusts in consonance with the projected growth of the RO-RO ferry system;
 - 1.4.2 Provide expertise and recommendations on relevant problems, activities and subject matters pertaining to port and harbor planning and design; and,
 - 1.4.3 Provide access to technical reports/papers, studies and development plans that are pertinent and relevant to the conduct of the study.
- 1.5 The MARINA shall:
- 1.5.1 Provide necessary maritime development policy guidelines and thrusts to promote the growth of the RO-RO ferry system;
 - 1.5.2 Provide expertise and recommendations on relevant problems, activities and subject matters pertaining to shipping operations and vessel design; and,
 - 1.5.3 Provide access to technical reports/papers, studies and development plans that are pertinent and relevant to the conduct of the study.

2.0 GENERAL CONDITIONS

- 2.1 To attain the objectives of the project, the parties agree to provide logistical support and personnel with adequate qualifications and experience and of such number as may be required for the effective fulfillment of the foregoing responsibilities.
- 2.2 Technical and financial assistance for the conduct of the study shall be sought from a suitable foreign technical assistance/grant programme.
- 2.3 The local counterpart funds, or the total project funds, in case foreign financial assistance is not secured, shall be obtained from budgetary supports as are made available to IATCTP by the Department of Budget and Management from existing appropriations and/or from agency contributions as may be agreed upon by the parties herein.

3.0 RENUMERATION OF LOCAL TEAM MEMBERS

Detailed personnel shall be entitled to honoraria/allowances as may be approved by the IATCTP, subject to existing rules and regulations. Hiring rates for contractual personnel to be assigned to the project on a full-time basis shall, likewise, be approved by the IATCTP.

4.0 EXECUTION

4.1 The IATCTP Technical Committee shall, in addition to its present duties, act as the steering committee of the study.

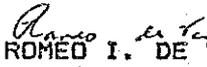
4.2 For purposes of administering project funds from agency contributions, the agencies concerned may transfer their contributions to the account of IATCTP, or effect the establishment of a special account for the project to be administered by the respective agencies.

5.0 EFFECTIVITY

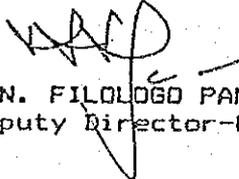
This Memorandum of Agreement shall take effect immediately upon signing hereof, and shall remain in full force and effect unless revoked or amended by the parties of this Agreement.

IN WITNESS WHEREOF, the parties herein have signed this Memorandum of Agreement at Manila on this 21 th day of December 1988.

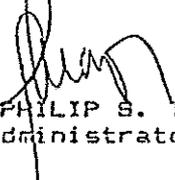
DEPARTMENT OF TRANSPORTATION
AND COMMUNICATIONS
By:


HON. ROMEO I. DE VERA
Under Secretary

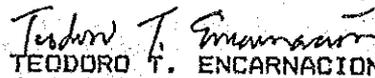
NATIONAL ECONOMIC AND
DEVELOPMENT AUTHORITY
By:


HON. FILOLOGO PANTE, JR.
Deputy Director-General

MARITIME INDUSTRY AUTHORITY
By:


HON. PHILIP S. TUAZON
Administrator

DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS
By:


HON. TEODORO T. ENCARNACION
Under Secretary

PHILIPPINE PORTS AUTHORITY
By:


COMMODORE ROGELIO A. DAYAN
General Manager

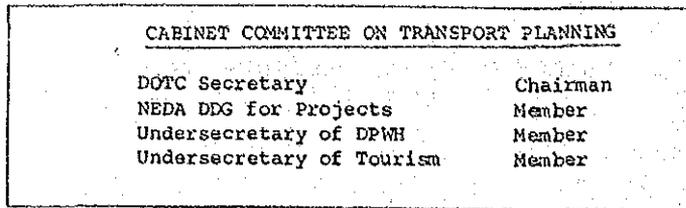
MEMORANDUM
OF AGREEMENT

NATIONWIDE RO-RO TRANSPORT
SYSTEM DEVELOPMENT STUDY

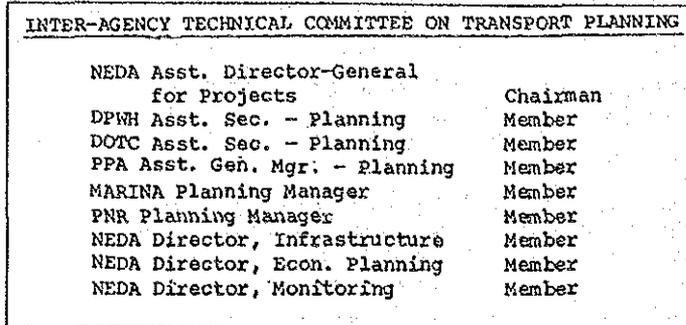
SIGNED IN THE PRESENCE OF:

JK

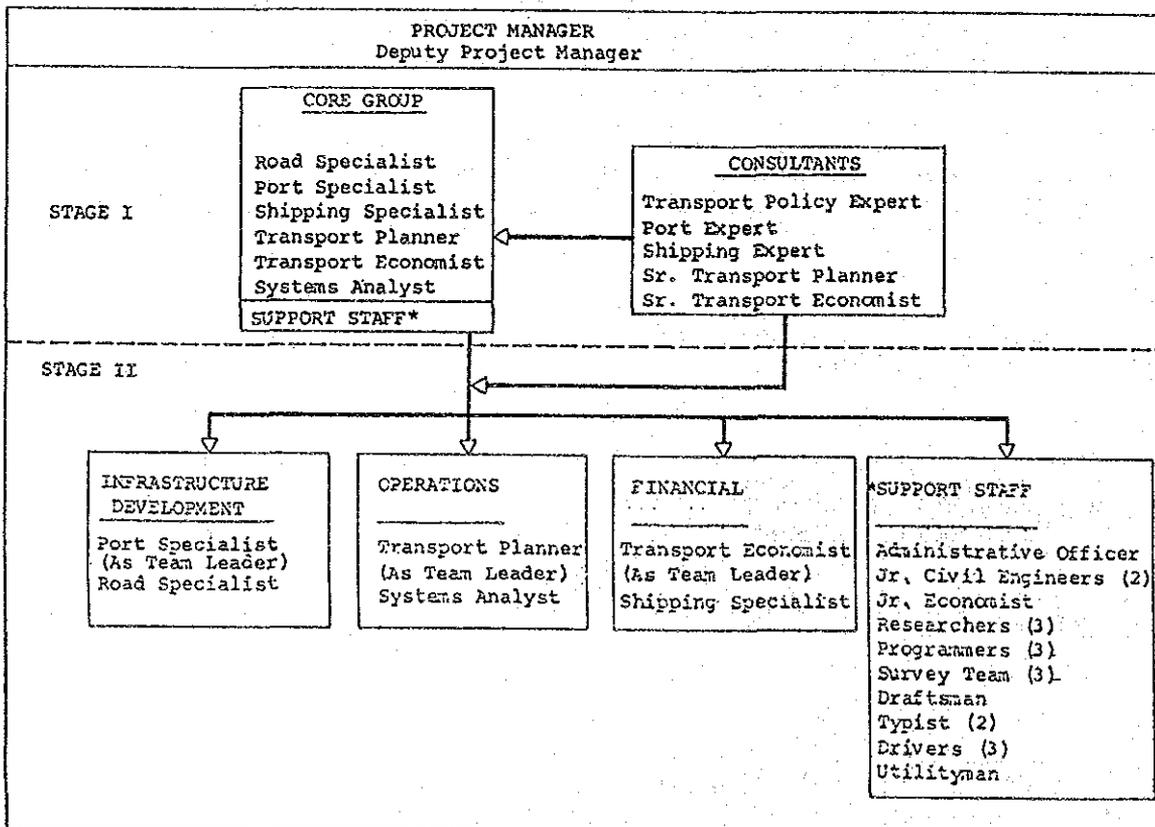
ORGANIZATIONAL STRUCTURE

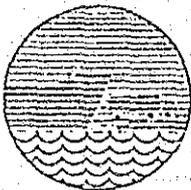


STEERING COMMITTEE



PROJECT TEAM





Republic of the Philippines

**NATIONWIDE ROLL-ON, ROLL-OFF TRANSPORT
SYSTEM DEVELOPMENT STUDY**

Inter-Agency Technical Committee on Transport Planning
DOTC • DPWH • NEDA • MARINA • PPA

Rm. 206 NEDA Complex, EDSA, Diliman, Quezon City • Tel. No. 97-63-63

11 December 1989

Mr. Koji Kobune
Japanese International Cooperation Agency (JICA)
Manila Office
Nauru Pacific Star Bldg.
Sen. Gil Puyat Avenue, Makati

Dear Mr. Kobune:

As agreed upon in the meeting between representatives of the Nationwide Roll-On, Roll-Off Transport System Development Study Team and the JICA Contact Mission held on 4 November 1989, we are proposing consideration of the islands of Cebu, Negros, Bacolod and Panay for possible inclusion in the study.

On the basis of passenger and cargo traffic between the islands considered (shown in the attached tables), the following routes are found to have potential for development of RORO facilities:

By Commodities :

Argao, Cebu - Loon, Bohol
(Alternative routes : Cebu - Tubigon, Cebu - Tagbilaran,
and Cebu - Talibon)
Tuburan, Cebu - Escalante, Negros Occidental
(Alternative route : San Carlos - Toledo)
Carmen, Cebu - Isabel, Leyte

By Passenger Volume:

Argao, Cebu - Loon, Bohol
(Alternative routes : Cebu - Tubigon, Cebu - Tagbilaran,
and Cebu - Talibon)
Bacolod, Negros Occidental - Iloilo, Iloilo
Carmen, Cebu - Isabel, Leyte

We are, therefore, proposing the following routes for consideration in formulating the scope of work of the study:

- 1) Argao, Cebu - Loon, Bohol;
- 2) Tuburan, Cebu - Escalante, Negros Occidental;
- 3) Carmen, Cebu - Isabel, Leyte; and
- 4) Bacolod, Negros Occidental - Iloilo, Iloilo

We intend to confirm the choice for the routes with alternative terminal sites (routes 1 & 2) in consultation with the JICA Scope of Work Mission which is scheduled to arrive early next year.

Best regards.

Very truly yours,

CTV Valbuena
CESAR T. VALBUENA
Project Coordinator

cc: Moriya Miyamoto
Resident Representative

Nationwide Roll-on Roll-off Transport System Development Study

Passengers and Selected Commodities that may be attracted to RoRo

1. Passenger Traffic

Between the islands of:	
Cebu and Bohol	628,203
Iloilo and Negros	571,131
Cebu and Samar/Leyte	491,558
Cebu and Negros	457,702

2. Rice

Between the islands of:	
Iloilo and Negros	40,855
Cebu and Negros	7,949
Cebu and Samar/Leyte	6,815
Cebu and Bohol	5,371

3. Corn

Between the islands of:	
Cebu and Bohol	12,225
Iloilo and Negros	7,016
Cebu and Samar/Leyte	2,768
Cebu and Negros	2,080

4. Sugar

Between the islands of:	
Iloilo and Negros	71,953
Cebu and Negros	39,971
Cebu and Samar/Leyte	10,339
Cebu and Bohol	7,130

5. Beer and Softdrinks

Between the islands of:	
Cebu and Negros	103,192
Cebu and Samar/Leyte	43,653
Cebu and Bohol	23,515
Iloilo and Negros	14,035

6. Fertilizers

Between the islands of:	
Iloilo and Negros	52,450
Cebu and Samar/Leyte	50,567
Cebu and Negros	12,826
Cebu and Bohol	3,296

7. Cement

Between the islands of:	
Cebu and Bohol	3,844
Cebu and Samar/Leyte	2,047
Iloilo and Negros	1,490
Cebu and Negros	55

8. Fruits and Vegetables

Between the islands of:	
Cebu and Bohol	24,391
Cebu and Negros	2,660
Iloilo and Negros	1,682
Cebu and Samar/Leyte	1,608

as per type of commodity

Rice

Between the islands of:	
Cebu and Bohol	5,371
Cebu and Negros	7,949
Cebu and Samar/Leyte	6,815
Iloilo and Negros	40,855

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Fruits and Vegetables

Between the islands of:	
Cebu and Bohol	24,391
Cebu and Negros	2,660
Cebu and Samar/Leyte	1,608
Iloilo and Negros	1,682

TOTAL COMMODITIES

Between the islands of:	
Cebu and Bohol	79,772
Cebu and Negros	168,733
Cebu and Samar/Leyte	117,797
Iloilo and Negros	189,481

NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY

Origin - Destination Matrices

Commodity 1 - RICE

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	TOTAL
CEBU	-	4833	2796	5105	121	12855
BOHOL	538	-	347	0	0	885
NEGROS	5153	17	-	994	2090	8254
SAMAR/LEYTE	1710	79	0	-	483	2272
ILOILO	62179	1875	38765	30737	-	133556
TOTAL	69580	6804	41908	36836	2694	157822

Commodity 2 - CORN

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	TOTAL
CEBU	-	1172	516	192	149	2029
BOHOL	11053	-	65	154	0	11272
NEGROS	1564	1	-	0	84	1649
SAMAR/LEYTE	2576	35	0	-	0	2611
ILOILO	689	0	6932	0	-	7621
TOTAL	15882	1208	7513	346	233	25182

Commodity 3 - SUGAR

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	TOTAL
CEBU	-	6859	9027	7669	3535	27090
BOHOL	271	-	154	0	0	425
NEGROS	30944	3455	-	2314	60331	97044
SAMAR/LEYTE	2670	0	0	-	400	3070
ILOILO	3161	0	11622	1364	-	16147
TOTAL	37046	10314	20803	11347	64266	143776

Commodity 4 - COPRA

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	TOTAL
CEBU	-	122	1119	77	124	1442
BOHOL	9617	-	0	0	0	9617
NEGROS	6667	344	-	0	3312	10323
SAMAR/LEYTE	14831	450	0	-	180	15461
ILOILO	462	0	6003	0	-	6465
TOTAL	31577	916	7122	77	3616	43308

Commodity 5 - LOGS AND WOOD

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	TOTAL
CEBU	-	1734	2842	35	4495	9108
BOHOL	44656	-	15	2594	0	47265
NEGROS	2805	14	-	0	524	3343
SAMAR/LEYTE	4434	0	0	-	1587	6021
ILOILO	21	0	318	4	-	343
TOTAL	51916	1748	3175	2633	6606	66078

NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY

Origin - Destination Matrices

Commodity 6 - BEER AND SOFTDRINKS

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	22842	98128	42506	77976	241452
BOHOL	673	-	702	0	0	1375
NEGROS	5064	26	-	0	8007	13097
SAMAR/LEYTE	1147	0	0	-	0	1147
ILOILO	17242	1344	6028	54	-	24668
TOTAL	24126	24212	104858	42560	85983	281739

Commodity 7 - PULP AND PAPER

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	396	59	84	25	564
BOHOL	474	-	2	0	0	476
NEGROS	195	1	-	0	49	245
SAMAR/LEYTE	26	0	0	-	0	26
ILOILO	24	0	274	0	-	298
TOTAL	721	397	335	84	74	1611

Commodity 8 - IRON AND STEEL

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	1634	1888	77811	2540	83873
BOHOL	6115	-	279	0	0	6394
NEGROS	3329	7	-	0	528	3864
SAMAR/LEYTE	627	0	0	-	0	627
ILOILO	4935	0	407	18	-	5360
TOTAL	15006	1641	2574	77829	3068	100118

Commodity 9 - FERTILIZER

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	2934	10942	0	0	13876
BOHOL	362	-	0	0	0	362
NEGROS	1884	0	-	608	1905	4397
SAMAR/LEYTE	50567	3900	40125	-	19681	114273
ILOILO	461	0	50546	0	-	51006
TOTAL	53274	6834	101612	608	21586	183914

Commodity 10 - CEMENT

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	3782	397	2031	253	6463
BOHOL	62	-	430	2400	0	2892
NEGROS	159	0	-	0	1	160
SAMAR/LEYTE	16	0	0	-	0	16
ILOILO	6	0	1489	730	-	2225
TOTAL	243	3782	2316	5161	254	11756

NATIONWIDE ROLL-ON ROLL-OFF TRANSPORT SYSTEM DEVELOPMENT STUDY

Origin - Destination Matrices

Commodity 11 - FRUITS AND VEGETABLES

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	353	302	1274	247	2176
BOHOL	24038	-	1	2	0	24041
NEGROS	2358	20	-	0	151	2529
SAMAR/LEYTE	334	0	0	-	0	334
ILOILO	644	0	1531	0	-	2175
TOTAL	27374	373	1834	1276	398	31255

Commodity 12 - MINERAL OIL

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	6002	9377	26116	16099	57594
BOHOL	143	-	1	0	0	144
NEGROS	2	0	-	0	2	4
SAMAR/LEYTE	1316	0	0	-	0	1316
ILOILO	2437	0	100	4	-	2541
TOTAL	3898	6002	9478	26120	16101	61599

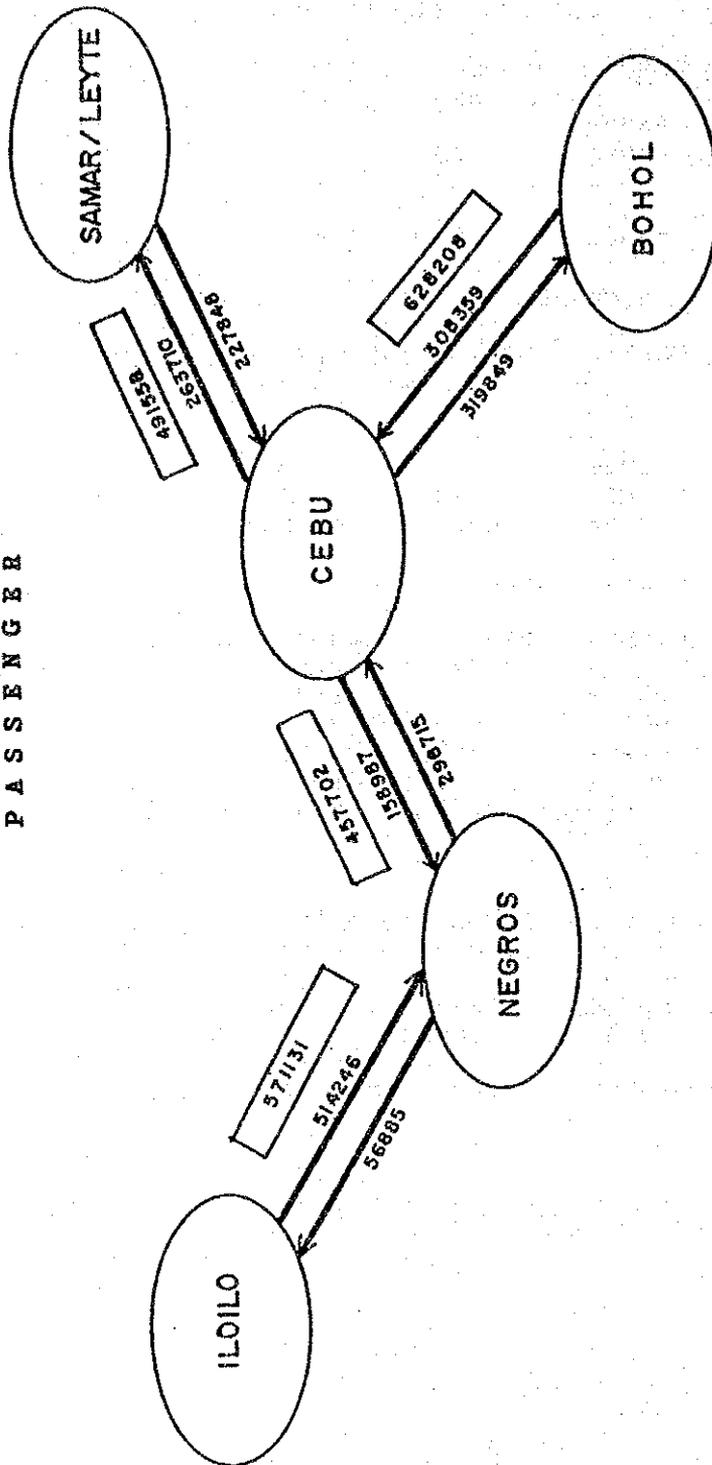
Commodity 13 - REST GROUP

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	33572	42219	425550	24358	525699
BOHOL	32199	-	1596	1	352	34148
NEGROS	68185	443	-	10815	145575	225018
SAMAR/LEYTE	37061	566	51	-	8	37686
ILOILO	46031	0	31872	668	-	78571
TOTAL	183476	34581	75738	437034	170293	901122

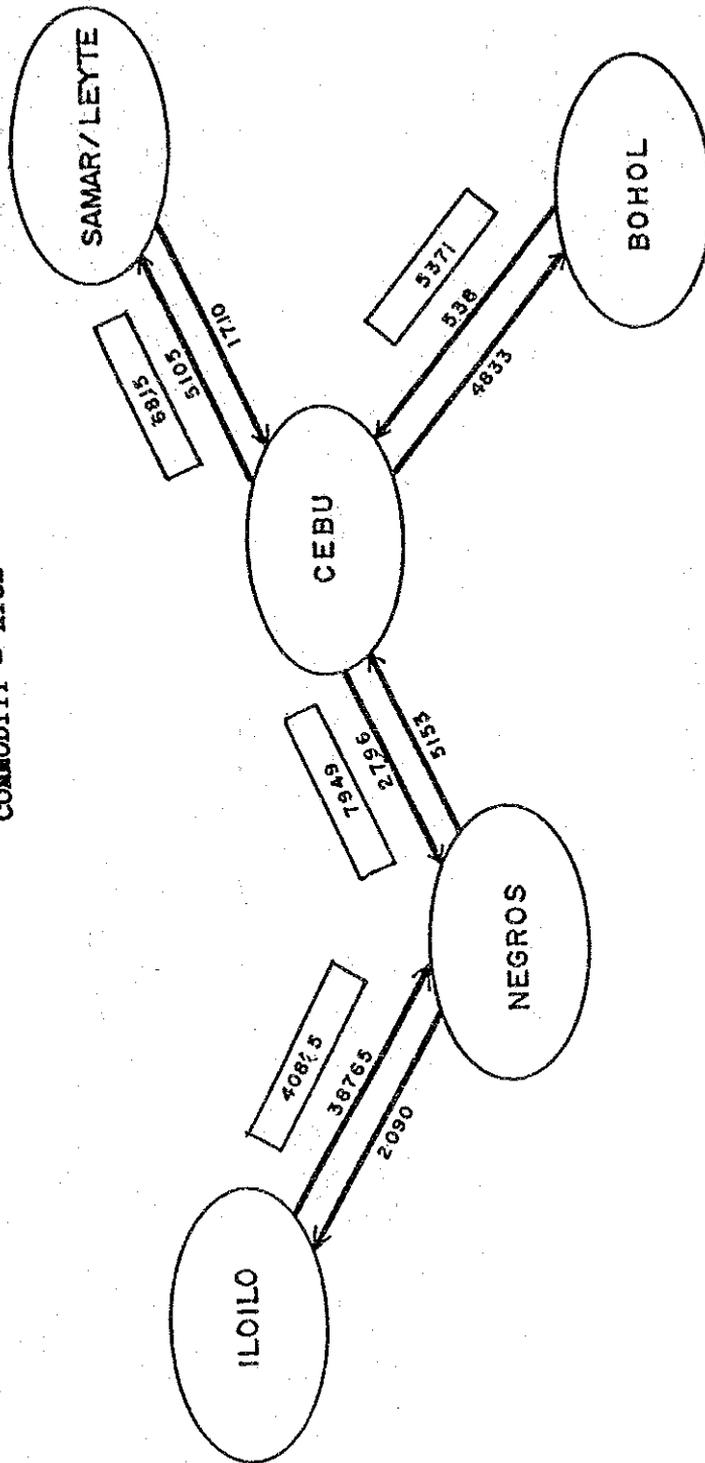
PASSENGERS

	CEBU	BOHOL	NEGROS	SAMAR/LEYTE	ILOILO	
CEBU	-	319849	158987	263710	0	742546
BOHOL	308359	-	6791	2492	0	317642
NEGROS	298715	6267	-	0	56885	361867
SAMAR/LEYTE	227848	4708	0	-	0	232556
ILOILO	0	0	514246	0	-	514246
TOTAL	834922	330824	680024	266202	56885	2168857

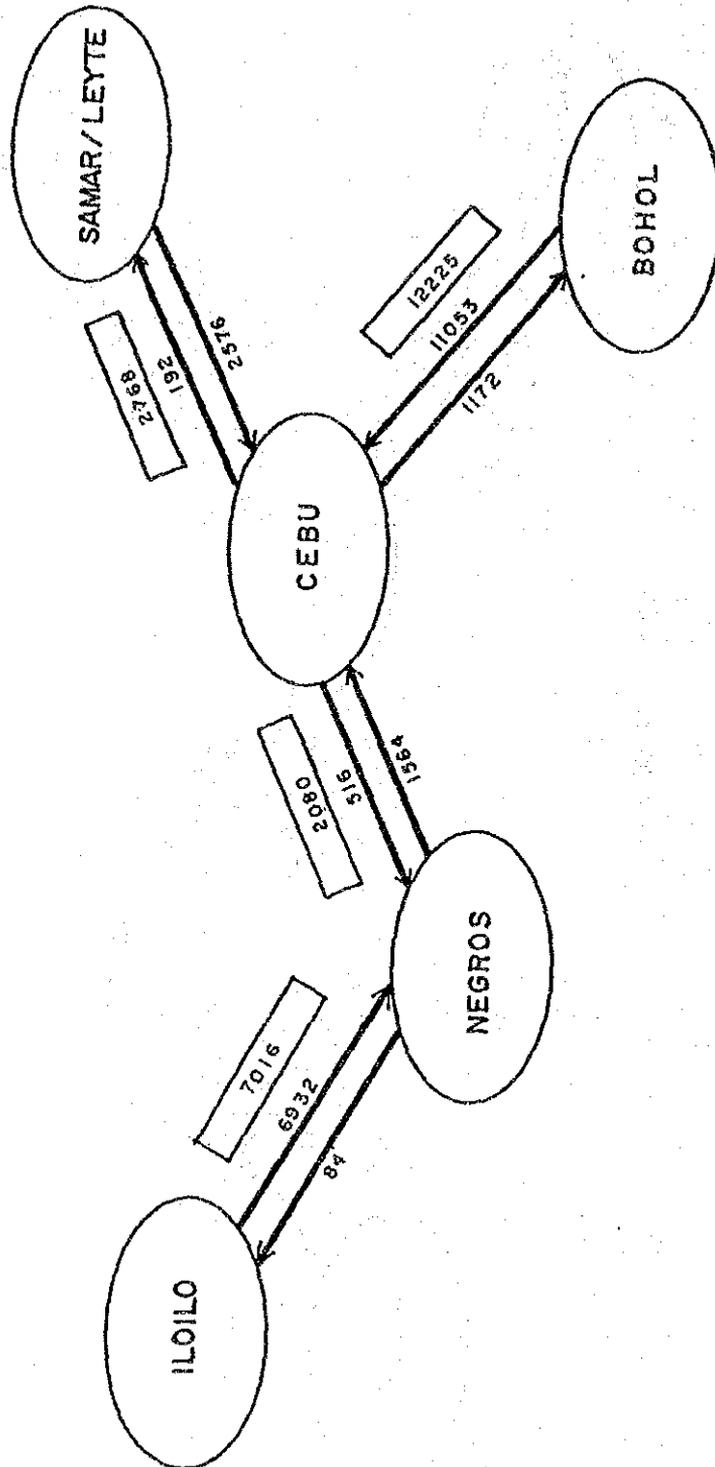
PASSENGER



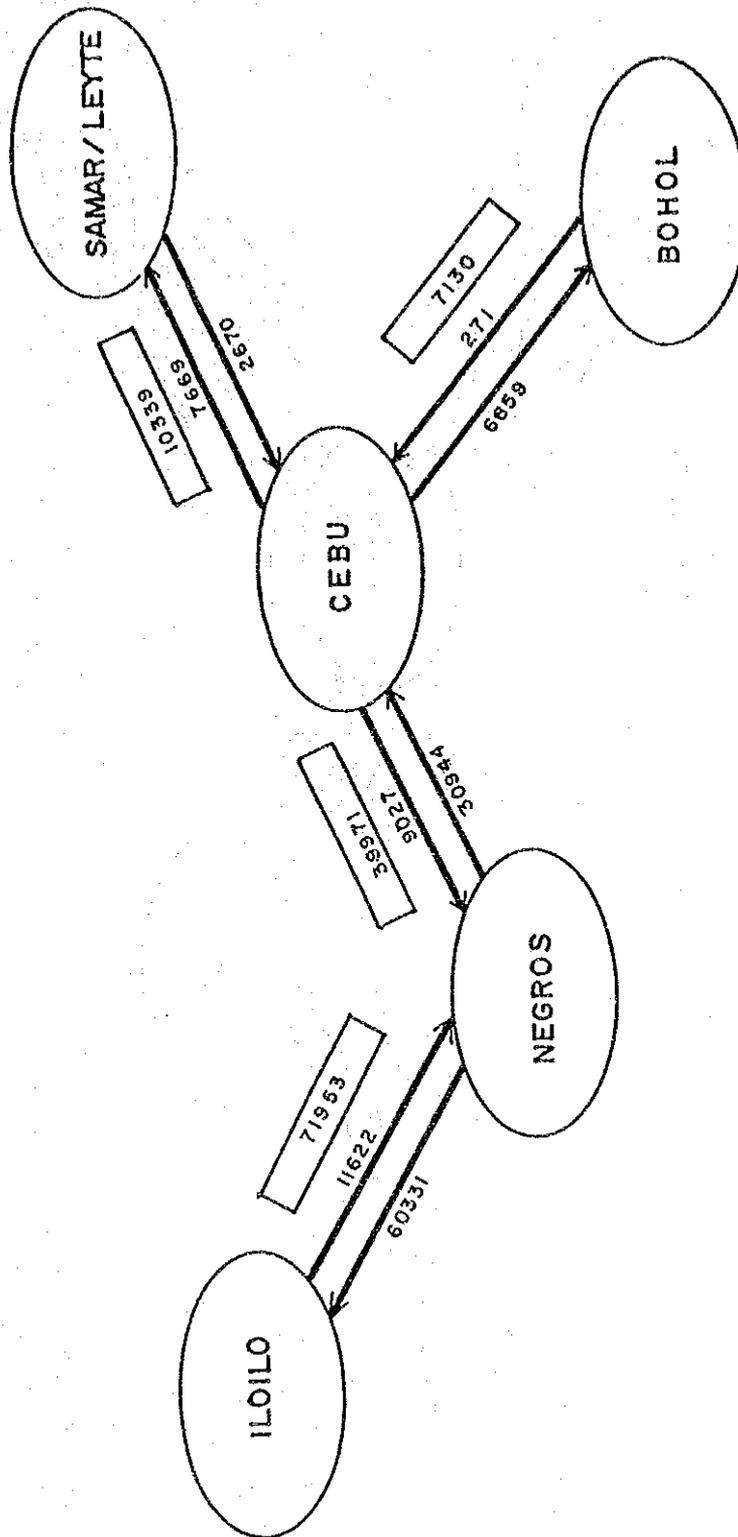
COMMODITY - RICE



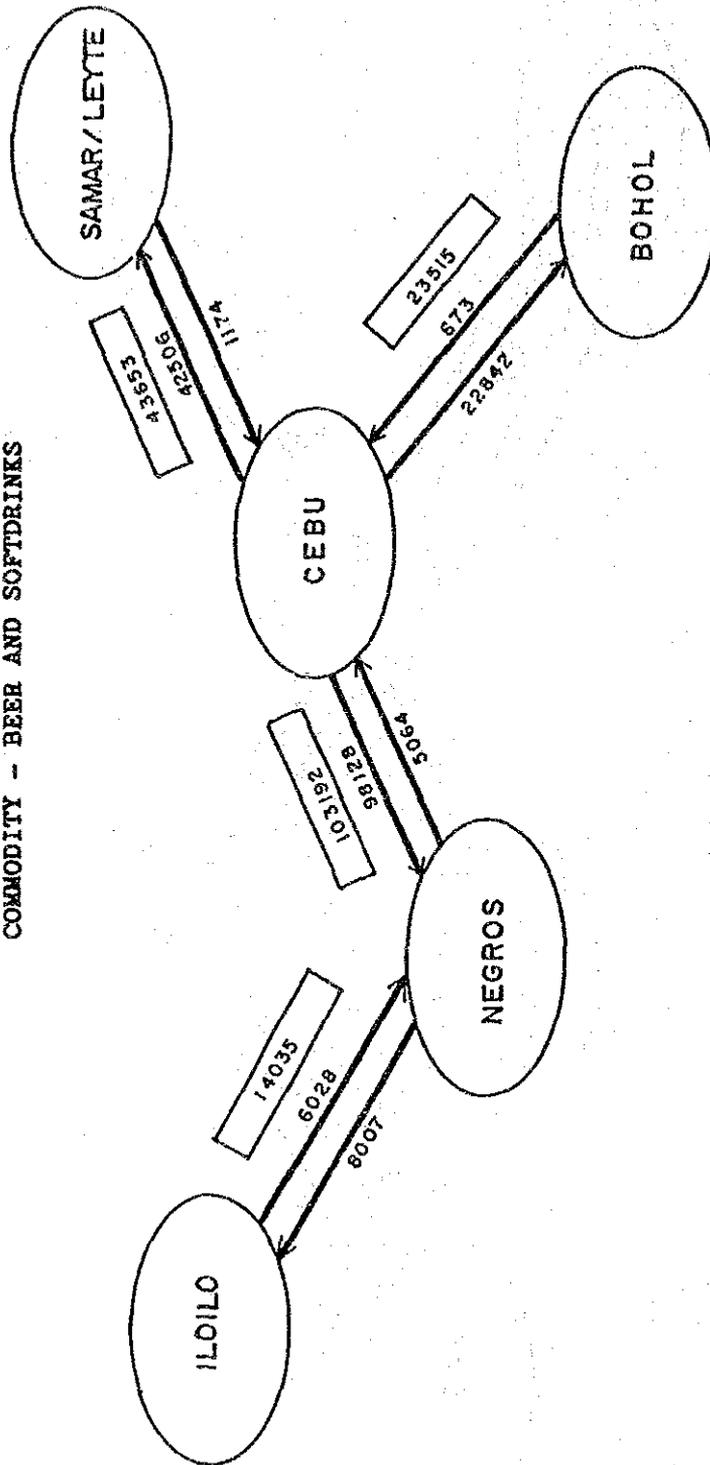
COMMODITY - CORN



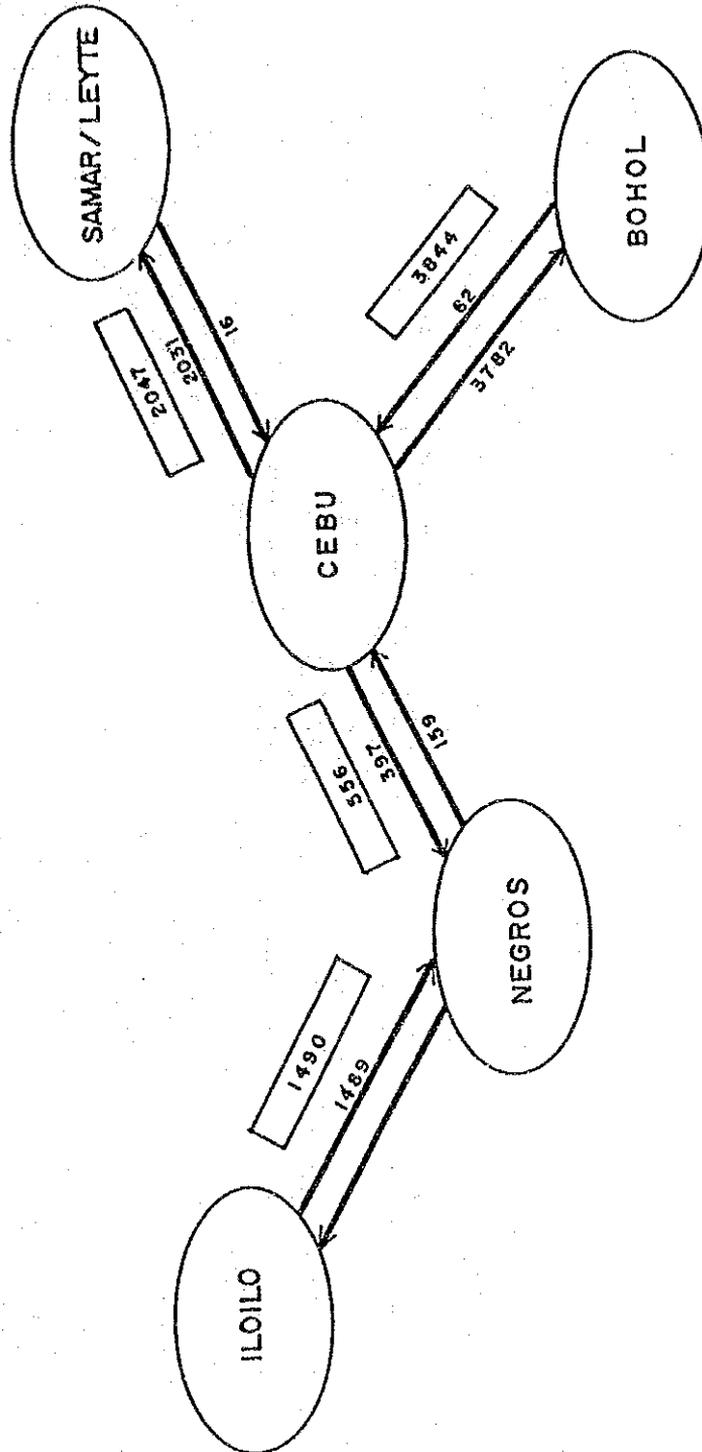
COMMODITY - SUGAR



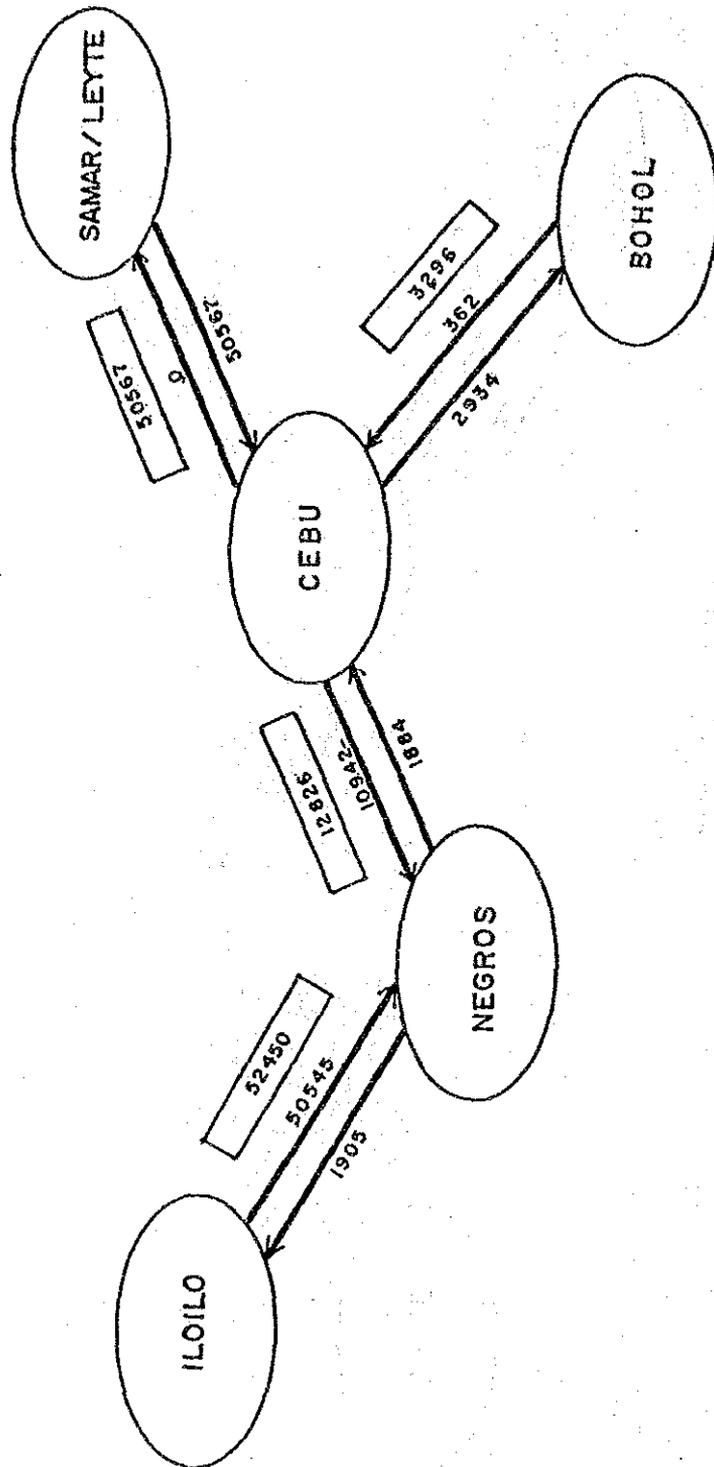
COMMODITY - BEER AND SOFTDRINKS



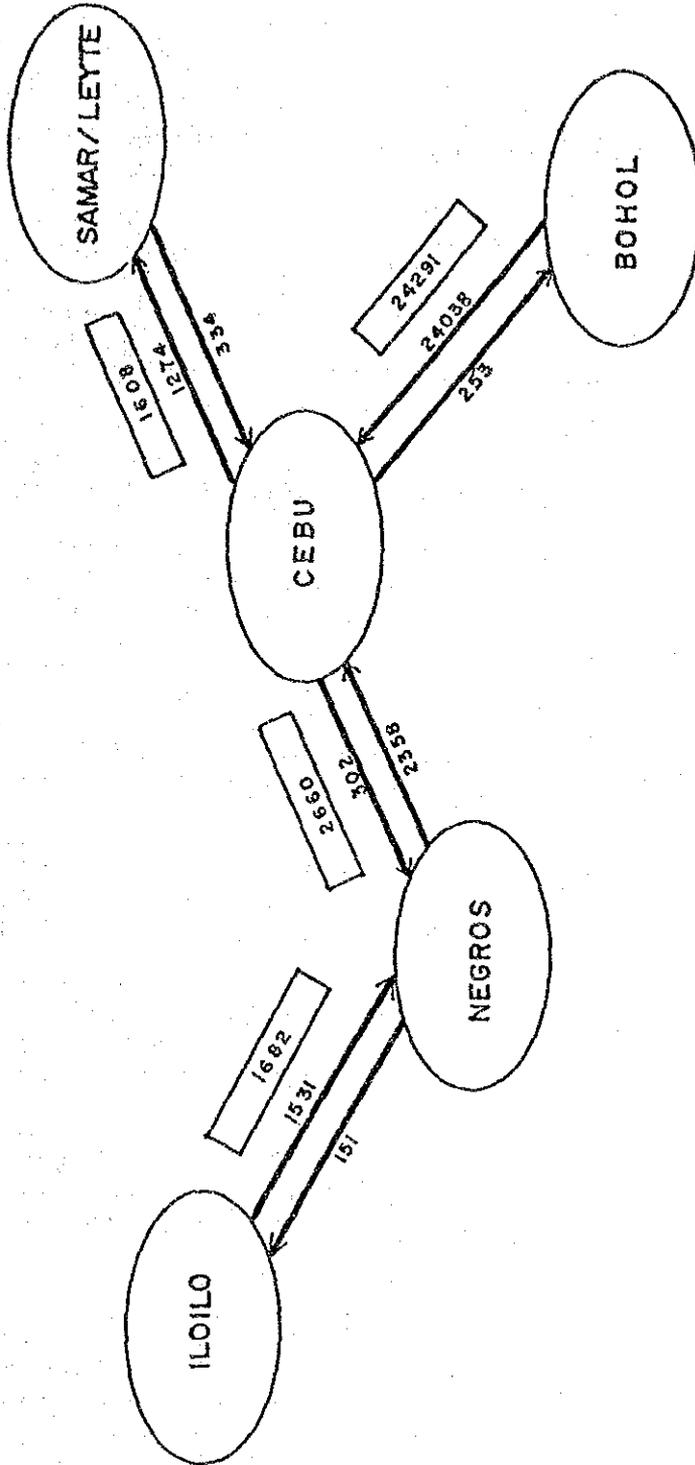
COMMODITY - CEMENT



COMMODITY - FERTILIZERS



COMMODITY - FRUITS AND VEGETABLES



資料 8. 面会者リスト

面会者リスト

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資料9. 収集資料リスト

収集資料リスト

番号	資料の名称	収集先名称または発行機関
1-1	INCEPTION REPORT(OCTOBER 1989)	NATIONWIDE ROLL ON ROLL OFF TRANSPORT SYSTEM DEVELOPMENT STUDY(NRTSDS)
1-2	FINAL REPORT TEXT VOLUMES FERRY STUDY WESTERN CENTRAL	DPWH
1-3	RECONAISSANCE SURVEY REPORT(VISAYA)	NRTSDS
1-4	" " (BATANGAS BICOL)	NRTSDS
1-5	IMPLEMENTATION PROGRAM FOR FEEDER FERRY DEVELOPMENT PROJECT	DPWH
1-6	EXECUTIVE ORDER NO.124(DPWH)	DPWH
1-7	PRESENT ORGANIZATION OF THE DPWH	"
1-8	LEGAL BASIS	NEDA
1-9	10TH YEAR ANNIVERSARY REPORT (1979-1989)	DOTC
1-10	EXECUTIVE ORDER No.125-A (DOTC)	DOTC
1-11	MEMORANDUM OF AGREEMENT	NRTSDS
1-12	HIGHLIGHTS OF PROPOSED 1990 DPWH BUDGET	DPWH
1-13	POPULATION, LAND AREA AND DENSITY	NEDA
1-14	PER CAPITA GROSS DOMESTIC PRODUCT	
1-15	MV MAHALIKA I TRAFFIC	
1-16	PR DOMESTIC FLIGHT SCHEDULE	
1-17	Updated PHILIPPINE DEVELOPMENT PLAN '88~'92 INFRASTRUCTURE	NEDA
1-18	MINI-SURVEY OF DOMESTIC SHIPPING COMPANIES	MOTC

番号	資料の名称	収集先名称または発行機関
2-1	NATIONWIDE ROLL ON ROLL OFF TRANSPORT SYSTEM DEVELOPMENT STUDY, Inception Report	IATCTP
2-2	ANNUAL STATISTICAL REPORT 1988	PPA
2-3	MEMORANDUM ORDER NO.473 (CREATING AN INTER-AGENCY TECHNICAL COMMITTEE ON TRANSPORT PLANNING)	OFFICE OF THE PRESIDENT, OF THE PHILIPPINES
2-4	MEMORANDUM OF AGREEMENT (RoRo オフィスの設置根拠)	ERLINDA D. CABRERA Chief, Records Section, DOTC
2-5	SELECTED PHILIPPINE DEVELOPMENT INDICATORS (SUMMARY TABLE) (経済指標等)	
2-6	長期計画 (抜粋)	
2-7	長期計画 (抜粋)	
2-8	PUBLIC INVESTMENT PROGRAM, BY SECTOR CY1987	
2-9	IMPLEMENTATION STATUS OF THE EXPAND MTRIP, BY SECTOR, CY1988	
2-10	ORGANIZATIONAL AND INSTITUTIONAL STRUCTURES (関係機関の権限)	
2-11	PROJECT PROFILE (世銀第4次プロジェクトの内容)	
2-12	DOCK NEWS	PPA
2-13	DOCK NEWS	PPA
2-14	PD-VISAYAS, Quarterly	PPA
2-15	Luzon Reports	PPA
2-16	NATURAL CONDITIONS IN EACH PORT	RoRo オフィス
2-17	港湾平面図 (I)	RoRo オフィス
2-18	港湾平面図 (II)	PPA
2-19	REVISED PPA ORGANIZATIONAL CHART	PPA
2-20	MEMORANDUM CIRCULAR NO.39 (RoRo サービス営業権の免許に関する資料)	MARINA

番号	資料の名称	収集先名称または発行機関
2-21	ISSUANCE OF CERTIFICATE OF PUBLIC CONVENIENCE (20.に同じ)	(MARINA)
2-22	PHILIPPINE SHIPYARDS WITH SHIPBUILDING CAPABILITIES	
2-23	REPORT ON EXAMINATION OF FINANCIAN STATEMENTS December 31, 1986 and 1987	CJVC
2-24	NUMBER OF LICENSES ISSUED	MARINA
2-25	WAGE RATE, SURVEY FOR VARIOUS VESSEL TYPES	MARINA
2-26	CONTAINER FLEET & APPROVED ROUTES	MARINA
2-27	船社別保有 RoRo 船	RoRo オフィス
2-28	FINANCIAL STATEMENTS (船社/オペレーターの財政)	MARINA
2-29	MEMORANDUM ORDER No.7 (造船, 船舶修理の登録及び免許)	MARINA
2-30	MEMORANDUM ORDER No.9 (船社/オペレーターの登録)	MARINA
2-31	MEMORANDUM ORDER No.46 (運賃に係るガイドライン)	MARINA
2-32	ANNUAL STATISTICAL REPORT 1988	MARINA
2-33	Long List of Possible RoRo Routes	RoRo オフィス
2-34	VESSEL PARTICULARS	RoRo オフィス
2-35	EXECUTIVE ORDER NO.159 (PPA への Mandate)	MALACANANG
2-36	イロイロ港, Iloilo Commercial Port Complex の RoRo ランプ図面	PMU (PPA の Iloilo オフィス)
2-37	RoRo FACILITIES FOR CERTAIN MAJOR ISLANDS IN THE PHILIPPINES, PPA	
2-38	Presidential Decree NO.857 (PPA への Mandate)	MALACANANG

JICA