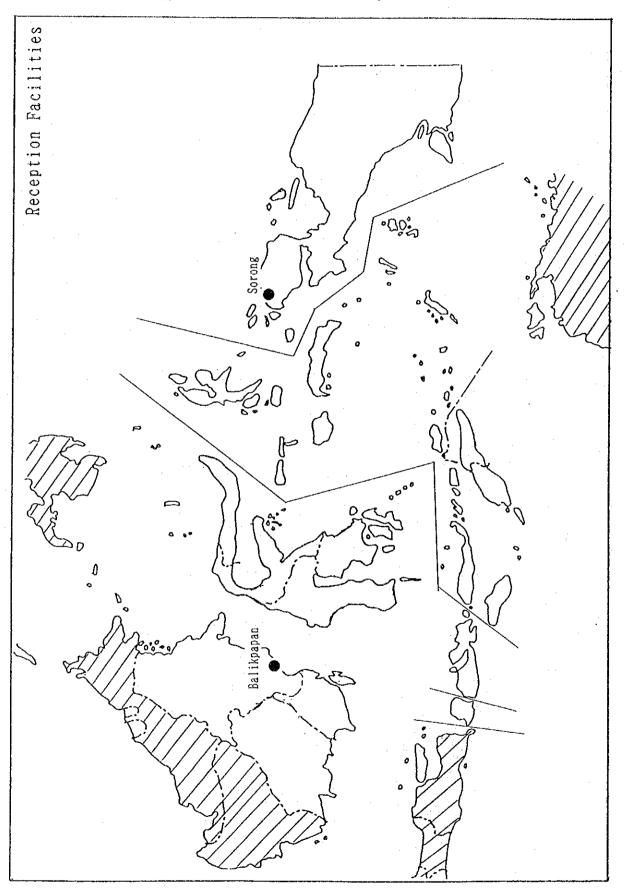


Appendix 4-3 Location of Shipyards

-417-



Appendix 4-4 Location of Reception Facilities

# Appendix 4-5 Reference for Ship Inspection

# (1) Kanwil location

	Provinces	Location
XVI XVII XVIII XIX XX XXI XXII XXII XXI	Nusa Tenggara Barat Nusa Tenggara Timur	Patangkaraya Banjarmasin Samarinda Manado Palu Kendari Ujungpandang Denpasar Mataram Kupang Ambon Jayapura Dili

# (2) List of international conventions ratified by Indonesia

No.	International convention	Date of entry into force	Presidential decree
1.	SOLAS. 1960 International Convention for the Safety of Life at Sea, 1960.	26 May 1965	No. 203/1966 16 Sept.1966
2.	COLREG. 1960 Convention on the International Regulations for the Preventing Collisions at Sea, 1960.	l September 1965	No. 107/1968 24 March 1968
3,	L.L. 1966 International Convention on Load Lines, 1966	21 July 1968	No. 47/1976 2 Nov. 1976
4.	S.T.P. 1971 Special Trade Passenger Ships Agreement, 1971.	2 January 1974	No. 73/1972 21 Dec. 1972
5.	C.L.C. 1969 International Convention on Civil Liability for Oil Pollution Damage, 1969.	19 June 1975	No. 18/1978 1 July 1978
6.	Space S.T.P. 1973 Protocol on Space requirements for Special Trade Passenger Ships 1973.	2 June 1977	No. 43/1979 18 Sept. 1979
7.	COLREG. 1972 Convention on the International Regulations for Preventing Collisions at Sea, 1972	15 July 1977	No. 50/1979 11 Oct 1979.

Νo.	International convention	Date of entry into force	Presidential decree
8.	C.S.C. 1972 International Convention for Safe Containers, 1972	6 Sept. 1977	No. 33/1989 17 July 1989.
9.	FUND. 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971.	16 October 1978	No. 19/1978 1 July 1978.
10.	INMARSAT. 1976 The Convention on the International Maritime Satellite Organization, 1976.	16 July 1979	No. 14/1986 21 April 1986
11.	SOLAS. 1974 International Convention for the Safety of Life at Sea, 1974	25 May 1980	No. 65/1980 13 Dec. 1980
12.	SOLAS PROTOCOL. 1978 Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974.	1 May 1981	No. 21/1988 29 June 1988
13.	TONNAGE. 1969 Intenational Convention on Ton- nage Measurement of Ships, 1969.	18 July 1982	No. 5/1989 25 Jan. 1989
14.	UNCLOS. 1982 United Nations Convention on the Law of the Sea, 1982.	Belum	No. 17/1985 31 Dec. 1985
15.	MARPOL. 73/78 International Convention for the Prevention of Pollution from Ships, 1973 and the Protocol 1978 relating thereto	2 October 1983	No. 46/1986 9 Sept. 1986
16.	S.T.C.W. 1978 International Convention on Standards of Training, Certifi- cation and Watchkeeping for Seafarers, 1978	28 April 1984	No. 60/1986 4 Dec. 1986

.

1.		Sertipikat Pertama di Pusat initial certificates issued by SeaCom)	÷			
	. 8	a. Sertipikat Kesempurnaan: 280 Kapal (s (seaworthiness)	shi	ps)		
	t	<ul> <li>Sertipikat Garis Muat D.N.: 11 "</li> <li>(load line, by government, when operating only in the Indonesian limited waters)</li> </ul>				
	C	c. Sertipikat Penpangkutan : 2 " Minyak Bumi (oil carrier)		. *		
	C	l. Sertipikat SOLAS 1974 SEC: 30 " (safety equipment)				
	e	e. Sertipikat SOLAS 1974 SEC: 30 " (safety construction)				
	f	. Sertipikat Radio telegrapi : 2 "				
	Ę	, Sertipikat Radio teleponi : 3 "				
	h	n. Sertipikat Pembebasan : 9 " (exemption)				
	i	. Sertipikat Radio Non SOLAS: 4 "				
		Jumlah (total) 371 "				
2.	(	Sertipikat Pembaharuan di Pusat renewal issued by SeaCom when in question annual)	at	t loca	l offices o	or at
	a	a. Sertipikat Kesempurnaan	:	129 H	Kapal (ship	s)
	b	. Sertipikat Pengangkutan Minyak Bumi	:	3	IT	
	Ċ	e. Sertipikat Solas 1974 SEC	:	51	н	
	. d	l. Sertipikat Solas 1974 SCC	:	51	н	
	e	e. Sertipikat Radio Telegrapi	:	89	n	
	f	. Sertipikat Radio Teleponi	:	103	11	
	g	. Sertipikat Fitnees	:	19	f1	
	h	. Sertipikat Radio Non Solas	:	42	H .	
		Jumlah (total)	•	487	Kapal (sh	lips)

-421-

3.

Sertipikat Pembaharuan dan Perpanjangan di Daerah (renewal by branch office)

1 year

every year

every 2 years

Ħ

(for 1st class)

every 1.5 years (for 2nd class)

a. Sertipikat K	esempurnaan	:	1,569	Kapal	
b. Sertipikat So	olas 1974 SEC	:	240	**	e e to a
c. Sertipikat So	blas 1974 SCC	:	240	н	· .
d. Sertipikat P	engangkutan Minyak Bumi	:	88	U.	
e. Sertipikat P	embebasan	:	50	п	
f. Sertipikat Pe	enumpang	:	. 10	11	· · · ·
	Jumlah (total)	:	2,197	Kapal	(ships)
Validity and insp	pection			: :	•.

4.

Certificate validity

Periodical inspection (inspection interval)

11

Bottom survey (age less than 12 years) " (age 12 years and above)

(age 12 years and above)

Note: 1st class =  $NS^*$   $MNS^*$ 

2nd class = NS MNS

(4) Shipping data

Foreign ships operation in Indonesian waters (for 1992)

(cargo/tanker/fishing vessel)	392	(ships)
(tug boat)	483	(ships)
(barge)	1,299	(ships)

### (5) Budgetary data (a year) - Indonesia

Printing (certificate, document)	150,000,000Rp.
Printing (rules, regulations)	100,000,000
Training (ship inspectors)	240,000,000

BKI-ABS	143	BKI-KRS	1	
BKI-BV	5	BKI-LR	48	
BKI-DNV	8	BKI-NK	37	1992-09-01
BKI-GL	15			

(6) Summary of Double class list between BKI and foreign classification societies

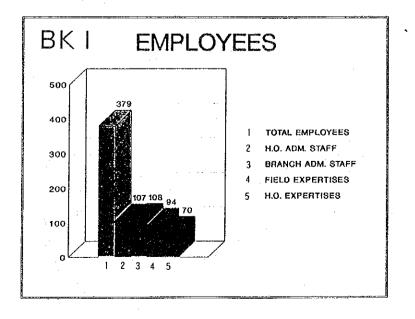
(7) Indonesian ships classed by BKI (for 1992)

3890 (ships)

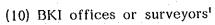
(8) Certification Data

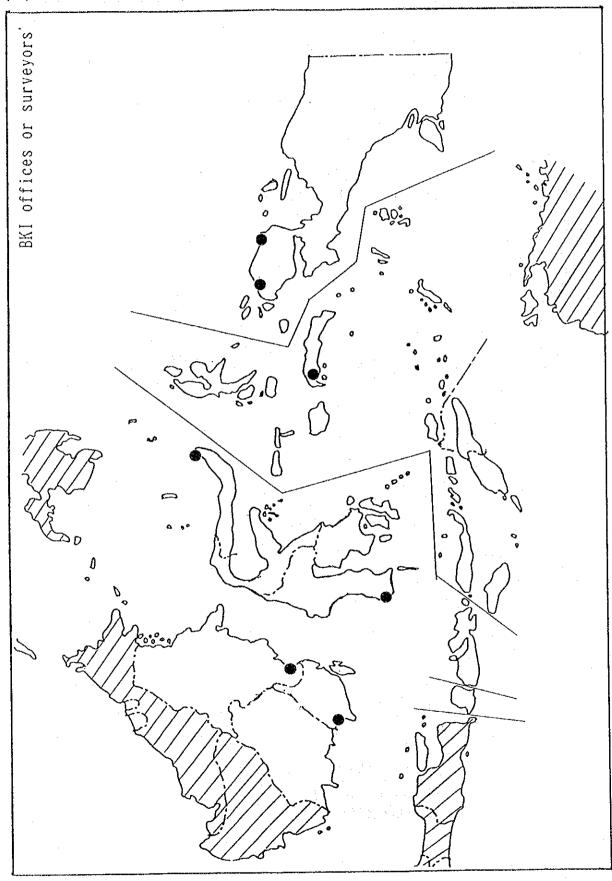
seaworthiness certificate

- a. Head office = 409 ships b. Region office = 1,569 ships (including Eastern Indonesia) 240 ships c. Special for Eastern Indonesia - Nusa Tenggara Timur 5 ships ÷ (East Nusa Tenggara) - Sulawesi Selatan 40 ships = (South Sulawesi) - Sulawesi Tenggara 13 ships = (South East Sulawesi) Sulawesi Utara 18 ships (North Sulawesi) = 106 ships - Maluku - Irian 58 ships ==
- (9) BKI Employees



-423-





### Appendix 4-6

Example of documents required for design examination of a newbuilding.

#### 1. specifications of the ship

2. drawings to show structure and arrangement of (1) hull, (2) machinery, (3) sails, (4) drainage system, (5) steering engine, (6) mooring equipment, (7) anchoring equipment, (8) lifesaving appliances, (9) fire-fighting equipment, (10) accommodation facilities, (11) sanitary equipment, (12) navigational installations, (13) loading and storage system of dangerous goods and other special cargoes, (14) cargo handling gear, (15) electrical appliances, (16) other items laid down by the Minister

3. drawings (for the outside of frames of a steel ship and the outside of shell plate of a wooden ship) shown in the following when applying for inspection on load lines (exclusive of timber load line and subdivision load line)

- (1) lines
- (2) curves to show total displacement for each draft up to the topmost flush deck and the displacement for each centimeter

4. drawings to show the structure and arrangement of the gears required to load deck-loaded timber cargo (only for ships subjected to timber load line inspection)

5. <u>documents</u> shown in the following (for ships subjected to sub-division load line inspection)

- (1) curves to show the heights between centre of buoyancy for each draft up to margin line and metacenter (longitudinal and transverse)
- (2) curves to show the distance from center of flotation to mid-ship for each draft up to margin line
- (3) curves to show the area of each transverse cross section up to margin line
- (4) calculation table on permissible length
- (5) curves to show permissible length
- (6) curves regarding areas of each square station for each draft up to margin line, and the height from the base line to the center of gravity of the areas
- (7) calculation table of damage stability
- (8) arrangement of crossflooding installations

documents shown in the following for ships subjected to damage stability test (except ships of the above)

- (1) calculation table of damage stability
- (2) arrangement of crossflooding installations
- documents shown in the following for ships subjected to stability test
- (1) curves on deadweight, etc. (hydrostatic curves)
- (2) curves on stability (cross curves of stability)
- (3) curves on angle of flooding
- (4) calculation table on designed weight and centre of gravity

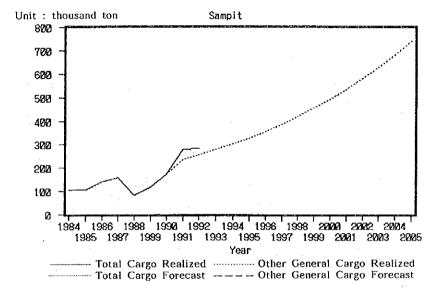
strength calculation document (including lines of force) for ships subjected to cargo handling gear inspection

6. documents on submarine equipment, as necessary

- 7. documents on elevators, as necessary
- 8. documents on incinerators, as necessary
- 9. documents on container installations as necessary

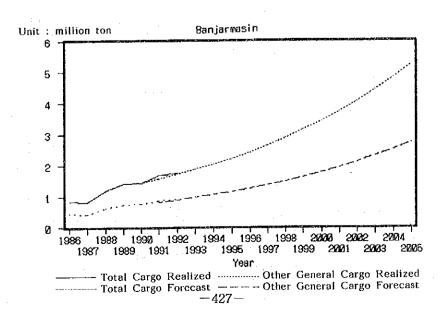
1.1.1			- N							
· · · · · · · · · · · · · · · · · · ·	1984	1985	1986	1987	1988	1989	1990	1991	1992	
General cargo										
Unitized	· · ·									
Roll							_			
Solid Bulk										
Liquid Bulk		· .								
Bag Cargo			1		1					
Druge				··· [						
Container										
Total	105,840	107,624	143,060	160,381	83,176	118,811	175,475	280,130	284,610	

Appendix 5-1 Reference for Demand Forecast by Over Middle Class Port 1 Sampit



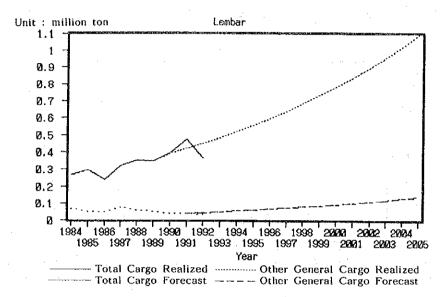
## 2 Banjarmasin

									Unit : tor
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo			433,733	427,482	599,902	692,488	719,876	821,180	799,651
Unitized			187	184	265	318	323	374	392
Roll			1						
Solid Bulk			186,539	183,851	264,434	317,599	322,637	372,970	391,393
Liquid Bulk		1	31,565	31,110	44,746	53,743	54,595	63,112	68,230
Bag Cargo			165,666	163,279	234,845	282,062	286,535	331,237	347,598
Drum			19,200	18,923	27,218	32,690	33,208	38,389	40,285
Container					14,949	45,980	30,305	46,035	110,400
Total			836,891	824,830	1,186,359	1,424,880	1,447,479	1,673,297	1,755,949



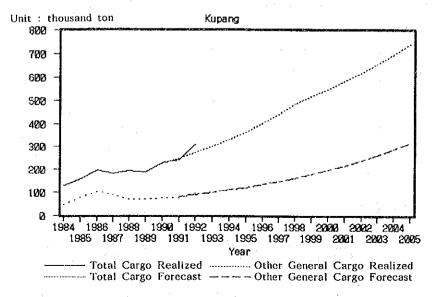
### 3 Lember

	1984	1985	1986	1987	1988	1989	1990	1991	Unit : ton 1992		
General cargo	69,718	51,914	47,021	75,484	60,429	52,803	38,966	40,763	35,777		
Unitized			-		1	2.1					
Roll											
Solid Bulk	19,739	28,758	23,805	53,780	60,962	124,804	129,133	197,983	91.592		
Liquid Bulk											
Bag Cargo	172,238	207,465	166,613	190,968	229,906	167,417	222,003	223,972	230,595		
Drus	4,991	6,994	3,129	364	2,067	5,368	3,933	10,906	8,948		
Container		ļ									
Total	266,686	295,131	240,568	320,596	353,364	350,392	394,035	473,624	366,912		



## 4 Kupang

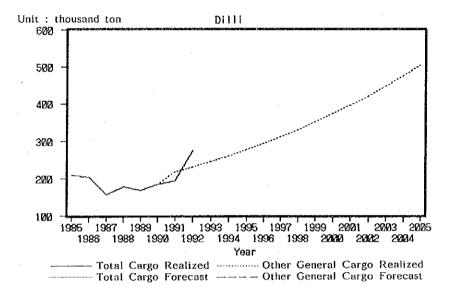
							i je	Unit : ton		
	1984	1985	1986	1987	1988	1989	1990	1991	1992	
General cargo	47,442	79,319	102,794	90,754	70,815	71,996	74,213	72,886	95,460	
Unitized	5					. ]				
Roll					.					
Solid Bulk	6,815	12,700	29,945	10,000	39,412	25,376	45,152	60,482	76,787	
Liquid Bulk	· ·				188					
Bag Cargo	62,890	57,943	64,594	77,580	79,857	78,858	96,610	99,473	121,834	
Drux	12,390	9,800		4,452	4,371	11,635	9,323	7,350	13,095	
Container							3,960	2,629	1,320	
Total	129,537	159,762	197,333	182,786	194,644	187,865	229,258	242,820	308,496	



-428--

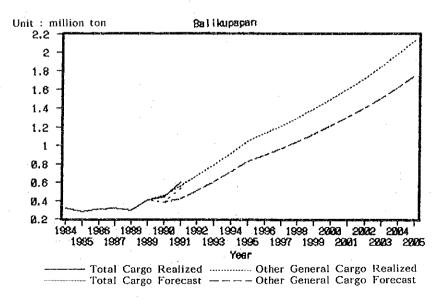
5 Dilli

									Unit : to
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo							1		
Unitized		1							
Roll									
Solid Bulk									
Liquid Bulk			1						
Bag Cargo					i				
Drun									
Container							ĺ		
Total		208,453	203,862	156,533	177,535	168,549	184,129	193,326	274,674



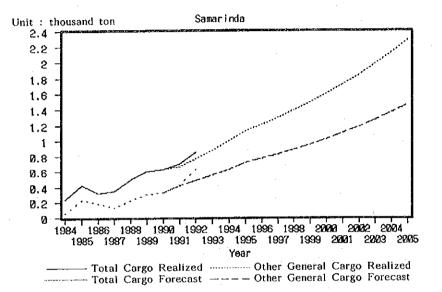
6 Balikupapan

and the second second									Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	312,980	271,727	305,878	315,283	295,249	402,781	315,432	457,450	1,423,703
Unitized	· ·						55,060	64,164	115,448
Roll							3,879	2,763	
Solid Bulk									203,495
Liguid Bulk									
Bag Cargo							47,266	46,009	131,302
Drun				·			16,496	16,905	
Container	6,416	8,346	2,876	5,968	1,671	3,547	6,785	9,990	2,756
Total	319,396	280,073	308,754	321,251	296,920	406,328	444,918	597,281	1,876,704



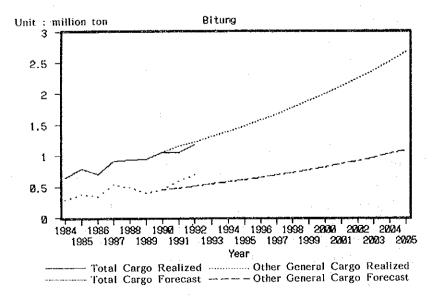
#### 7 Samarinda

and the second second	· ·								<u>Unit : ton</u>
· · ·	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	23,610	194,249	155,882	93,256	164,982	244,211	269,600	371,818	531,091
Unitized	35,224	37,237	26,303	40,859	54,400	58,712	59,114	53,780	55,727
Roll									
Solid Bulk									· · · · · · · · · · · · · · · · · · ·
Liquid Bulk						· .		11	2.1.1
Bag Cargo	165,594	175,058	123,645	192,084	255,743	276,014	277,902	253,253	220,954
Drun	13,499	14,267	10,077	15,655	20,843	22,495	22,249	20,780	
Container									45,534
Total	237,927	420,811	315,907	341,854	495,968	601,432	628,865	699,631	853,306



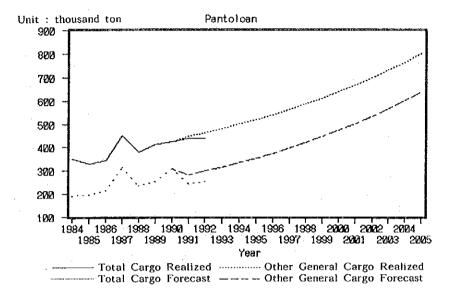
#### 8 Bitung

						•		· · ·	Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	255,966	351,436	321,540	486,861	413,849	303,358	354,601	462,340	547,527
Unitized	24,651	12,954	14,001	24,133	28,400	40,737	47,590	55,498	64,968
Roll	683	724	822	629	4,194	6,259	4,313	3,680	· ·
Solid Bulk	38,933	101,594	79,886	83,146	60,426	65,073	89,625	85,836	69,209
Liquid Bulk	8,830	29,082			29,540	89,683	146,740		52,215
Bag Cargo	289,939	259,450	254,999	285,366	356,580	364,216	338,852	352,464	372,649
Drun	14,835	15,182	18,856	5,116	4,283	22,987	21,211	24,052	the second
Container	8,850	10,149	11,130	21,294	35,916	47,688	48,186	67,590	70,226
Total	642,687	780,571	701,234	906,545	933,188	940,001	1,051,118	1,051,460	1,176,794



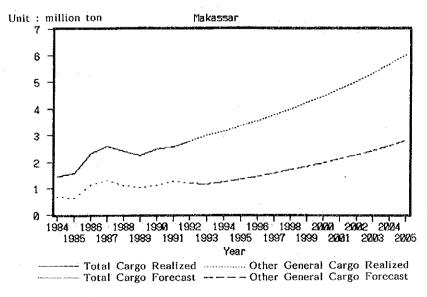
#### 9 Pantoloan

			5						Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	182,082	187,276	206,043	299,972	222,626	244,923	287,285	224,306	235,002
Unitized	10,359	9,411	8,959	14,223	12,911	7,719	23,256	20,846	18,635
Roll									
Solid Bulk									
Liquid Bulk								4,172	3,792
Rag Cargo	155,491	132,496	129,742	135,335	140,321	149,937	105,053	189,706	183, 327
Drue	2,392	1,908	1,421	2,540	4,168	9,733	7,721		
Container									· .
Total	350,324	331,091	348,165	452,070	380,026	412,312	423,315	439,030	440,757



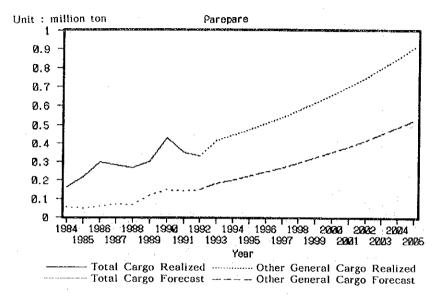
### 10 Uj.Pandang

	-								<u>Unit : ton</u>
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	611,878	554,351	962,578	1,097,400	1,009,303	925,653	957,136	906,064	934,275
Unitized	33,662	89,892	147,927	152,538	59,965	32,463	55,245	152,671	
Roll	33,021	10,574	20,628	26,072	17,921	14,501	18,676	6,571	
Solid Bulk	334,797	473,965	624,582	682,880	476,358	382,778	349,318	347,077	495,119
Liquid Bulk		3,789	11,939	19,900	69,949	56,509	52,763	32,880	84,021
Bag Cargo	376,319	369,991	484,419	582,469	716,639	582,081	729,752	893,320	852,883
Drue	50,576	69,914	62,232	25,491	30,826	190,511	234,007	24,609	154,614
Container	4,364	2,001	4,158	6,001	17,628	64,276	70,366	190,821	248,674
Total	1,444,617	1,574,477	2,318,463	2,592,751	2,398,589	2,248,772	2,467,263	2,554,013	2,769,586



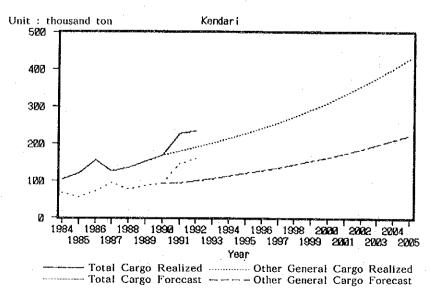
#### 11 Pare-Pare

1	· · · · · · · · · · · · · · · · · · ·								Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	24,695	21,690	18,583	25,785	28,095	50,180	82,416	80,220	74,827
Unitized	30,955	24,733	39,299	45,975	37,800	68,591	65,022	60,318	73,410
Roll									
Solid Bulk	13,000	9,250		3,500					
Liquid Bulk	2,957	2,374			25,487			11,271	11,464
Bag Cargo	92,344	159,710	235,529	203,383	168,370	170,729	276.050	191,558	168,003
Drua			2,778	2,666	4,638	9,224	5.054	5,000	
Container									
Total	163,951	217,757	296,189	281,309	264,390	298,724	428,542	348.367	327,504



#### 12 Kendari

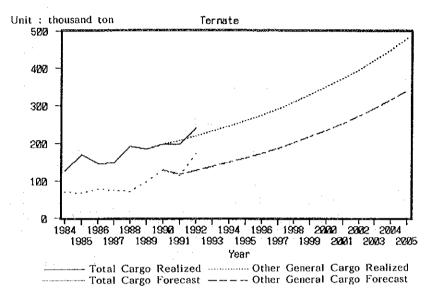
									Unit : to
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	66,051	54,444	71,636	94,129	76,703	86,977	92,758	146,214	159,121
Unitized									100,101
Roll		1							
Solid Bulk	2,742	12,400	18,480				7,000	9,391	9,250
Liquid Bulk							1,000	583	3,200
Bag Cargo	35,005	52,272	65,763	32,182	52,842	62,097	64,784	69,407	66,260
Drug		45			5.247	2.928	4,071	1,161	001200
Container								1,101	
Total	103,798	119,161	155,879	126.311	134,792	152,002	168,613	226,756	234,631



-432-

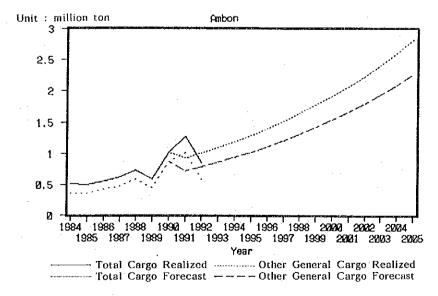
#### 13 Ternate

					:				Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	70,743	68,057	78,145	76,337	72,312	97,639	128,360	113,971	171,981
Unitized									
Roll									
Solid Bulk									
Liquid Bulk	49,125	66,331	53,582	29,532	57,369	62,941	66,990	83,194	67,044
Bag Cargo	6,180	29,837	11,846	37,339	53,768	23,645	2,134		
Drum	2,114	5,614	2,489	4,812	8,303	1,080			
Container							144	506	218
Total	128,162	169,839	146,062	148,020	191,752	185,305	197,628	197,671	239,243



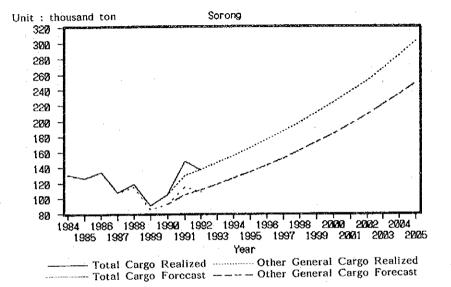
#### 14 Ambon

						· · · · ·			Unit : to
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	168,000	149,000	143,000	157,000	159,000	151,000	243,000	571,000	576,000
Unitized	185,000	204,000	278,000	321,000	429,000	288,000	622,000	442,000	
Roll									
Solid Bulk					·				
Liquid Bulk									
Bag Cargo	146,000	131,000	129,000	134,000	136,000	147,000	133,000	210,000	275,000
Drua	7,000	9,000	4,000	6,000	5,000	3,000	10,000	49,000	
Container		[					5,000	4,000	6,000
Total	506,000	493,000	554,000	618,000	729,000	589,000	1,013,000	1,276,000	857,000



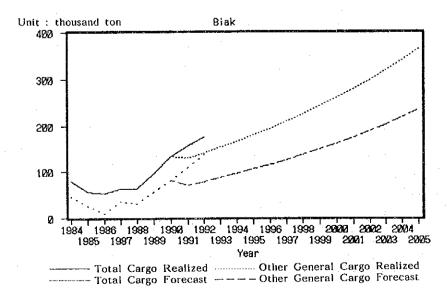
#### 15 Sorong

2	÷								Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	130,716	126,059	134,307	107,548	108,232	82,524	88,184	110,034	102,400
Unitized					5,497	1,942	2,858	1,934	1,003
Roll					27	· .	38		
Solid Bulk					72		5,852	24,671	28,556
Liquid Bulk	263.359	264,380	95,261						
Bag Cargo									
Drum					3,226	5,233	6,330	9,214	
Container				327	644	962	1,195	2,646	4,701
Total	394,075	390,439	229,568	107,875	117,698	90,661	104,457	148,499	138,660



16 Biak

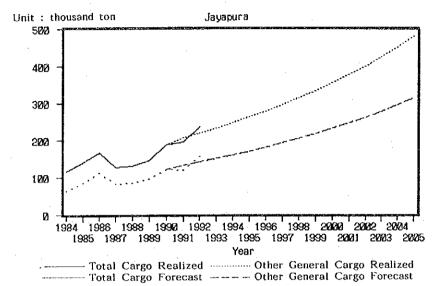
									Unit : tor
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	40,895	20,881	1,213	27,647	26,786	47,854	67,788	87,745	122,141
Unitized	3,608	2,636	7,850	5,561	2,883	2,540	2,668	4,208	5,902
Roll	629	745	515	675	496	676	216	1,021	
Solid Bulk	11,798	8,630	17,930	11,119	23,925	20,167	22,812	14,309	7,129
Liquid Bulk									
Bag Cargo	17.908	18,831	12,103	13,799	6,730	17,425	21,605	25,600	31,106
Drus	5,135	3,751	13,245	2,813	2,349	1,422	7,103	7,255	
Container		600	230	1,207	802	5,200	10,114	15,686	9,671
Total	79,971	56,074	53,086	62,821	63,971	95,284	132,304	155,824	175,949



-434--

## 17 Jayapura

									Unit : ton
	1984	1985	1986	1987	1988	1989	1990	1991	1992
General cargo	65,139	84,079	113,029	82,805	85,684	95,265	122,420	117,534	157,746
Unitized					-			1,814	
Roll					1				
Solid Bulk		6,050						:	4,603
Liquid Bulk							1,376		
Bag Cargo	44,818	44,279	47,071	38,764	39,168	44,840	55,514	68,732	74,190
Drun	5,572	5,621	6,409	5,160	5,222	5,978	8,068	7,947	
Container					T		55	10	2
Total	115,529	140,029	166,509	126,729	130,074	146,083	187,433	196,037	236,541



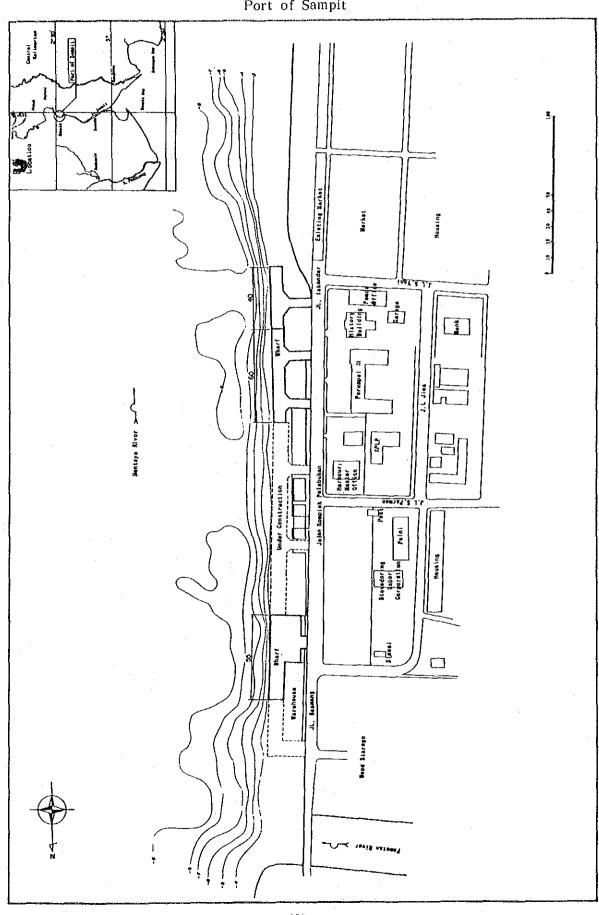
2	
ŧ	
ŀ.	
4	

Appendix	5-2	Total	Vo

olume of Sea Passenger Traffic

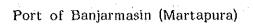
r		~~~~~													-			· · · · · · · · · · · · · · · · · · ·
person	1992	54,660	246,180	. 40,745	53,253	55,215	458,170	75,133	198,209	285,704	732,552	198,894	265,580	613,414	385,285	168,813	37,213	102,748
Unit : p	1661	29,508	193,048	47,421	63,177	21,066	299,939	59,125	184,535	212,248	700,347	158,381	219,941	258,770	361,868	144,843	27, 273	92,043
	1990	13,475	158,845	28,711	55,595	24,849	224,202	50,571	175,103	176,374	674,183	148,076	186,079	169,740	303, 733	142,583	14,119	85,873
	1989	11,735	147,021	34,500	66,037	14,315	225,376	62,672	177,978	153,299	605,553	89,486	111,883	102,010	248,199	131,209	14,900	82,377
	1988	12,267	129,289	66,634	55,651	840	135,883	58,282	161,786	143,221	422,641	118,150	95,980	70,964	168,208	123,527	12,642	84,730
	1987	20,547	107,203	70,562	49,029	703	137,738	35,416	145,447	145,350	400,853	84,508	75,834	60,237	162,278	106 141	10,429	74,037
	1986	21,251	54,043	5,698	31,420	•	122,314	15,633	140,808	138,294	411,307	69,675	88,656	52,901	153,897	99,573	7,368	79,345
	1985	19,903	65,871	2,170	24,606		122,337	20,696	120,788	103,259	326,735	86,583	89,217	59,006	132,717	87,831	8,094	60,576
	1984	15,830	57,909	2,053	25,195		110,250	30,534	79,009	71,094	277,455	62,272	93,609	35,150	102,834	25,057	8,127	22,491
	Port	Sampit	Banjarmasin	Lember	Kupang	Dillī	Balikpapan	Samarinda	Bitung	Pantoloan	Uj. Pandang	Pare-Pare	Kendari	Ternate	Атроп	Sorong	Bíak	Јауарига
	Province	C. Kalimantan	S. Kalimantan	W.N.T	E.N.T	E. Timor	E. Kalimantan	I. Kalimantan	N. Sulawesi	C. Sulawesi	S. Sulawesi	S. Sulawesi	SE. Sulawesi	Maluku	Maluku	Irian Jaya	Irian Jaya	Irian Jaya
	No.	<u>ט</u> דיו	s s	3 m	4	يم دى	ы 9	7 E	8 N	ပ ၈	10 S	11 S	12 S	13 M	14 M	15 I	16 1	17 I

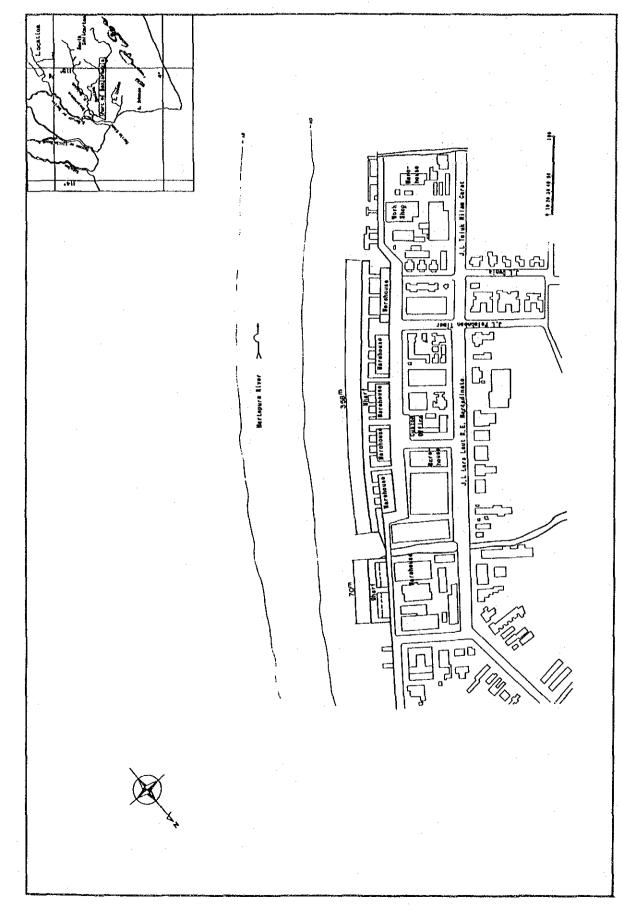
Source : PERSERO III, IV

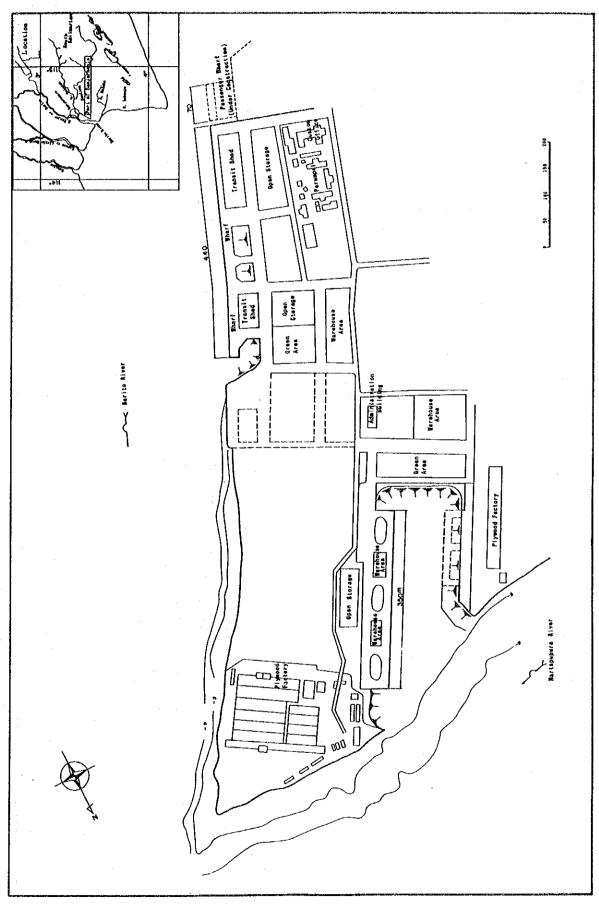


Appendix 5-3 Figures of Over Middle Class Ports Port of Sampit

-437-



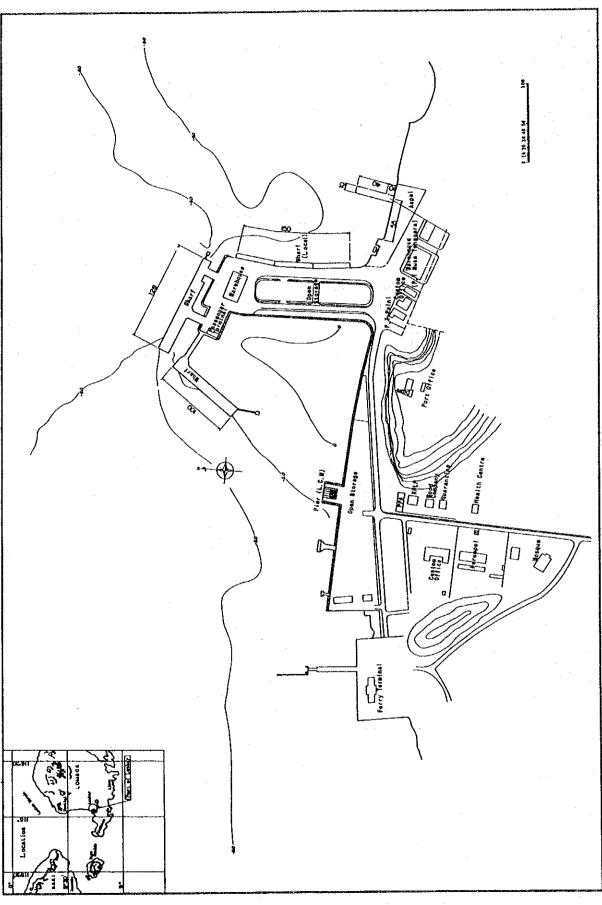




Port of Banjarmasin (Trisakti)

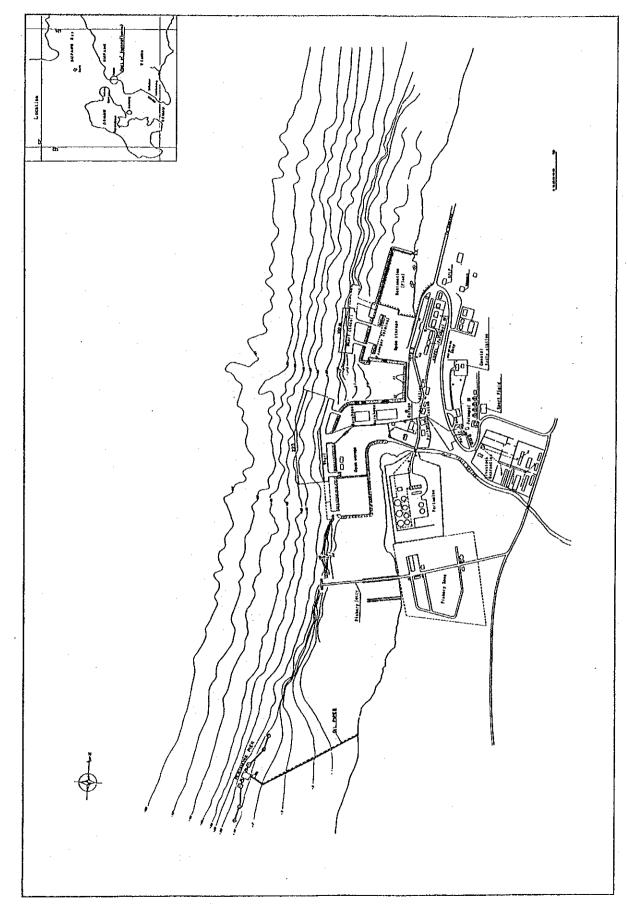
--439-

Port of Lembar

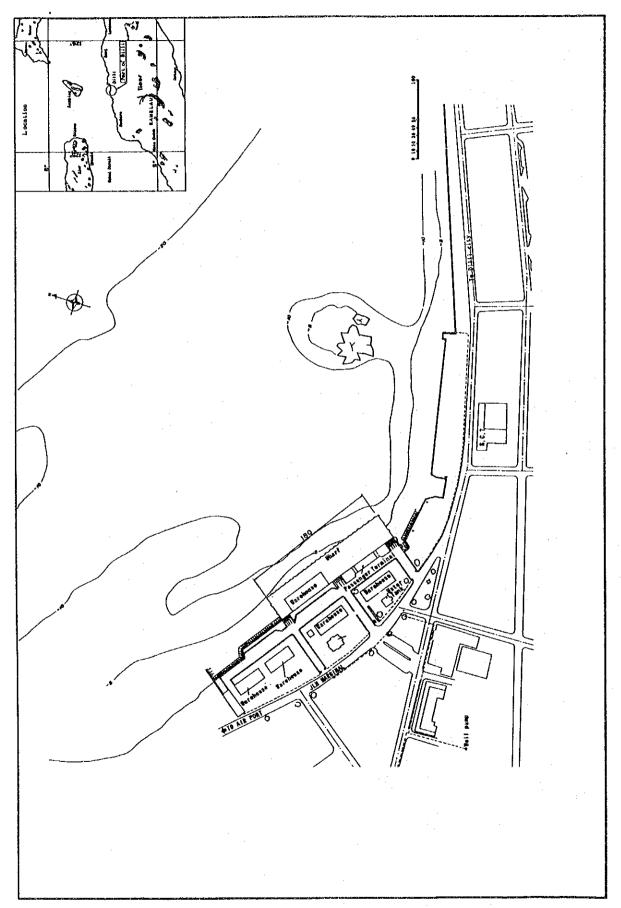


-440-

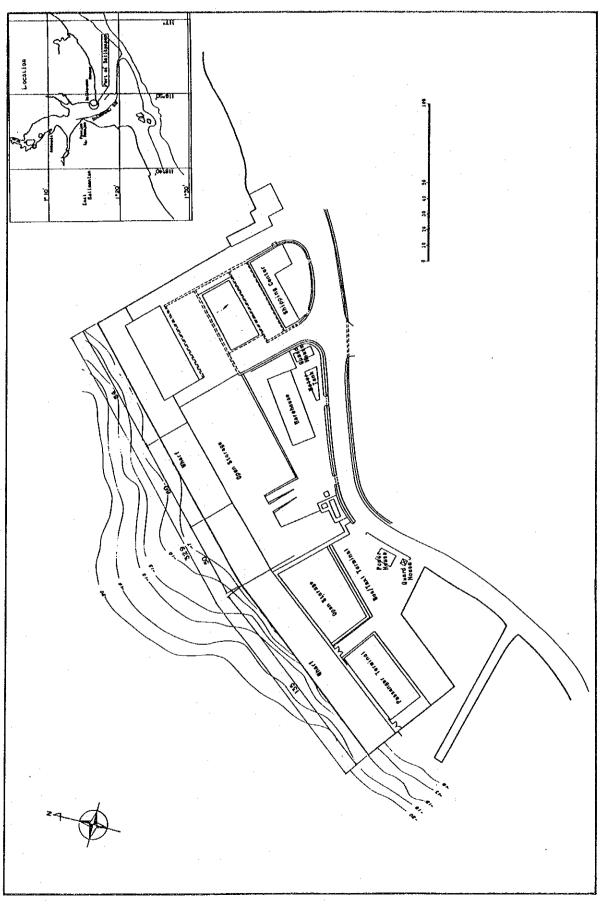
Port of Kupang



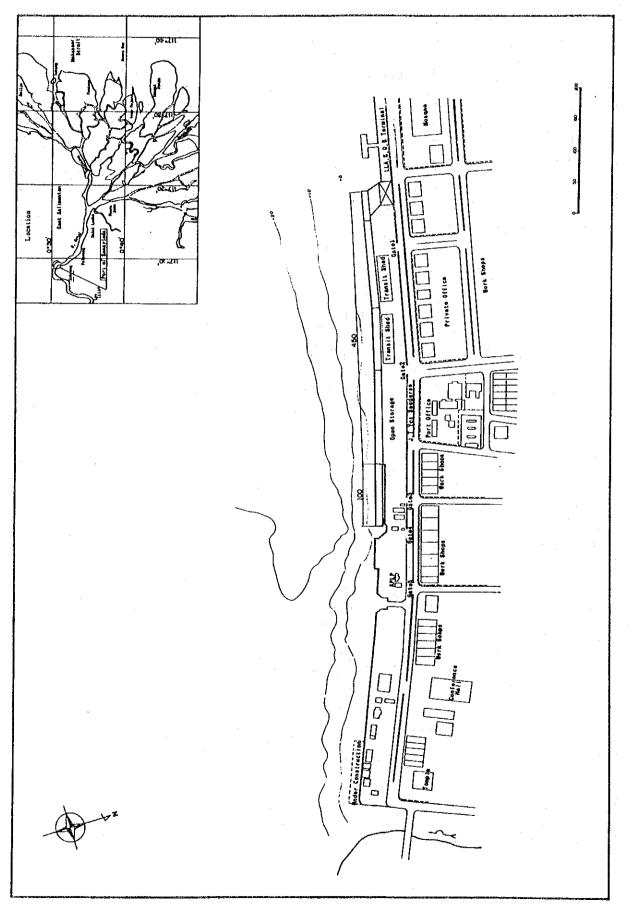




Port of Balikpanan

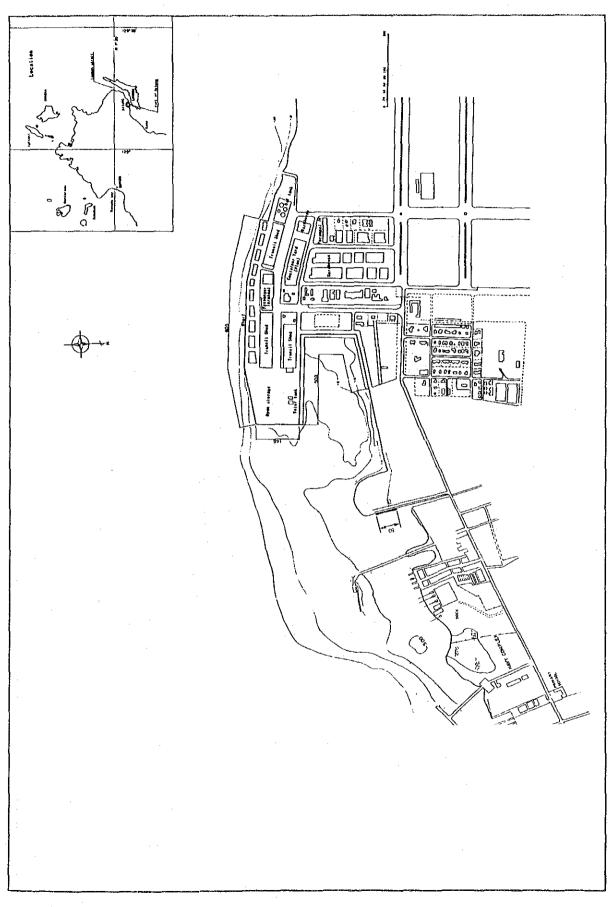


Port of Samarinda

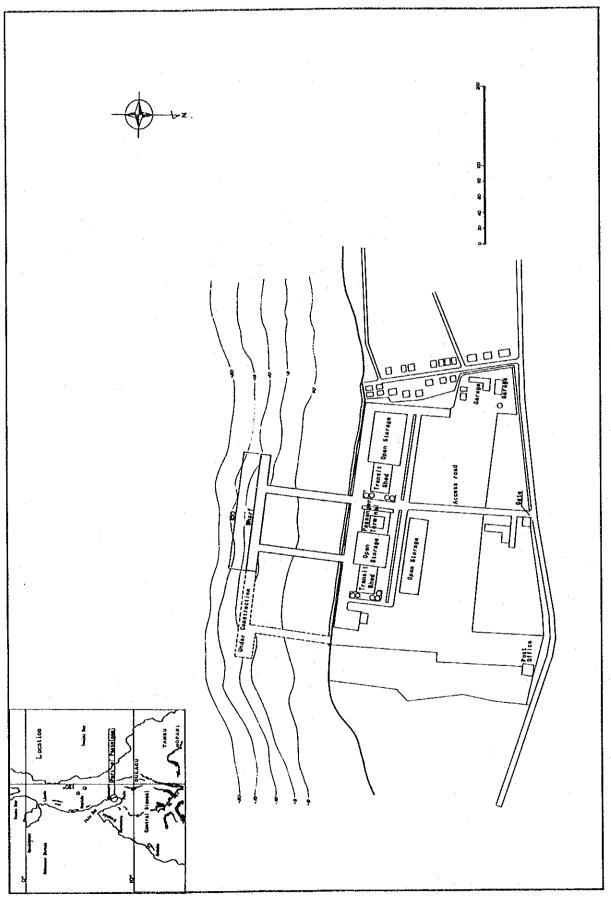


-444-

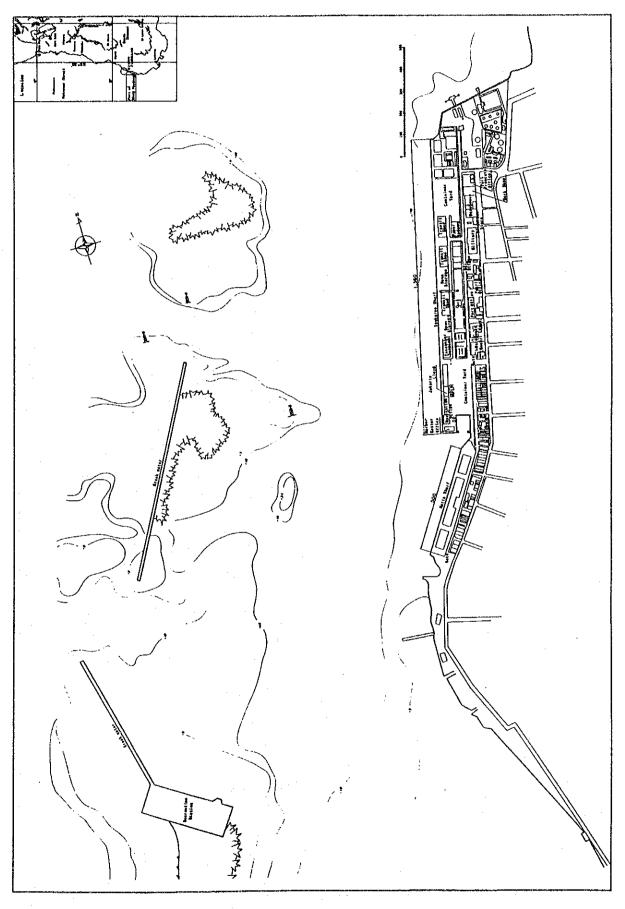
Port of Bitung



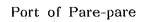
Port of Pantoloan

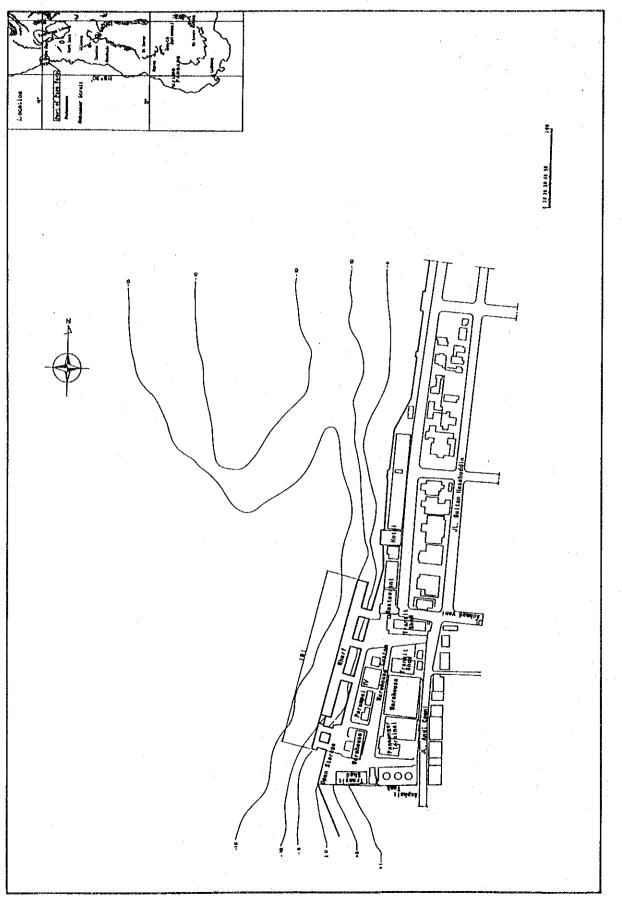


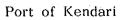
Port of Ujung Pandang

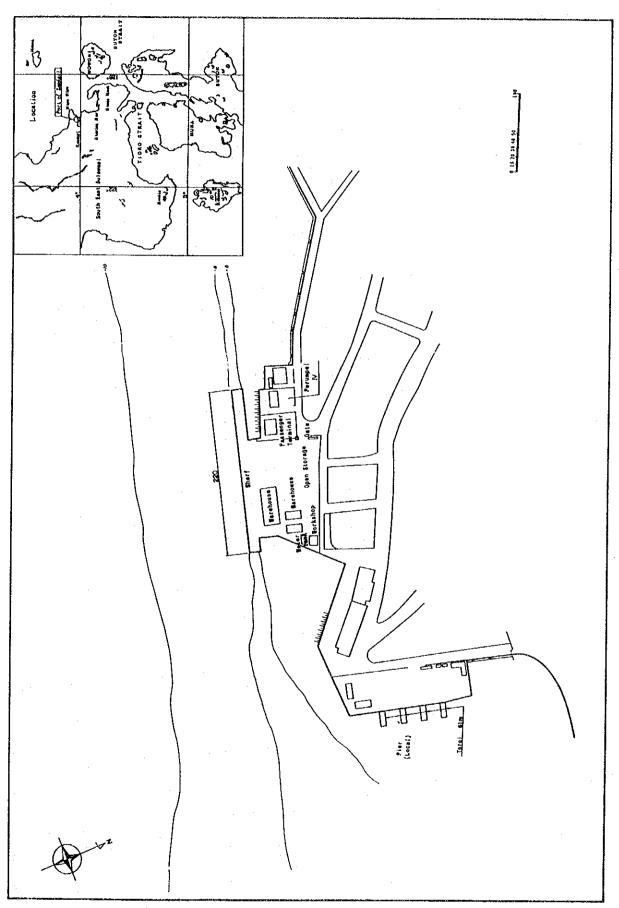


-447-



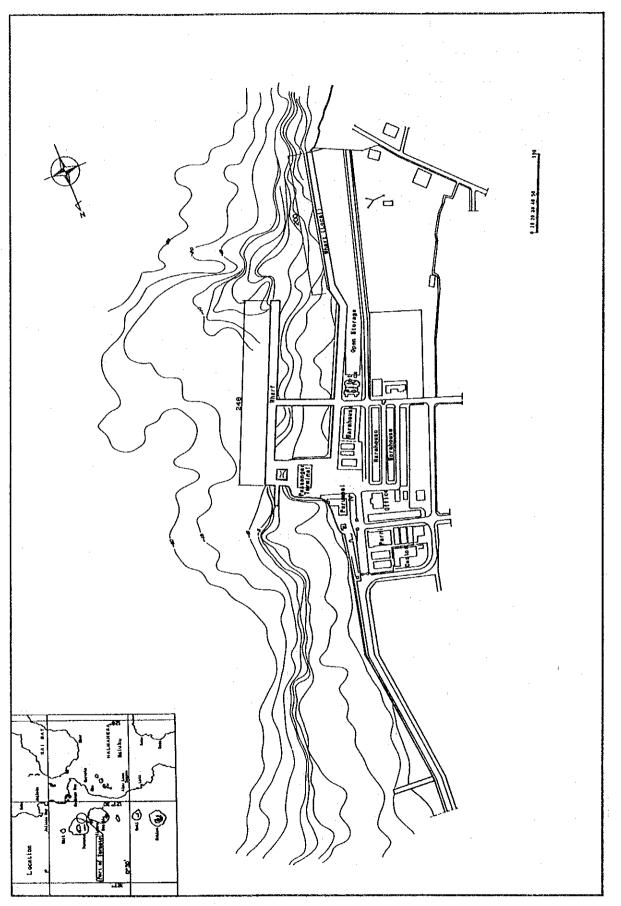


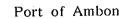


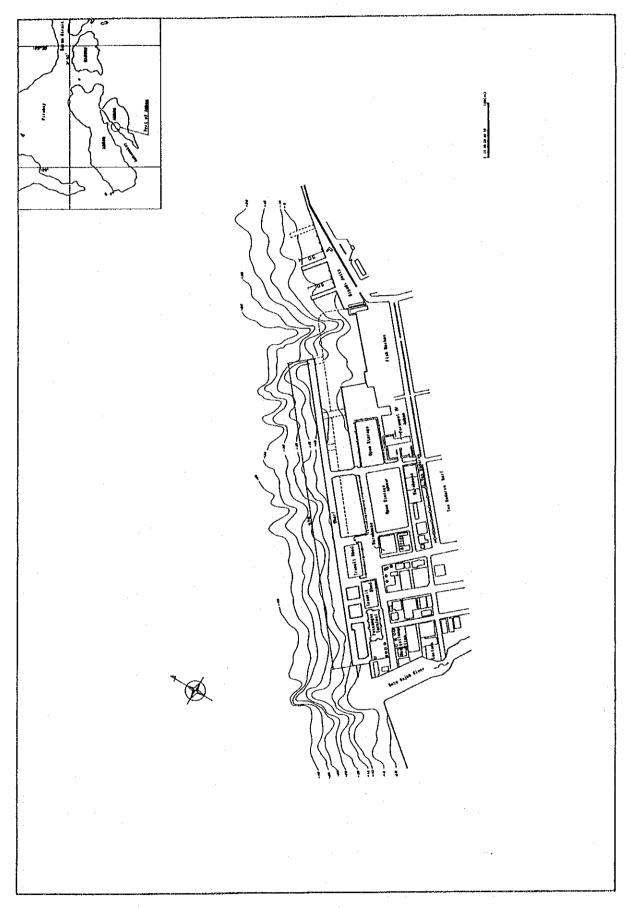


-449-

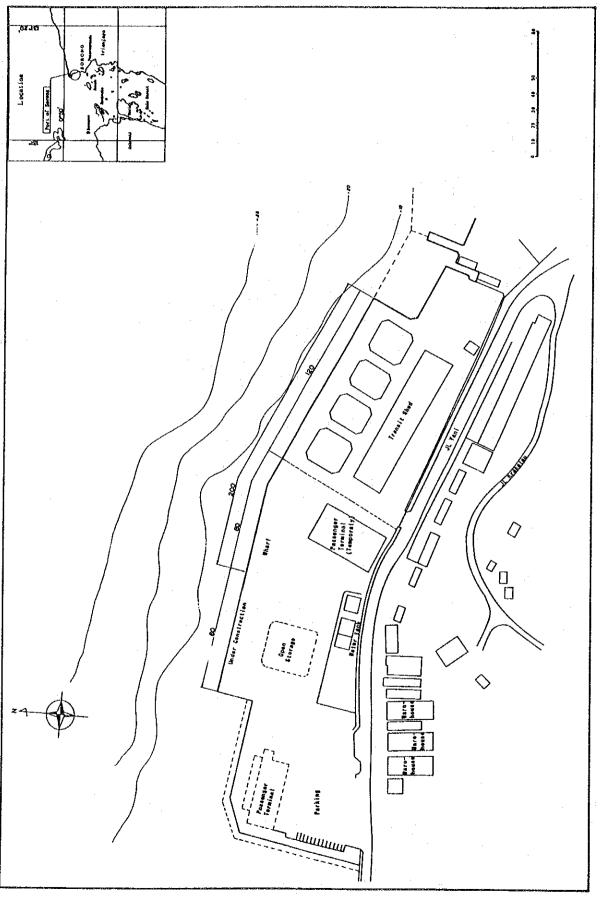
Port of Ternate





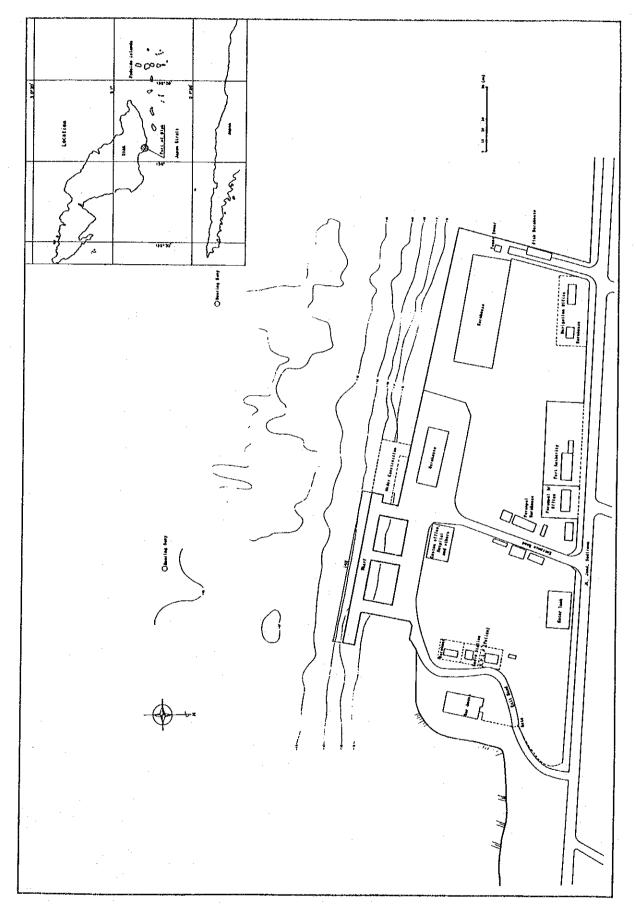


Port of Sorong



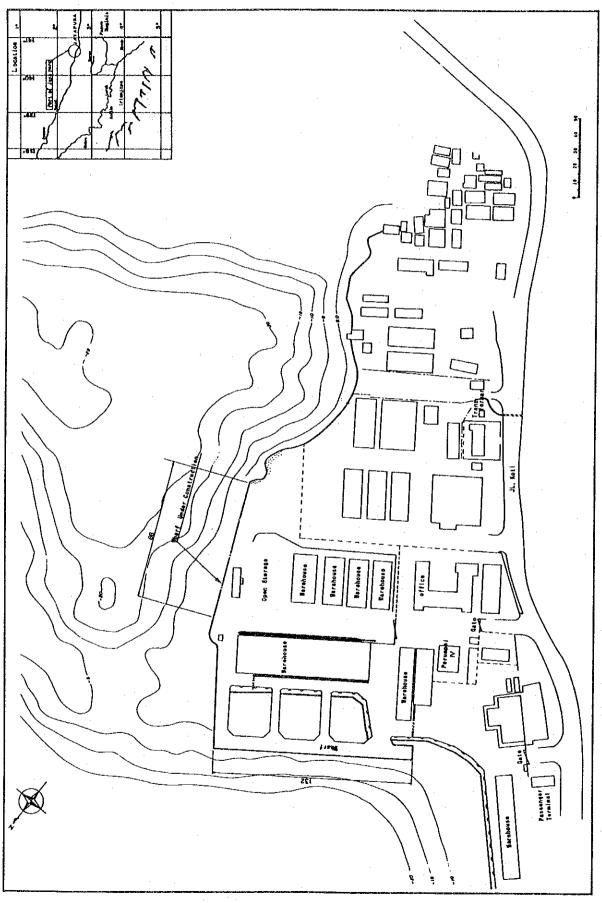
-452--

Port of Biak



---453---

Port of Jayapura



-454---

# Appendix 5-4 Initial Environmental Examination at Over Middle Class Ports

			۲ I	Port of Sampit]
Elements of Environmental Impact	Impact to Environment	L	Volume (	of Inpact
	ه. مورود وروی و بر	<u></u>	Snall	Mediun Large
1.Inpact by Construction work 1.1 Operation of Working vessels	1)Atmospheric Pollution		: 0	
and Construction machinery	2)Noise and Vibration		0	i
	3)Changes to Terrestrial Ecosysten	0		1
1.2 Dredging and Dunping soil	1)Water Pollution and Sediment		1	0
	Pollution (SS, Toxic substance)	·		i
}	2)Offensive odours		0	
	3)Decrease of Aquatic/Marine Fauna and Flora			0
1	: 4)Pollution of Marine products	·····		1
	5)Less value of Tourisn	0	- <u>†</u>	·····
	(Water color, Coral reef)			
1.3 Gathering soil	DChanges to Landforms	0		· · · · · · · · · · · · · · · · · · ·
	2)Changes to Ground water	0	1	. 1
	3)Disappearance of Terrestrial	.0	1	
1.4 Appearance of Vastes	Ecosystem 1)Water Pollution and Sediment		+	
Dunping Dredged soil	Pollution			, v
anpril breaken sorr	2)Inpact to Terrestrial Ecosystem		0	1
1.5 Employment	1) Influx of different cultures		0	
	: 2)Changes in Economic activity		0	
1.6 Congestion of Construction	1)Econonic loss (Traffic jan)	· [	0	
vehicles and vessels	2)Reduced value of Fishing grounds	1	0	1
2. Inpact by Existence of Port		+		<u>i                                     </u>
Facilities and Land		1	1	!
2.1 Existence of Land(including	· 1)Vater Pollution and Sediment	0	1	i !
Reclained Land)	Pollution	1	i	
	2)Coast erosion and deposition	0		!
· · · · · ·	3)Change in Tidal current		0	; 
	4)Decrease of Aquatic Habitats	0		
	for Aquatic Fauna and Flora 5)Decrease of Terrestrial Habitats	0		
·	for Terrestrial Vegetation and	ľ		1
]	Wildlife			! !
	6)Changes to Landscape		0	1
	7)Changes in Residential areas	0	1	
	8)Disappearance of Fishing grounds	0	<u>+</u>	ļ
2.2 Existence of Protective	1)Inpact to Water Quality and	0		
Facilities for Harbours	Sediment Quality		+	
	2)Coast erosion and deposition 3)Change in Tidal current	0	·	1
and the second	4)Decrease of Aquatic Habitats	o o		
•	for Aquatic Fauna and Flora		į	l I
	5)Changes to Landscape	0	<u> </u>	
2.3 Existence of Waterways	1)Change in Tidal current	0	. <u> </u>	
	2) Decrease of Aquatic Habitats	0		
2.4 Existence of Basins	for Aquatic Fauna and Flora	0		
LIT DAISCENCE OF DESINS	2)Decrease of Aquatic Habitats	0	<u>†</u>	
	for Aquatic Fauna and Flora			
:		L	<u> </u>	
3. Impact by Utilization of Water				
Facilities and Mooring Facilities 3.1 Operation of Vessels	1	<b> </b>		<u> </u>
J.L Uperation of Vessels	(1)Atmospheric Pollution	<b> </b>	0	
· · · ·	2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave		0	
	(4) Appearance of Wastes		1	0
	(including Dredging soil)	· ·	1	
	5)Hindrance to fishing operations		0	
			<u> </u>	
4. Inpact by Utilization of Cargo		1		1
Sorting Facilities and Storage Facilities				
4.1 Cargo handling and Utilization	1)Atnospheric Pollution		! 0	r
of Storage Facilities	2)Water Pollution and Sediment		1 0	1
<b>9</b>	Pollution			
	3)Noise level 4)Offensive odours		: 0	
· · ·	: 4)Offensive odours		0	!
	5)Changes of Aquatic Ecosystem		0	
	6) Appearance of Vastes		1 0 1	
	LAPULEOTICUP	ł	1	•
3. Inpact by Traffic			:1	1
5.1 Land Traffic	1)Atmospheric Pollution		0	*
	2)Noise and Vibration		0	
	3)Changes to Terrestrial Ecosysten	0	÷	· · · · · · · · · · · · · · · · ·
	4)Changes of Distributed Population		; • ,	۲
· ·	in Planning area 5)Traffic jans, accidents			
	6)Outflow of cultures	0		

### Result of Initial Environmental Examination (IEE)

-455-

Elements of Environmental Impact	Inpact to Environment		Volune	of Banja of Inpac	£
Greaches of challounghear inhace	· · · · · · · · · · · · · · · · · · ·	Nil	Snall	Medium	Larg
Inpact by Construction work	······································			1	1
1.1 Operation of Vorking vessels	1)Atnospheric Pollution	· ·	1	: 0	1
and Construction machinery	2)Noise and Vibration		1	: 0 .	;
and conset decion additions	3)Changes to Terrestrial Ecosystem		. 0	1	,
1.2 Dredging and Dumping soil	1)Vater Pollution and Sediment		1	:	0
1.2 Offedging and bunping sort	Pollution (SS, Toxic substance)		1	ł	1
	2)Offensive odours			0	:
	3)Decrease of Aquatic/Marine Fauna		;		1 0
	and Flora		1		1
	: 4)Pollution of Marine products		-i	: 0	i
	: 5)Less value of Tourism	0	1	÷	÷ –
		U	;		!
	: (Vater color, Coral reef)		÷		÷
1.3 Gathering soil	1)Changes to Landforms			0	
	2)Changes to Ground water		0	÷	
	3)Disappearance of Terrestrial		0	1	4
· · · · · · · · · · · · · · · · · · ·	Ecosysten				
1.4 Appearance of Wastes	1)Water Pollution and Sediment		1		0
Dunping Dredged soil	Pollution		<u>.</u>	·	
	· 2)Inpact to Terrestrial Ecosystem		<u>;</u> 0 .	1	1
1.5 Enployment	: 1) Influx of different cultures	L <u></u>	•	1 0	1
	(2)Changes in Economic activity	l	:	0	:
1.6 Congestion of Construction	1)Economic loss (Traffic jam)			1 0	1
vehicles and vessels	2)Reduced value of Fishing grounds	· ·	0	1	
TOUTOTOD AND TODOGID	i stronger taken of tronging Brounds		1	1	1
. Inpact by Existence of Port	· · · · · · · · · · · · · · · · · · ·			+	1
			1	· ·	į.
Facilities and Land	1)Sater Pollution and Sediment		1 0	+	
2.1 Existence of Land(including			1. ×	1	;
Reclained Land)	Pollution		<u></u>	<del>.</del>	- <u> </u>
	2)Coast erosion and deposition		0	+	. <del>!</del>
	(3)Change in Tidal current		0	<u> </u>	·
	4)Decrease of Aquatic Habitats		1 0		1
•	for Aquatic Fauna and Flora				+
	5)Decrease of Terrestrial Habitats		0		i
	for Terrestrial Vegetation and		1		1
	Vildlife	l			ļ
·	6)Changes to Landscape	1		i	0
	7)Changes in Residential areas		1	0	
	8)Disappearance of Fishing grounds		0	1	1
2.2 Existence of Protective	1) Ippact to Water Quality and	0		1	1
Facilities for Harbours	Sediment Quality		- <b>i</b>		
ractificies for naturals	2)Coast erosion and deposition	0	+	1	<u>†</u>
	3)Change in Tidal current	- <del>0</del>		1	
	4)Decrease of Aquatic Habitats	l õ		<u>+</u>	1
		ľ		· ·	1
· · · · ·	for Aquatic Fauna and Flora 5)Changes to Landscape	0	+		<del></del>
4 3 6 1 L	1 Denance in Tidal augment	· * -		1 0	+
2.3 Existence of Waterways	1)Change in Tidal current			1 0	
· · · ·	2)Decrease of Aquatic Habitats	1	1	l v	
	for Aquatic Fauna and Flora				
2.4 Existence of Basins	i 1)Change in Tidal current	0		1.	- <u>-</u>
	2)Decrease of Aquatic Habitats	1-	0.	1	
	for Aquatic Fauna and Flora	Į.	i		1
	1	L	<u> </u>	<u> </u>	÷
. Inpact by Utilization of Water	· · · · · · · · · · · · · · · · · · ·		1	i	1
Facilities and Mooring Facilitie	a	· · ·	1		<u> </u>
3.1 Operation of Vessels	(1)Atmospheric Pollution		1	0	1
	2)Water Pollution (Bilge water)	i	1	1	j o
	i 3)Coast erosion by vessel wave	í The second	i	0	1
	4)Appearance of Vastes	<b></b>	7	i	0
	(including Dredging soil)	1	1 .	1	1
	: 5)Hindrance to fishing operations	1	1 0		1
	synamotonice of aronang operations	1	1	1	1
. Inpact by Utilization of Cargo	<u>.</u>	<u> </u>	<del>.</del>	1	1
Sorting Facilities and Storage		1	1.5	1 .	1
		1	1	1	1
Facilities 4.1 Cargo handling and Utilization	i Hitrophonic Pollution	ł	1	1 0	
4.1 Gargo nangling and UCIIIZacion	1 2) Water Pollution and Cadinast	<u> </u>		1 0	<u>i</u>
of Storage Facilities	1 2)Water Pollution and Sediment	· ·	1		1
	Pollution			<u> </u>	
	3) Noise level	I			- <u>:</u>
· .	4)Offensive odours	<u> </u>	1	1	··}
	5)Changes of Aquatic Ecosystem	L	,i	, 0	- <b>i</b>
	6) Appearance of Wastes	I		0	: .
	i 7)Enployment	1.	1	; 0	!
	•	1	1	٠ 	
. Inpact by Traffic				.i	
5.1 Land Traffic	1)Atmospheric Pollution	1	1	0	
walle treater	2)Noise and Vibration	1		0	•
		t			
	Sichanges to errestrial trosverea		, .		
	3)Changes to Terrestrial Ecosystem	<u>}</u>	0	0	1
	4)Changes of Distributed Population	<u> </u>	1	0.	!
			1	0	

	Inpact to Environment	SIL	Volune C Snall	of Inpact Yediun	Laree
Inpact by Construction work					
1.1 Operation of Working vessels	1) Atoospheric Pollution		: 0	•	:
and Construction machinery	2)Noise and Vibration		, 0	1	
	3)Changes to Terrestrial Ecosystem	0			••••••••
1.2 Dredging and Dunping soil	1) ater Pollution and Sediment		!	0	<u>!</u>
the producting and partiting point	Pollution (SS, Toxic substance)			1	
•	2)Offensive odours		: 0	·	; •
	3)Decrease of Aquatic/Marine Fauna		1	0	1
	and Flora			·	; ·
	: 4)Pollution of Marine products		0	•	1
	5)Less value of Tourism		;	, 0	÷ .
	(Water color, Coral reef)		•	2	1
1.3 Gathering soil	DChanges to Landforms		0	+	
	· 2)Changes to Ground water	0			
	3)Disappearance of Terrestrial		. 0		
and the second second second second	Ecosysten			1	,
1.4 Appearance of Wastes	1) Vater Pollution and Sediment		•	0	
Dunping Dredged soil	Pollution		1	1	•
bullying breaked som	2)Inpact to Terrestrial Ecosystem		0		1
1.5 Employment	)Influx of different cultures		0	:	1
1.9 Fubiolucit	2)Changes in Econonic activity		0	÷	
1.8 Congestion of Construction	1)Econonic loss (Traffic jan)		0		:
vehicles and vessels	2)Reduced value of Fishing grounds		• 0	· · · ·	i
CHICLES AND VESSULS	Thorntoon Larde of Liourus Stonuds	ł	; ~	1	1
Innat by Existence of Pont	· · · · · · · · · · · · · · · · · · ·	[		<del></del> —	<u>.</u>
. Inpact by Existence of Port	1	ł	1 1	ł	l.
Facilities and Land	• 1) Water Pollution and Sediment		•	<u>.</u>	·
2.1 Existence of Land(including		o	1.1	!	1
Reclained Land)	Pollution	·			
	2)Coast erosion and deposition		0	÷	
	3)Change in Tidal current	<b> </b>	0	<u>+</u>	<u>.</u>
9. 1	4)Decrease of Aquatic Habitats		0	í	
	for Aquatic Fauna and Flora			<u> </u>	<u>.</u>
	S)Decrease of Terrestrial Habitats	0	i		j -
	for Terrestrial Vegetation and	Į	i	i i	Ļ
	Vildlife	L		<u> </u>	<u> </u>
	6)Changes to Landscape		0	<u> </u>	<u> </u>
	7)Changes in Residential areas	0		<u>!</u>	<u> </u>
	8)Disappearance of Fishing grounds		0	!	<u> </u>
2.2 Existence of Protective	1)Inpact to Water Quality and	0	1	i	1
Facilities for Harbours	Sediment Quality			<u> </u>	I
	2)Coast erosion and deposition	0	1	i.	1
	3)Change in Tidal current	0	1		!
	4)Decrease of Aquatic Habitats	0	1	1 .	
	for Aquatic Fauna and Flora		\$ 7	! _	
	5)Changes to Landscape	0			i
2.3 Existence of Waterways	5)Changes to Landscape []Change in Tidal current	0	1	[	L
· · · · · · · · · · · · · ·	2)Decrease of Aquatic Habitats	0	1	Ī	i –
	for Aquatic Fauna and Flora		1	1	1
A 1	1)Change in Tidal current	0	3	!	1
7.4 Existence of Basias		0			
2.4 Existence of Basins	2)Decrease of Aquatic Habitats			1	!
2.4 Existence of Basins	2)Decrease of Aquatic Habitats			1	1
2.4 Existence of Basins	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora				1
ł	2)Decrease of Aquatic Habitats				 
<ol> <li>Impact by Utilization of Water</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora				 
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora				 
<ol> <li>Impact by Utilization of Water</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora		0		
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora (1)Atnospheric Pollution (2)Water Pollution (Bilge water)			0	
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora i) i)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave			!	
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atmospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes				
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil)		0	!	
<ol> <li>Impact by Utilization of Water</li> <li>Facilities and Mooring Facilitie</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atmospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes			!	
3. Inpact by Utilization of Water Facilities and Mooring Facilitie 3.1 Operation of Vessels	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil)		0	!	
<ol> <li>Impact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil)		0	!	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Etilization of Cargo Sorting Facilities and Storage</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil)		0	!	
<ol> <li>Impact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3-1 Operation of Vessels</li> <li>Impact by Etilization of Cargo Sorting Facilities and Storage Facilities</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations		0	!	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 5)Windrance to fishing operations		0	!	
<ol> <li>Impact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3-1 Operation of Vessels</li> <li>Impact by Etilization of Cargo Sorting Facilities and Storage Facilities</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment		0	!	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution		0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level		0 0 0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 5)Windrance to fishing operations 1) 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours		0 0 0 0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 5)Windrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Windrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>3.1 Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Windrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> <li>Inpact by Traffic</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 3)Hindrance to fishing operations 2)Water Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> <li>Inpact by Traffic</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 3)Hindrance to fishing operations 2)Water Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment			0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> <li>Inpact by Traffic</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 2)Water Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 3)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> <li>Inpact by Traffic</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 1) 3)Hindrance to fishing operations 2)Water Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 3)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment 1)Atnospheric Pollution 2)Noise and Vibration		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	
<ol> <li>Inpact by Utilization of Water Facilities and Mooring Facilitie</li> <li>Operation of Vessels</li> <li>Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities</li> <li>Cargo handling and Utilization of Storage Facilities</li> <li>Inpact by Traffic</li> </ol>	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes (including Dredging soil) 3)Hindrance to fishing operations 2)Water Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 3)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten			0	

ţ

Elements of Environmental Impact	Inpact to Environment		Yolume (	of Inpac	ŧ
	1	<u> </u>		Yediun	Lar
Inpact by Construction work	1))torestants D.D.t.		<u></u>	;	!
1.1 Operation of Yorking vessels	1)Atnospheric Pollution		. 0		;
and Construction machinery	2) Noise and Vibration	·	0	i	<u>l.</u>
1.2.0	3)Changes to Terrestrial Ecosystem	<u> </u>	÷	i 	· · · · · · · · · · · · · · · · · · ·
1.2 Dredging and Dumping soil	1)Water Pollution and Sediment	0	1 .	1	1
	Pollution (SS, Toxic substance)	· · · ·	· · · · · · · · · · · · · · · · · · ·		<u> </u>
	2)Offensive odours		+	· · · · · · ·	<u>.</u>
	3)Decrease of Aquatic/Marine Fauna	0.	i i		i .
· · · · · · · · · · · · · · · · · · ·	and Flora		!	i	<u>i</u>
	4)Pollution of Marine products		!	!	1
	5)Less value of Tourisn	0		1	1
1.2 0-11	: (Water color, Coral reef)		i		1
1.3 Gathering soil	1)Changes to Landforms		÷	0	
	2)Changes to Ground water		0	÷	:
	3)Disappearance of Terrestrial		•	1	
1 1 1	Ecosysten		<u> </u>	i	İ
1.4 Appearance of Vastes	1)Water Pollution and Sediment	1	¦ 0	i .	ł.
Dunping Dredged soil	Pollution		·		<u>i</u>
<u></u>	2)Inpact to Terrestrial Ecosystem	.	: 0	L	<u> </u>
1.5 Engloyment	il)Influx of different cultures		: 0	1	Į
	12)Changes in Economic activity		1 0	1	1
1.8 Congestion of Construction	1)Economic loss (Traffic jam)		0	1	1
vehicles and vessels	2)Reduced value of Fishing grounds		0		i
			1	L	: 
<ul> <li>Inpact by Existence of Port</li> </ul>	1		1	1	
Facilities and Land			1	1	1
2.1 Existence of Land(including	1)Water Pollution and Sediment	1	: 0		i
Reclained Land)	Pollution	1	}	•	ļ
	(2)Coast erosion and deposition		0	1	
	3)Change in Tidal current	1	1.	0	
	4)Decrease of Aquatic Habitats		0	i	
	for Aquatic Fauna and Flora		-		
	; 5)Decrease of Terrestrial Habitats	· · ·	0	+ . }	1
	for Terrestrial Vegetation and	1	ľ		1
	Wildlife		. ·		1
	6)Changes to Landscape		-		
	7)Changes in Residential areas	0		· · · · ·	
	8)Disappearance of Fishing grounds				
2.2 Existence of Protective	1) Inpact to Water Quality and	0	· · · ·		
Facilities for Harbours	Sodiment Buslity	Ö	1.1		
ACTITUTES INT REFORMES	Sedinent Quality	<u>↓</u>	· · · -	· · ·	
	2)Coast erosion and deposition	ļ <u></u>	Į		
	3)Change in Tidal current	0	┝──┤		
	4)Decrease of Aquatic Habitats	0	i l		
· · ·	for Aquatic Fauna and Flora	1	ļ		
2 3 Fristance of Haber	5)Changes to Landscape	0	¦ I		<u> </u>
2.3 Existence of Waterways	1)Change in Tidal current	<u> </u>	<u> </u>		
	2)Decrease of Aquatic Habitats	0			
2 4 6	for Aquatic Fauna and Flora	L	<u>.                                    </u>		
2.4 Existence of Basins	1)Change in Tidal current	0	<u> </u>		
	_2)Decrease of Aquatic Habitats	0	. 7		
	for Aquatic Fauna and Flora		ļ I		
		· ·			
<ul> <li>Inpact by Utilization of Water</li> </ul>			i		
Facilities and Mooring Facilities 3.1 Operation of Vessels	<u>i</u>				
3.1 Uperation of Vessels		1	1 0 1		
	2) Water Pollution (Bilge water)	1	1	0	
	: 3)Coast erosion by vessel wave	1	0 1		
	4) Appearance of Wastes	[	0	i	
	(including Dredging soil)		!	ļ	
	5)Hindrance to fishing operations	- · · · · ·	0		
Inpact by Utilization of Careo	1				
Impact by Utilization of Cargo Sorting Facilities and Storage			i i		
Sorting Facilities and Storage				ļ	
Sorting Facilities and Storage	1)Atmospheric Pollution		0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization			0		
Sorting Facilities and Storage	2)Water Pollution and Sediment		0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution		0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sedinent Pollution 3)Noise level		0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours		0 0 0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten		0 0 0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sedinent Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes		0   0   0   0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Exployment		0 0 0		
Sorting Facilities and Storage Facilities I-I Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sedinent Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes		0   0   0   0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment		0   0   0   0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution		0   0   0   0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes 7)Epployment 1)Atnospheric Pollution 2)Noise and Vibration		0 0 0 0 0		
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution	0			
Facilities 1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten 4)Changes of Distributed Population				
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten 4)Changes of Distributed Population				
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten				

.

• .

•

Elements of Environmental Impact	Inpact to Environment	[	Volune	ort of D. of Inpact	
GTENGUES OF CHAILOUNGUENT TUBGEC	i information in the summer	Nil	Snall	Mediun	Large
Inpact by Construction work					·
1.1 Operation of Yorking vessels	: 1)Atnospheric Pollution		: 0	1	:
and Construction machinery	2)Noise and Vibration		1 0		1
and conseraction machinery	3)Changes to Terrestrial Ecosystem	0	1	1	-
1.0.0 Joint Duration with	1) Water Pollution and Sediment	0	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	÷
1.2 Dredging and Dumping soil		ľ	1	1	:
	Pollution (SS, Toxic substance)	I	. <u> </u>	÷	÷
	2)Offensive odours	0	÷		<u>.                                    </u>
	3)Decrease of Aquatic/Marine Fauna	0	;	:	<b>!</b>
	and Flora		<u> </u>	1	
	4)Pollution of Marine products	0		!	l
	: 5)Less value of Tourism	0	-	1	1 .
	<pre>(Water color, Coral reef)</pre>	i	ł		1
1.3 Gathering soil	1)Changes to Landforms	0	1	1	
1.0 Gathering Sort	2)Changes to Ground water	0	:		
	3)Disappearance of Terrestrial	0	;	•	
	Ecosysten	ľ	1	1	ţ.
	1) Vater Pollution and Sediment				
1.4 Appearance of Mastes		•		1	1
Dumping Dredged soil	Pollution	ļ		ļ	<u>!</u>
	: 2)Inpact to Terrestrial Ecosystem	0		<u> </u>	!
1.5 Employment	: [] [nflux of different cultures	0	<u> </u>	1	<u>.</u>
• •	2)Changes in Economic activity	0	1	1	1
1.6 Congestion of Construction	: 1)Economic loss (Traffic jam)	0	1		1
vehicles and vessels	2)Reduced value of Fishing grounds	0	1	1	:
CHICLUS AND POSSELS	attended to the stand of a did	1	1	1	1
. Inpact by Existence of Port	······	1		:	
	1	L .	:		{
Facilities and Land	1 11// > 0.11	<u> </u>			
2.1 Existence of Land(including	1)Water Pollution and Sediment	0	I.	1	i.
Reclained Land)	Pollution	<u> </u>			
	2)Coast erosion and deposition	0	<u>.</u>	<u>.</u>	<u> </u>
	3)Change in Tidal current	L	: 0	i	
	4)Decrease of Aquatic Habitats	0	1	ł	1
	for Aquatic Fauna and Flora		1		1
	5)Decrease of Terrestrial Habitats	0	1	1	
	for Terrestrial Vegetation and		1 .	ł	1 ·
	Wildlife	1	i i		1
	6)Changes to Landscape		0		i
	7)Changes in Residential areas		<u>+</u>		
	And anges in Residencial areas				1
	8)Disappearance of Fishing grounds	<u> </u>	<u>.</u>		+
2.2 Existence of Protective	1)Inpact to Water Quality and	0	1		1
Facilities for Harbours	Sediment Quality	I	· · · · · · · · · · · · · · · · · · ·		<u>-</u>
	2)Coast erosion and deposition	0	ļ	-+	<u> </u>
	3)Change in Tidal current	0	<u> </u>		
	4)Decrease of Aquatic Habitats	0		ł	1
	for Aquatic Fauna and Flora			1	
	5)Changes to Landscape	0	1	ì	1
2.3 Existence of Waterways	1)Change in Tidal current	0	1	ì	1
ere aviatelles of waterways	2)Decrease of Aquatic Habitats	.0	Ì	1	1
	for Aquatic Fauna and Flora		1		1
2.4 Existence of Basins	1)Change in Tidal current	0	+	<del>i –</del>	T
2.4 CAISLENCE OF DASINS	2)Decrease of Aquatic Habitats	1.0.	1.	1	1
		ľ	1	ţ.	1
and the second	for Aquatic Fauna and Flora		1 .	1	1
		ļ			÷
. Inpact by Utilization of Water		1	1	ļ	1
Facilities and Mooring Facilitie	s	ļ		+	!
3.1 Operation of Vessels	(1)Atmospheric Pollution	L	0	Į	!
	2)Water Pollution (Bilge water)		0	1	:
	3)Coast erosion by vessel wave	1	0	1	1
·	4) Appearance of Vastes	1	0	!	1
	(including Dredging soil)	l	[	1	1
	5)Hindrance to fishing operations	0	i	1.	1
		1	1		ł
Innak by likilinghing of Come		+	<del>.</del>		;
. Inpact by litilization of Cargo		ł	1	1	1
Sorting Facilities and Storage		ł	!	1	1
Facilities			+		Ļ
4.1 Cargo handling and Utilization	LIACROSPRETIC POLLUCION	ļ	<u>  0</u>	+	
of Storage Facilities	2)Water Pollution and Sediment	1	0		1
	Pollution	ļ	<u>.</u>	i	
	3)Noise level	1	0		:
	4)Offensive odours		0	1	
	; 5)Changes of Aquatic Ecosysten	1	0		1
	6) Appearance of Wastes	<b></b>	1 0	;	*····
		J	, 0	•	1
	7)Enployment	1	v		
	· · · · · · · · · · · · · · · · · · ·	}	<u> -</u>		÷
. Inpact by Traffic		·		÷	:
	1)Atnospheric Pollution	ļ	: 0		· · · · · · · · · · · · · · · · · · ·
J.I Land Traitic	· 2) Noise and Vibration	· · · · ·	· 0	÷	
S.I Land Traffic	CANTING DEG TETRETON				
J-I Land Traffic	3)Changes to Terrestrial Ecosysten	. 0	!		
5.] Land Traffic	3)Changes to Terrestrial Ecosysten	0	;		÷
5.1 Land Iraffic	3)Changes to Terrestrial Ecosystem (4)Changes of Distributed Population		<u>.</u>		
5.1 Land Iraffic	3)Changes to Terrestrial Ecosysten		. 0		;

				t of Ball of Inpact	
Elements of Environmental Impact	Inpact to Environment	Nil		Hedium	
Inpact by Construction work				<u>.</u>	
1.1 Operation of Yorking vessels	1)Atnospheric Pollution		<u> </u>	0	• * • • •
and Construction machinery	2) Noise and Vibration		<u>.</u>	0	<u></u>
	3) Changes to Terrestrial Ecosystem		0	<u>.</u>	: 
1.2 Dredging and Dunping soil	1) Vater Pollution and Sediment	0		1	
	Pollution (SS, Toxic substance)		· ·	í	i
· · · · · · · · · · · · · · · · · · ·	2)Offensive odours	0			<u> </u>
	3)Decrease of Aquatic/Marine Fauna	0	1	ł	
	and Flora				!
	4)Pollution of Marine products	0	•	`	!
	alless value of Tourisa	0	!	:	1
	(Water color, Coral reef)		:	1	<u>.</u>
.3 Gathering soil	1)Changes to Landforms			. 0	:
to deduting soll	2)Changes to Ground water		0	•	2
	3)Disappearance of Terrestrial		; 0	1	1
and the second	Ecosysten			•	1.1
.4 Appearance of Wastes	1)Water Pollution and Sedigent			j O	• •
	Pollution				1.11
Dunping Dredged soil	2) Inpact to Terrestrial Ecosystem		: 0	1	1
	1) Influx of different cultures		0	!	
.5 Employment	2)Changes in Econonic activity			0.	
Contraction of Contraction	I)Econonic loss (Traffic Jan)			! 0	·!
1.6 Congestion of Construction	2)Reduced value of Fishing grounds	· · ·	; 0	1	1
vehicles and vessels	CIRCUCCO VALUE OF FISHING GROUNDS	1	1		1
	· · · · · · · · · · · · · · · · · · ·	<u> </u>		• <del>!</del> • • • • • • • • • • • • • • • • • • •	·
. Inpact by Existence of Port	t ·	t ·	1	1	:
Facilities and Land		<u> </u>	0	- <u>+</u>	
2.1 Existence of Land(including	1)Water Pollution and Sediment	· ·		!	i
Reclained Land)	Pollution	ł	· ·	: 0	+
	2)Coast erosion and deposition	<b>-</b>		; 0 ; 0	÷
	3)Change in Tidal current			<u>. v</u>	<u>+</u>
	4)Decrease of Aquatic Habitats		0	:	i
	for Aquatic Fauna and Flora	<b> </b>	<u> </u>	<del></del>	
	5)Decrease of Terrestrial Habitats	1	0	1	1
	for Terrestrial Vegetation and		1		1
	Wildlife	Į		<u> </u>	ļ
1	6)Changes to Landscape 7)Changes in Residential areas	ļ		+	10
	7)Changes in Residential areas		<u> </u>	<u> </u>	<u> </u>
	8) Disappearance of Fishing grounds		1 0	<u> </u>	
2.2 Existence of Protective	1) Inpact to Water Quality and	0.	1		ì
Facilities for Harbours	Sediment Quality	1	1		
	2)Coast erosion and deposition	0	* · · · · · · · · · · · · · · · · · · ·	.i	+
	3)Change in Tidal current	0	_ <u></u>	<u> </u>	
•	4)Decrease of Aquatic Habitats	0			-
	for Aquatic Fauna and Flora		i	<u> </u>	· · · · ·
	5)Changes to Landscape	0	<u> </u>		<u> </u>
2.3 Existence of Waterways	1)Change in Tidal current	l	1.0	_ <u></u>	1
· · · · · · · · · · · · · · · · · · ·	2)Decrease of Aquatic Habitats	1 .	0		1
	for Aquatic Fauna and Flora	L		<u> </u>	
2.4 Existence of Basins	11)Change in Tidal current	0		1	<u> </u>
•	2)Decrease of Aquatic Habitats		0	1 -	1
	for Aquatic Fauna and Flora	1	-	}	ļ
-	· · · · · · · · · · · · · · · · · · ·		1	<u> </u>	4
. Inpact by Utilization of Vater	i :	}			1
Facilities and Mooring Facilitie	si tuti tu		1	1	.i
3.1 Operation of Vessels	1)Atnospheric Pollution	L	<u>.</u>	1 0	1
,	2)Water Pollution (Bilge water)		1	1	0
	: 3)Coast erosion by vessel wave		;	; 0	
	4) Appearance of Wastes	T	1	1	0
	(including Dredging soil)	L		i	1
	S)Hindrance to fishing operations	1	0	1	1
1				1	1
. Inpact by Utilization of Cargo		1	•		1
Sorting Facilities and Storage				i ·	
Facilities		i -	1	<u> </u>	<u> </u>
4.1 Cargo handling and Utilization	1)Atmospheric Pollution		!	: 0	· · · · · · · · · · · · · · · · · · ·
of Storage Facilities	2)Water Pollution and Sediment		i	0	
AV AAAFODO LAATTATATA	Pollution	1		1	:
	3)Noise level		0		
				0	1
	4)Uffensive odours	1		: 0	
	4)Offensive odours 5)Changes of Aquatic Ecosystem	1	· · ·		
	5)Changes of Aquatic Ecosystem			, 0	1
	5)Changes of Aquatic Ecosystem 6)Appearance of Mastes				
	5)Changes of Aquatic Ecosystem			. 0	
Theorem for the file	5)Changes of Aquatic Ecosystem 6)Appearance of Mastes			. 0	<u> </u>
	5)Changes of Aquatic Ecosystem B)Appearance of Vastes 7)Employment			. 0	
5. Inpact by Traffic 5.1 Land Traffic	5)Changes of Aquatic Ecosysten B)Appearance of Vastes 7)Employment 1)Atmospheric Pollution			0	
	5)Changes of Aquatic Ecosystem B)Appearance of Vastes 7)Enployment 1)Atmosphoric Pollution Z)Noise and Vibration			0	
	5)Changes of Aquatic Ecosysten 6)Appearance of Vastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten			, 0 , 0 , 0 , 0 , 0	<u> </u>
	5)Changes of Aquatic Ecosysten 6)Appearance of Vastes 7)Employment 1)Atmosphoric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten 4)Changes of Distributed Population		0	0	<u> </u>
	5)Changes of Aquatic Ecosysten 6)Appearance of Vastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten			, 0 , 0 , 0 , 0 , 0	

-460-

			[ Por	t of Sar	arinda
Elements of Environmental Impact	. Inpact to Environment	- Nil	Snall	of Inpac	
Lapact by Construction work	<u> </u>		1		;
L.Inpact by Construction work L.I Operation of Working vessels	1)Atnospheric Pollution			0	:
and Construction machinery	2)Noise and Vibration	1	1	: 0	1
and denserverien inservices	3)Changes to Terrestrial Ecosystem		i o	1	;
1.2 Dredging and Duoping soil	1) Sater Pollution and Sedigent			;	1 0
1.2 Diedking and odubing soli	Pollution (SS, Toxic substance)		1	1	ł
			. 0	- <u>+</u>	
	2)Offensive odours	ļ		·	<u> </u>
	3)Decrease of Aquatic/Marine Fauna	1	1	1	; O
	and Flora	· · ·		<u>.</u>	<u> </u>
	4)Pollution of Marine products	ļ	0	<u>.</u>	<u>!</u>
	5)Less value of Tourism	0	Į.	1	ļ
	(%ater color, Coral reef)	<u></u>	<u> </u>	<u> </u>	
1.3 Gathering soil	1)Changes to Landforns	0	;	1	!
	2)Changes to Ground water	0	:	:	:
	3)Disappearance of Terrestrial	0	ł	1	1
	Ecosystem		ł .	1	;
1.4 Appearance of Wastes	1)Water Pollution and Sediment		1	1	1 0
Dunping Dredged soil	Pollution		1	ł	
builting bredged sorr	2)Inpact to Terrestrial Ecosystem	h	! 0	1	1
1 5 Per Lawrence	1)Influx of different cultures		1 0	1	
1.5 Enployment	2)Changes in Econonic activity	+	<u>+-~</u>	1 0	<u> </u>
1000	1)Econonic loss (Traffic jan)	<b>}_</b> ~~~~~~	·	1 0	
1.6 Congestion of Construction				1 · · · · ·	1
vchicles and vessels	2)Reduced value of Fishing grounds	1	i °	•	1
	<u> </u>	<u> </u>	-į	÷	
2. Inpact by Existence of Port	<b>ì</b>	- I	ļ.	1	1
Facilities and Land		<b>_</b>			
2.1 Existence of Land(including	1)Vater Pollution and Sediment	1	0	}	ł
Reclained Land)	Pollution		Í	1	1
-	2)Coast erosion and deposition	L	1 0	ţ	1
	3)Change in Tidal current	1	1 0	;	1
	4)Decrease of Aquatic Habitats	1	1 0	1	
	for Aquatic Fauna and Flora		1	Í	1
	5)Decrease of Terrestrial Habitats	t	0	1	1
· · · · · · · · · · · · · · · · · · ·	for Terrestrial Vegetation and	1	ľ	į –	ļ.
			1		1
	Vildlife	Į		<u></u>	+
	6)Changes to Landscape	· · ·	1	<u> </u>	<u></u>
A second s	7)Changes in Residential areas			0	
	8)Disappearance of Fishing grounds	Į	1 0	[	
2.2 Existence of Protective	1)Inpact to Water Quality and	0		1. ·	1
Facilities for Harbours	Sediment Quality			L	1
	2)Coast erosion and deposition	0	1 ·		1
•	3)Change in Tidal current	0			
	4)Decrease of Aquatic Habitats	0			
	for Aquatic Fauna and Flora	Į			
· · · · · · · · · · · · · · · · · · ·	5)Changes to Landscape 1)Change in Tidal current	0	1		1
2.3 Existence of Waterways	1)Change in Tidal current		0	1	1
	2)Decrease of Aquatic Habitats	1	0	1	1
	for Aquatic Fauna and Flora	1	1	1	1
2.4 Existence of Basins	1)Change in Tidal current	¦	1 0	1	
2.4 DAIStende of Dasins	2)Decrease of Aquatic Habitats	1	0	†	-1
	for Aquatic Fauna and Flora			- · ·	
: *	TAL BARDATE LOUIS SIG LINES	I	1		Į
I Towned by Dellinghing of Veb	· · · · · · · · · · · · · · · · · · ·	<u> </u>	;	· · · · · · · · · · · · · · · · · · ·	<del></del>
3. Inpact by Utilization of Water		I .	1	1 · ·	1
Facilities and Mooring Facilitie	1 1146			<u> </u>	·
3.1 Operation of Vessels	1)Atnospheric Pollution	<b></b>	. <u> </u>	1	+
	2)Water Pollution (Bilge water)	[ ]	<u> </u>	<u>ļ</u>	: 0
	3)Coast erosion by vessel wave	<b> </b>	!	1 0	+
	4) Appearance of Wastes	I İ	i	1	0
	(including Dredging soil)	1		<u>i</u>	<u> </u>
	5)Hindrance to fishing operations	1	0	1	1
		L	<u> </u>	L	1
. Inpact by Utilization of Cargo		[	1	1	-
Sorting facilities and Storage	ļ		i	1	i
Facilities	] ·		1	ł	1
4.1 Cargo handling and Utilization	1)Atnospheric Pollution		1	0.	1
of Storage Facilities	2)Water Pollution and Sediment			0	1
of Serials racificies	Pollution	1	1	1	1
	3)Noise level		1 0		1
	4)Offensive odours	t	+	1 0	+
		<u> </u>	0	<u>+ ~ ~ ~</u>	+
· · · ·	5)Changes of Aquatic Ecosysten		· · · · · · · · · · · · · · · · · · ·	÷	+
	6) Appearance of Wastes	l	- <u>-</u>	0	<u>.</u>
			1	0	1
	7)Enployment	1	1		1
		L		<u>[</u>	
. Inpact by Traffic	7)Enployment		<u> </u>	!	
. Impact by Traffic 3.1 Land Traffic	7)Employment		!	0	
5. Inpact by Tralfic 5.1 Land Traffic	7)Employment		!		
5. Inpact by Traffic 3.1 Land Traffic	7)Employment 1)Atmospheric Pollution 2)Noise and Vibration		!	0	
5. Inpact by Tratfic 5.1 Land Traffic	7)Employment		!	0	
5. Inpact by Traffic 5.1 Land Traffic	7)Employment 1)Atnospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosystem 4)Changes of Distributed Population in Planning area		!	0	· · · · · · · · · · · · · · · · · · ·
5. Impact by Tralfic 5.1 Land Traffic	7)Employment 1)Atnospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosystem		!	0	· · · · · · · · · · · · · · · · · · ·

Elements of Environmental Impact	Inpact to Environment	- Níl	Volune o Snall	of Inpac	
Inpact by Construction work			J	;	Lai La
1.1 Operation of Working vessels	1)Atmospheric Pollution			; 0	
and Construction machinery	2)Noise and Vibration			: 0	
	3)Changes to Terrestrial Ecosystem			·	<u> </u>
1.2 Dredging and Dunping soil	1) Vater Pollution and Sediment	+	0	<u>.                                    </u>	_i
the breaking and bunping soil	Pallutian (SC Tauta autobase)	0	i ·		:
	Pollution (SS, Toxic substance) 2)Offensive odours			<u></u>	
•	2) Offensive ocours	0		<u> </u>	·
	3)Decrease of Aquatic/Marine Fauna	0	1	i	
	and Flora		i	!	1
	4)Pollution of Marine products	0	1	1	,
	(o)Less value of Tourish	0	1	1	
<u> </u>	(later color, Coral reef)	ļ	1	:	1
1.3 Gathering soil	DChanges to Landforms	1	1	. 0	
-	2)Changes to Ground water	1	1 0	<u> </u>	
and the second second second second second second second second second second second second second second second	3)Disappearance of Terrestrial	+	1 0		·
	Ecosysten		i "	!	1
1.4 Appearance of Wastes	, 1) Water Pollution and Sediment		+	i	-:
Dunping Dredged soil	Pollution		0	1	:
bumping breaged soll	Pollucion	· · · ·	<u> </u>		•
	2)Inpact to Terrestrial Ecosystem	1. A. A.	! 0		:
1.5 Enployment	1)Influx of different cultures	1	1	0	•
	2)Changes in Economic activity		1	0	1
1.6 Congestion of Construction	il)Economic loss (Traffic jan)	1	T	0	:
vehicles and vessels	2)Reduced value of Fishing grounds	1	0	· · · · · ·	÷
STATES ON A TODOLD	I streaded targe of LISHING GLOUNUS	1		Ì	1
. Inpact by Existence of Port		<u> </u>			- <u>.</u>
		1	1	i .	1
Facilities and Land	· · · · · · · · · · · · · · · · · · ·	<b>_</b>	<u> </u>	1	
2.1 Existence of Land(including	1)Water Pollution and Sediment		0	1	
Reclained Land)	Pollution	1	1		;
	2)Coast erosion and deposition	1	1	0	
	3)Change in Tidal current	1		0	
	4)Decrease of Aquatic Habitats	<u> </u>		· · ·	:
		i	.0		i
	for Aquatic Fauna and Flora	ļ			
	5)Decrease of Terrestrial Habitats		0		1
	for Terrestrial Vegetation and	1	{ }		1
	Wildlife	1.			1
	6)Changes to Landscape		i i		
	7)Changes in Residential areas				0
	8)Disappearance of Fishing grounds		0		÷
2.2 Existence of Protective	1 Of Disappearance of rishing grounds	<b> </b>	0		!
	1) Inpact to Water Quality and	o I	[ ]		[
Facilities for Harbours	Sediment Quality	1		1.1	1
	2)Coast erosion and deposition	0	!		1
	3)Change in Tidal current	0			1
	4)Decrease of Aquatic Habitats	à	ii		1
	for Aquatic Fauna and Flora	ľ	!		
	5)Changes to Landscape	0			
2.3 Existence of Waterways	Changes to Lanuscape				÷
to Enjorance di Aucci aujo	1)Change in Tidal current 2)Decrease of Aquatic Habitats	l	0		
	cibecrease of Aquatic Habitats		0	1.1	
2 A P. 2. b. C D 1	for Aquatic Fauna and Flora	Ļ	<u> </u>		<u> </u>
2.4 Existence of Basins	1)Change in Tidal current	0			-
	2)Decrease of Aquatic Habitats		0		1
	for Aquatic Fauna and Flora	• • • • • •		• •-	-
· · · · · · · · · · · · · · · · · · ·					ļ
Inpact by Utilization of Water			<u> </u>		
Facilities and Mooring Facilities	[	1			Ľ
.1 Operation of Vessels	114transhowing Ballisting	· · · · · · · · · · · · · · · · · · ·			<u>.</u>
or operation of tessels	1)Atnospheric Pollution			0	
	2)Water Pollution (Bilge water)	L	<u> </u>		. 0
	3)Coast erosion by vessel wave		0		;
			. T	0	:
	4) Appearance of Wastes			-	:
			i		
· · ·	(including Dredging soil)				
			0		•
	(including Dredging soil)		0		· ·
Impact by Utilization of Cargo	(including Dredging soil)		0		• •
Inpact by Utilization of Cargo Sorting Facilities and Storage	(including Dredging soil)		0		• • •
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations		0		• • •
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations , 1)Atmospheric Pollution		0	0	•
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment		0	<u>0</u> 0	• • • • •
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations , 1)Atmospheric Pollution		0		• • • • •
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Water Pollution and Sediment Pollution				۲ ۲
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level		0	0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours			0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten			0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes			0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten			0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes			0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes			0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment		0	0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment 1)Atmospheric Pollution		0	0 0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment 1)Atmospheric Pollution 2)Noise and Vibration		0	0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten		0	0 0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment 1)Atmospheric Pollution 2)Noise and Vibration		0	0 0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Enployment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten 4)Changes of Distributed Population in Planoing area		0	0 0 0 0 0	
Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities -1 Cargo handling and Utilization of Storage Facilities	(including Dredging soil) 5)Hindrance to fishing operations 1)Atmospheric Pollution 2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten		0	0 0 0 0 0	

Elements of Environmental Inpact	Inpact to Environment		Volume	t of Pantoloan of Inpact
		Vil		Medium Large
Inpact by Construction work			<u> </u>	
1.1 Operation of Working vessels	1)Atnospheric Pollution		0	
and Construction machinery	2) Noise and Vibration	0		
	3)Changes to Terrestrial Ecosystem	0		
1.2 Dredging and Dumping soil	1) Water Pollution and Sediment		· :	1 (1) (1) (1) (1)
	Pollution (SS, Toxic substance) 2)Offensive odours	0		
	3)Decrease of Aquatic/Marine Fauna	0		
	and Flora	v		
	4)Pollution of Marine products	0	;	
	a)Less value of Tourism	ō		1
	(Water color, Coral reef)	i i	1	÷ ,
1.3 Gathering soil	1)Changes to Landforms	0		
1.0 General Soll	2)Changes to Ground water	0		
	3)Disappearance of Terrestrial	0		:
	Ecosysten	1		<u> </u>
1.4 Appearance of Wastes	1)Water Pollution and Sediment	0		1
Dunping Dredged soil	Pollution			<u>i i i</u>
banging broader brai	2) Inpact to Terrestrial Ecosystem	0	,	• •
1.5 Enployment	1)Influx of different cultures	0	'	<u> </u>
	2)Changes in Economic activity	0	;	
1.6 Congestion of Construction	1)Economic loss (Traffic jan)	0		
vehicles and vessels	2)Reduced value of Fishing grounds	0		
2. Inpact by Existence of Port		}		; ;
Facilities and Land	<u> </u>	ļ	i	· · · · · · · ·
2.1 Existence of Land(including	1)Water Pollution and Sediment	0	:	1
Reclained Land)	Pollution	<b></b>	_ <u>.</u>	•
	2)Coast erosion and deposition	0		
· · · · · · · · · · · · · · · · · · ·	3)Change in Tidal current	<u> </u>	0	
	4)Decrease of Aquatic Habitats	0		
	for Aquatic Fauna and Flora			
	5)Decrease of Terrestrial Habitats	0		1
	for Terrestrial Vegetation and		1	1
	Wildlife			
	6)Changes to Landscape	<u> </u>	0	
	7)Changes in Residential areas	0	- <u>-</u>	÷
	8)Disappearance of Fishing grounds	0		
2.2 Existence of Protective	1) Impact to Water Quality and Sodiment Quality	1 °		
Facilities for Harbours	Sediment Quality 2)Coast erosion and deposition	- 0		
	3)Change in Tidal current	0	1	
	4)Decrease of Aquatic Habitats	0	1	
	for Aquatic Fauna and Flora	ľ	!	
	5)Changes to Landscape	0	1	
2.3 Existence of Waterways	: 1)Change in Tidal current	0	4	1 1
CO EXTRUCT OF MUCHWARS	2)Decrease of Aquatic Habitats	1 o	;	1
	for Aquatic Fauna and Flora	1	İ	: 1
2.4 Existence of Basins	1)Change in Tidal current	0	:	í 1
S-C UNIDUCIOU UN DEGINO	2)Decrease of Aquatic Habitats	0		
	for Aquatic Fauna and Flora	1 · -		
		I	l	<u> </u>
3. Inpact by Utilization of Vater		1	i	i
Facilities and Mooring Facilitie	i . Si		<u> </u>	
3.1 Operation of Vessels	1)Atmospheric Pollution		10	· · ·
Aller	[2]Water Pollution (Bilge water)	1	! 0	1
	i 3)Coast erosion by vessel wave	1	0	<u> </u>
	4)Appearance of Wastes		0	
	(including Dredging soil)	I		
	5)Hindrance to fishing operations	0	í	1
·		ļ	<u> </u>	
4. Impact by Utilization of Cargo		1	}	1
Sorting Facilities and Storage	1	1	1	1
Facilitian		<b> </b>	.!	<u> </u>
4.1 Cargo handling and Utilization	1)Atnospheric Pollution	ļ	1 0	
of Storage Facilities	2)Water Pollution and Sediment	1	0	
	Pollution	<b>.</b>	<u> </u>	
	3) Noise level	<b></b>	· 0	
	4)Offensive odours	<b> </b> −−−	<u>! 0</u>	-+
	5)Changes of Aquatic Ecosysten		. 0	
	. 6) Appearance of Vastes	<b> </b>	· 0	
	7)Enployment	1	, v	
		<b> </b>	<u> </u>	
5. Inpact by Traffic	Managhania Ballutian	ł	0	· 1
5.1 Land Traffic	1)Atnospheric Pollution		· 0	· · · · · · · · · · · · · · · · · · ·
	2)Noise and Vibration	1	<u> </u>	
	3)Changes to Terrestrial Ecosysten (4)Changes of Distributed Population	0		
	AVOIGNESS OF DESCEPTION COMPACION	۲ ×	•	:
· · ·	in Planning aces			
	in Planning area 5)Traffic jans, accidents		0	

Elements of Environmental Impact	Inpact to Environment	NI	Volune o	of Uj.P of Inpact Medium	
Inpact by Construction work		· · · · · · · · · · · · · · · · · · ·			
1.1 Operation of Yorking vessels	1) Atnospheric Pollution		+ + + + + + + + + + + + + + + + + + + +	0	-
and Construction machinery	2) Yoise and Vibration 3) Changes to Terrestrial Ecosystem		. 0		
1.2 Dredging and Dumping soil	1) Water Pollution and Sediment	·	0		
1.2 preuging and compras sort	Pollution (SS, Toxic substance)		Ť	: .	
	2)Offensive odours		. 0	; ;	
	3)Decrease of Aquatic/Marine Fauna		. 0		
	and Flora				
	4)Pollution of Marine products	L	1 : 0	<u> </u>	
	5)Less value of Tourism	ļ	0	:	
	(Vater color, Coral reef)			<u>.                                    </u>	
1.3 Gathering soil	DChanges to Landforns	<b></b>	·····	0	
	2)Changes to Ground vater		0	·	·
	3)Disappearance of Terrestrial Ecosystem		: 0	: ;	
1.4 Appearance of Wastes	1) Vater Pollution and Sediment		. 0	<u></u>	
Dunping Dredged soil	· Pollution	· ·	. 0		
Dadbing Meaked 2011	2) Inpact to Terrestrial Ecosystem		; 0	<u>.</u>	
1.5 Employment	1)Influx of different cultures			0	
Tro Subrolucing	2)Changes in Econonic activity	1		0	
1.6 Congestion of Construction	1)Economic loss (Traffic jam)		: :	0	
vehicles and vessels	2)Reduced value of Fishing grounds	ļ	0		
			;	ا	
. Inpact by Existence of Port			1		
Facilities and Land	i .				
2.1 Existence of Land(including	1)Water Pollution and Sediment	1	: 0	1 1	
Reclained Land)	Pollution	<b> _</b>	1		
	2)Coast erosion and deposition	L		0	
	3)Change in Tidal current		i	<u> </u>	
	4)Decrease of Aquatic Habitats	]	; 0	; !	
	for Aquatic Fauna and Flora 5)Decrease of Terrestrial Habitats	ļ	<u>.</u>	<u> </u>	
		]	0		
	for Terrestrial Vegetation and		l	i	
	Vildlife	<b></b>			
	6)Changes to Landscape	<b></b>			0
	7)Changes in Residential areas			<u>                                     </u>	
	18)Disappearance of Fishing grounds (1)Inpact to Vater Quality and	<u></u>	0		
2.2 Existence of Protective	Sediment Quality		ľ		
Facilities for Harbours	2)Coast erosion and deposition		1 0	†i	
	3)Change in Tidal current	<u> </u>	0	1	
	4)Decrease of Aquatic Habitats		1 0		
	for Aquatic Fauna and Flora	1 ·		1	
	5)Changes to Landscape	[	1 0	ł	
2.3 Existence of Waterways	1)Change in Tidal current		1 0	1	
	2)Decrease of Aquatic Habitats		0	}	
	for Aquatic Fauna and Flora		<u>i</u>	<u>i</u>	
2.4 Existence of Basins	1 DChange in Tidal current		<u>i o</u>	<u> </u>	
	2)Decrease of Aquatic-Habitats		0		
	for Aquatic Fauna and Flora	1	1		
Inpact by Utilization of Water		1	3	1	
Facilities and Mooring Facilitie	S	·	<u>t</u>	· · · · ·	
3.1 Operation of Vessels	1) Atzospheric Pollution		4		0
	: 2)Water Pollution (Bilge water)	Į	<u>,</u>	· • •	
	(3)Coast erosion by vessel wave (4)Appearance of Wastes	<b> </b>		; ,	0
	(including Dredging soil)	1.	:	: 1	
· .	5)Hindrance to fishing operations	<u> </u>	: 0		
•	, everalities of traiting obstactions	[	ļ	!	
. Inpact by Utilization of Cargo	· · · · · · · · · · · · · · · · · · ·	<u> </u>	1	1	
Sorting Facilities and Storage		I		1 .	
Facilities		1			
ATT CARGE CONTINUE AND REVENUES	1)Atnospheric Pollution	I	1	0	
	2)Water Pollution and Sediment	1	1.	1 0	
of Storage Facilities	Claster Solidfiol and Sediment				
	Pollution			:	
	Pollution 3)Noise level		0		
	Pollution 3) Noise level 4) Offensive odours		0	0	
	Pollution 3) Noise Level 4) Offensive odours 5) Changes of Aquatic Ecosysten		0	0 0	
	Pollution 3) Xoise Level 4) Offensive odours 5) Changes of Aquatic Ecosystem 6) Appearance of Vastes		0	0	0
	Pollution 3) Noise Level 4) Offensive odours 5) Changes of Aquatic Ecosysten		0		0
of Storage Facilities	Pollution 3) Xoise Level 4) Offensive odours 5) Changes of Aquatic Ecosystem 6) Appearance of Vastes		0	0	0
of Storage Facilities	Pollution 3) Noise Level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Employment		0	0	0
of Storage Facilities	Pollution 3) Voise Level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Employment 1) Atmospheric Pollution		0	0	0
of Storage Facilities	Pollution 3) Xoise Level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Employment 1) Atmospheric Pollution 2) Noise and Vibration			0	0
	Pollution 3) Noise level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Enployment 1) Atmospheric Pollution 2) Noise and Vibration 3) Changes to Terrestrial Ecosysten		0	0 0 0	0
of Storage Facilities	Pollution 3) Voise level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Enployment 1) Atmospheric Pollution 2) Voise and Vibration 3) Changes to Terrestrial Ecosysten 4) Changes of Distributed Population			0	0
of Storage Facilities	Pollution 3) Noise level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Vastes 7) Enployment 1) Atmospheric Pollution 2) Noise and Vibration 3) Changes to Terrestrial Ecosysten			0 0 0	0

Classic of Contractor (good)	Inpact to Environment	T		t of Pare-Par of inpact
Elements of Environmental Impact	i inpace co environnene	Sil		Hediun Las
.Impact by Construction work				1 7
1.1 Operation of Working vessels	1) Atnospheric Pollution		. 0	
and Construction machinery	2) Noise and Vibration		0	• •
	3)Changes to Terrestrial Ecosystem	0	;	·
1.2 Dredging and Dumping soil	1) ater Pollution and Sediment	0	:	
	Pollution (SS, Toxic substance)		<u>}</u>	1 E
	2)Offensive odours	0	<u>i</u>	1
	3)Decrease of Aquatic/Marine Fauna	0	-	1
	and Flora	<u> </u>	1	<u>+                                     </u>
	4)Pollution of Marine products	0	1 .	
	5)Less value of Tourism	0		
T- 7 . A . (	(Vater color, Coral reef)			• • • •
1.3 Gathering soil	1)Changes to Landforns 2)Changes to Ground water	0		
	3)Disappearance of Terrestrial	0 0		
	Ecosysten	U U	1	1
1.4 Appearance of Wastes	1) Vater Pollution and Sediment	0	<u></u>	;
	Pollution	Ŭ		
Dumping Dredged soil	2)Inpact to Terrestrial Ecosystem	0		
La Croloucost	1) Influx of different cultures	<u> </u>	0	
1.5 Enployment	2)Changes in Economic activity	1	0	
1.6 Congestion of Construction	i 1)Econonic loss (Traffic jan)		0	
vehicles and vessels	2)Reduced value of Fishing grounds	t	0	÷ 1
veniferes and vessers	Filegreed same of signing grounds	1		1
. Inpact by Existence of Port	<u> </u>			
Facilities and Land		1 ·		
2.1 Existence of Land(including	1)Water Pollution and Sediment	0		·····
Reclained Land)	Pollution	ľ	1	i i
worlding dend)	[2]Coast erosion and deposition	ò	1	
	3)Change in Tidal current	<u>+</u>	' 0	1 1
	4)Decrease of Aquatic Habitats	0	1	i i
	for Aquatic Fauna and Flora	1	i	1
	5)Decrease of Terrestrial Habitats	0	1	
	for Terrestrial Vegetation and	1		1
	Vildlife	I		
	6)Changes to Landscape		i	0
	7)Changes in Residential areas		0	1
	8)Disappearance of Fishing grounds		0	1
2.2 Existence of Protective	1) Inpact to Water Quality and	0		1 1
Facilities for Harbours	Sediment Quality			<u>l.</u>
	2)Coast erosion and deposition	0	1	
	3)Change in Tidal current	0	1	<u> </u>
	4)Decrease of Aquatic Habitats	0	Ì	i 1
	for Aquatic Fauna and Flora	Į	<u></u>	<u> </u>
9 9 0 6 H	S)Changes to Landscape	0	+	
2.3 Existence of Waterways	1)Change in Tidal current	0		<u> </u>
	2)Decrease of Aquatic Habitats	0	1	1
9 ( p ( )	for Aquatic Fauna and Flora			<u>, , , , , , , , , , , , , , , , , , , </u>
2.4 Existence of Basins	1)Change in Tidal current		<u> </u>	
	2)Decrease of Aquatic Habitats	0		
	for Aquatic Fauna and Flora	1		
Innach bu libili astica af Cata-	<u></u>	t	+	<u>+</u>
. Impact by Utilization of Water		1		
Facilities and Mooring Facilitie	s 1)Atmospheric Pollution		0	<u>I</u>
3.1 Operation of Vessels	2)Water Pollution (Bilge water)	<u>├</u> ──	<u></u>	÷
	3)Coast erosion by vessel wave	<u> </u>	1 0	· · · ·
	4)Appearance of Wastes		- <u> </u>	0
	(including Dredging soil)	1	1	· ·
	5)Hindrance to fishing operations	(	0	:
	Authoranes of Trautur Abergelous	1	ļ	
. Impact by Utilization of Cargo	<u> </u>		1	
Sorting Facilities and Storage	1		1.	
Facilities		· ·	1	
4.1 Cargo handling and Utilization	[])Atnospheric Pollution	· · · ·	0	; ;
of Storage Facilities	2)Water Pollution and Sediment	1	0	1
	Pollution	L		<u> </u>
	3)Noise level		0	• • •
	(4)Offensive odours	L	: 0	I
	5)Changes of Aquatic Ecosystem		0	
	6)Appearance of Sastes		0	
	7)Enployment		0	! !
	i		!	<u>.</u>
<ul> <li>Inpact by Traffic</li> </ul>			<u>.</u>	
5.1 Land Traffic	1)Atnospheric Pollution	I	0	
	2)Noise and Vibration		0	
	3)Changes to Terrestrial Ecosystem	0		·
	; 4)Changes of Distributed Population		0	1 i
	in Planning area		2	
	. 5)Traffic jans, accidents		0	·
	; 6)Outflow of cultures	0		

#### [ Port of Kendari ] Volume of Inpact Small Medium Large Inpact to Environment Elements of Environmental Impact Vi I 1. Inpact by Construction work [.1 Operation of Yorking vessels and Construction machinery 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosystem 0 0 ٥ 1.2 Dredging and Dumping soil 1) Vater Pollution and Sediment 0 Pollution (SS, Toxic substance) 2)Offensive odours 3)Decrease of Aquatic/Marine Fauna 0 0 and Flora 4)Pollution of Marine products 5)Less value of Tourisn (Vater color, Coral reef) 1)Changes to Landforms 0 0 1.3 Gathering soil 2)Changes to Ground water 3)Disappearance of Terrestrial 0 0 Ecosysten 1)Water Pollution and Sediment 1.4 Appearance of Vastes 0 ÷ Dumping Dredged soil Pollution 2)Inpact to Terrestrial Ecosystem 1)Influx of different cultures 2)Changes in Economic activity 0 1.5 Employment 0 0 1)Econonic loss (Traffic jan) 2)Reduced value of Fishing grounds 1.6 Congestion of Construction 0 vehicles and vessels 0 2. Impact by Existence of Port . 1 Facilities and Land 2.1 Existence of Land(including 1) Water Pollution and Sediment 0 Reclaiged Land) Pollution 2)Coast erosion and deposition 3)Change in Tidal current 4)Decrease of Aquatic Habitats ø о 0 for Aquatic Fauna'and Flora 5)Decrease of Terrestrial Habitats 0 for Terrestrial Vegetation and 6)Changes to Landscape 7)Changes in Residential areas 0 0 8)Disappearance of Fishing grounds 1)Inpact to Water Quality and 0 2.2 Existence of Protective Facilities for Harbours 1)Inpact to Water Quality and Sediment Quality 2)Coast erosion and deposition 3)Change in Tidal current 4)Decrease of Aquatic Mabitats for Aquatic Fauna and Flora 5)Changes to Landscape 1)Change in Tidal current 2)Decrease of Aquatic Mabitats for Aquatic Fauna and Flora 1)Change in Tidal current 2)Decrease of Aquatic Kabitats for Aquatic Fauna and Flora 1)Change in Tidal current 2)Decrease of Aquatic Kabitats for Aquatic Fauna and Flora 0 -0 0 0 0 2.3 Existence of Waterways 0 0 2.4 Existence of Basins 0 0 3. Inpact by Utilization of Water Facilities and Mooring Facilities 3.1 Operation of Vessels S 1)Atnospheric Pollution 2)Water Pollution (Bilge water) 3)Coast erosion by vessel wave 4)Appearance of Wastes 0 0 0 0 (including Dredging soil) 5)Hindrance to fishing operations 0 ÷ 4. Inpact by Utilization of Cargo Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization 1)Atnospheric Pollution 2)Vater Pollution and Sediment 0 of Storage Facilities 0 Pollution Pollucion 3) Noise level 4) Offensive odours 5) Changes of Aquatic Ecosysten 6) Appearance of Sastes 7) Enployment 0 0 0 0 ø

· · .

Elements of Environmental Impact	Inpact to Environment	T	Volune	of Inpa	
and the second second second second second second second second second second second second second second second	· · · · · · · · · · · · · · · · · · ·	- Sil	Snall	Mediu	n Large
1.Inpact by Construction work		ļ			
1.1 Operation of Forking vessels	1)Atnospheric Pollution		0		
and Construction nachinery	2)Noise and Vibration	·	0		
1.0.0	3)Changes to Terrestrial Ecosystem	0	· · · · · · · · · · · · · · · · · · ·	÷	
1.2 Dredging and Dunping soil	1) Water Pollution and Sediment	0	•	•	
	Pollution (SS, Toxic substance)			·	<del>.</del>
· · · · · · · · · · · · · · · · · · ·	2)Offensive odours	0		<u>.</u>	
	3)Decrease of Aquatic/Marine Fauna	0	1	:	1
	and Flora		<u>.</u>	!	•
	-4)Pollution of Marine products	0	<u>:</u>	•	
	: 5)Less value of Tourism	0	1	:	;
· · · · · · · · · · · · · · · · · · ·	(Vater color, Coral reef)	L		•	
1.3 Gathering soil	1)Changes to Landforns	0			
	2)Changes to Ground water	0	•		•
	3)Disappearance of Terrestrial	0		:	
	Ecosystem		:	1	
1.4 Appearance of Gastes	1) Water Pollution and Sediment	0	•	•	1
Dumping Dredged soil	Pollution		:	÷	
	2)Inpact to Terrestrial Ecosystem	0	1		1
1.5 Enployment	; 1) Influx of different cultures	0			
	2)Changes in Econonic activity	0		:	
1.6 Congestion of Construction	1)Econonic loss (Traffic jan)	l o		:	!
vehicles and vessels	2)Reduced value of Fishing grounds	0	•		· ·
-6476769 dua (032019	I	ľ	1	î	:
2. Inpact by Existence of Port		t		·····	
Facilities and Land		1	ļ	-	į
2.1 Existence of Land(including	1) Sater Pollution and Sediment	1	• •		
Reclained Land)	Pollution	1		1	1
neclathed Land)	2)Coast erosion and deposition		· · ·	,	
	: 3)Change in Tidal current	<b>.</b>	: 0	· · ·	•
			0	;	:
	4)Decrease of Aquatic Habitats		0		
	for Aquatic Fauna and Flora	ļ	<u>.</u>		
	5)Decrease of Terrestrial Habitats		0	1	
	for Terrestrial Vegetation and	1	i ·	÷	
	Vildlife		4	·	
	6)Changes to Landscape		<u>i 0</u>	<u>•</u>	
	7)Changes in Residential areas	L	; •	<u>;</u>	
	8)Disappearance of Fishing grounds	<u> </u>	1 0	:	1
2.2 Existence of Protective	1)Inpact to Water Quality and	0		1	
Facilities for Harbours	Sediment Quality		1	[	
	2)Coast erosion and deposition	0	Į –		. i
	3)Change in Tidal current	0	Į		1
	(4)Decrease of Aquatic Habitats	0	1	1	1
	for Aquatic Fauna and Flora		ļ	1	}
•	5)Changes to Landscape	0	1	?	i
2.3 Existence of Waterways	1)Change in Tidal current	0	1.	:	1
	2)Decrease of Aquatic Habitats	0	1	1	1
	for Aquatic Fauna and Flora		i i	Í.	1 I
2.4 Existence of Basins	i DChange in Tidal current	0	1 .	3	1
	2)Decrease of Aquatic Habitats	0	1	)	•
·	for Aquatic Fauna and Flora	· ·	· ·	1	1
		!		:	ļ
. Inpact by Utilization of Water		1	;	•	,
Facilities and Mooring Facilitie	s.	l .	!	1	1
3.1 Operation of Vessels	1)Atnospheric Pollution		1 . 0		:
AT ALALGOTAN AT 1033013	2) Water Pollution (Bilge water)		; 0	1	1
	3)Coast erosion by vessel wave	i	; v ; v	i	i i
	4)Appearance of Vastes		i 0		
	(including Dredging soil)		i	1	1
	5) Hindrance to fishing operations	t	<u>'</u> 0	;	-:
	, ANTIMUSING ON TISHING ANCIDES	- I	1	F	1
· Inpact by Utilization of Cargo		<u> </u>	<u>.</u>	<u>.</u>	· · · · ·
Sorting Facilities and Storage					1
Facilities			÷	1	
4.1 Cargo handling and Utilization	1) Atmospheric Pollution	t	i 1 0		
of Storage Facilities	2) Water Pollution and Sediment		1 0	!	1
of acorage raciilities	Pollution	1		1	
		<u> </u>		÷ · · ·	
	3)Noise level	ł	0	<del>.</del>	
	4)Offensive odours	· · ··	0	<u>۰</u>	<u></u>
	3)Changes of Aquatic Ecosystem	i	0	<u> </u>	÷
	6) Appearance of Wastes			;	2
	7)Enployment		0		:
	·	ļ	•		
Inpact by Traffic	· · · · · · · · · · · · · · · · · · ·	I	<u> </u>	:	!
5.1 Land Traffic	1)Atnospheric Pollution	L	0		:
	2)Noise and Vibration		0		,
	3)Changes to Terrestrial Ecosystem	0			
	4)Changes of Distributed Population	0	:		
	in Planning area			£ .	
	.5)Traffic jans, accidents		. 0		

Elements of Environmental Inpact	Inpact to Environment	1	Volume	Port of of Inpac	t
	· · · · · · · · · · · · · · · · · · ·	SIL	Snall	lediu	Lare
1.1 Operation of Vorking vessels	,	1			
1.1 Operation of Yorking vessels	1)Atmospheric Pollution	····	•		•
and Construction machinery	2) Noise and Vibration		÷	: 0	·····
	: 3)Changes to Terrestrial Ecosystem		: 0		····
1.2 Dredging and Dunping soil	1)Water Pollution and Sediment	0	· · · · ·		-
	Pollution (SS, Toxic substance)	ľ		1	1.1
	2)Offensive odours	1		· · · · · · · · · · · · · · · · · · ·	····
	3)Decrease of Aquatic/Marine Fauna	0		· • · · · · · · · · · · · · · · · · · ·	<u> </u>
	and Flora	0	ł	1	ł
	4)Pollution of Marine products		1	<u>i</u>	
· · · · · ·	- 4/Pollucion of Marine products	0	·	•	
	; 5)Less value of Tourism	•	1		
	: (Water color, Coral reef)	·	<u>.</u>		
1.3 Gathering soil	1)Changes to Landforms			. 0	-
	2)Changes to Ground water		1 0	1	
	3)Disappearance of Terrestrial		; 0		1
<u> </u>	Ecosysten	1		-	1
1.4 Appearance of Vastes	; 1)Water Pollution and Sediment		: 0		
Dumping Dredged soil	Pollution		•	1	
	2) Inpact to Terrestrial Ecosystem		0		1
1.5 Employment	1) Influx of different cultures		÷	1 0	
	2)Changes in Economic activity		· <del>.</del>		
1.6 Congestion of Construction	1)Econonic loss (Traffic jan)	<u> </u>	÷	0	:
vehicles and vessels	The durand walks of Collinson	· · ·		; 0	!
venicies and vessels	2)Reduced value of Fishing grounds		0	:	:
Transk La C		<b> </b>		<u>.</u>	
. Inpact by Existence of Port		1	ł	1	1
Facilities and Land		I		1	
2.1 Existence of Land(including	1)Water Pollution and Sediment		0		
Reclained Land)	Pollution		1	1	:
	2)Coast erosion and deposition		1	0	i
	3)Change in Tidal current		1	2 0	-
	4)Decrease of Aquatic Habitats		0	· · · · · · · · · · · · · · · · · · ·	<u>+</u>
	for Aquatic Fauna and Flora		1	1 .	
	5)Decrease of Terrestrial Habitats		+		<u> </u>
			0	1	1
	for Terrestrial Vegetation and		i	i	
	Vildlife		<u>+-</u>		į
	6)Changes to Landscape		<u> </u>	-	0
	7)Changes in Residential areas		1	10	i
	8)Disappearance of Fishing grounds		; 0	t	1
2.2 Existence of Protective	1) Inpact to Water Quality and	0	1	1	1
Facilities for Harbours'	Sedinent Quality		i	i ·	i
	2)Coast erosion and deposition	0	1	<u>;                                    </u>	1
	3)Change in Tidal current	0	Ý	·	i –
	4)Decrease of Aquatic Habitats	0	+	<u> </u>	
	for Aquatic Fauna and Flora	v	i	!	
			ļ	<del> </del>	÷
2.3 Existence of Waterways	5)Changes to Landscape	0		<u> </u>	-
LIO ENISCENCE OF MACOTHAYS	1)Change in Tidal current 2)Decrease of Aquatic Habitats		0	<u> </u>	!
	for Aquatic Fauna and Flora		0		1
2.4 Existence of Basins	1 TOT AQUACIC FAUNA AND FIOTA		<u>.</u>		<u>[</u>
2.4 EXISTENCE OF DESINS	1)Change in Tidal current		0	<u>.</u>	<u> </u>
- · · · ·	2)Decrease of Aquatic Habitats		0.	· ·	
	for Aquatic Fauna and Flora		1	1	!
<ul> <li>Inpact by Utilization of Vater</li> </ul>			1	[	1
Facilities and Mooring Facilities	sl		1	-	
3.1 Operation of Vessels	1)Atnospheric Pollution		1 .	0	
	2)Water Pollution (Bilge water)		1	1	0
	3)Coast erosion by vessel wave		1	0	, ř
	4) Appearance of Wastes		<u> </u>	······································	0
	(including Dredging soil)		i	1	l v
	5)Hindrance to fishing operations				i
	wainerance to fishing operations		0	i	i
. Inpact by Utilization of Cargo	÷		;	ļ	<u> </u>
	· · · · · · · · · · · · · · · · · · ·		1		i
Sorting Facilities and Storage					1
Facilities			I	L	<u> </u>
			t .	0	
of Storage Facilities	2)Water Pollution and Sediment		! _	0	1
	Pollution		1	:	:
	3)Noise level		0	1 - A - A	
	4)Offensive odours			0	
	5)Changes of Aquatic Ecosysten		i .	0	·
	6)Appearance of Vastes			·	0
	7)Enployment		·		- · ·
	Truptojnono			•	:
Innal by Tartfin	<u></u>		, 	,	<u> </u>
Inpact by Traffic			· •	·	·
1 Land Traffic	11)Atnospheric Pollution		<u> </u>	0	
	2)Noise and Vibration			0	
	3)Changes to Terrestrial Ecosysten		0		
•	4)Changes of Distributed Population			0	
	in Planning area				
•	10 1100010 0100				
	5)Traffic jans, accidents 6)Outflow of cultures			0	

Elements of Environmental Impact	- Inpact to Environment	<b>T</b>	Volune d	Port of Sorong of Impact
	Contrast of an entry officero	Vil		Yediun Largo
I Inpact by Construction work			·	1
1.1 Operation of Working vessels	1)Atnospheric Pollution		0	1 /
and Construction machinery	2) Noise and Vibration	· · ·	0	· · · · · · · · · · · · · · · · · · ·
100	3)Changes to Terrestrial Ecosystem	0		·····
1.2 Dredging and Dumping soil	1) Water Pollution and Sediment	0	•	
	Pollution (SS, Toxic substance) 2)Offensive odours	+		·
	3)Decrease of Aquatic/Marine Fauna	0		<u>+</u>
	and Flora	1		
	4)Pollution of Marine products	0	,	•
	5)Less value of Tourism	0	!	· · · · · · · · · · · · · · · · · · ·
	(Water color, Coral reef)		1	4 t
1.3 Gathering soil	1)Changes to Landforms	0	ì	f
	2)Changes to Ground water	· 0	·	• •
	3)Disappearance of Terrestrial	0	i	
1 ( 1	Ecosysten	<u> </u>		
1.4 Appearance of Vastes	: 1)Water Pollution and Sediment Pollution	0	1	]
Dunping Dredged soil	2)Inpact to Terrestrial Ecosystem	0	<u>.</u>	· · · · · · · · · · · · · · · · · · ·
1.5 Enployment	1)Influx of different cultures	0	·	<u>∤</u>
1.0 ENPIOYICHC	2)Changes in Economic activity	0	1	
1.6 Congestion of Construction	DEcononic loss (Traffic jan)	ŏ	1	; ;
vehicles and vessels	2)Reduced value of Fishing grounds	ů ů	1	1
		1	i	i
. Inpact by Existence of Port	1		ł	1 1
Facilities and Land	1 1 	1	1	<u>;                                    </u>
2.1 Existence of Land(including	1)Water Pollution and Sediment		; 0	1
Reclained Land)	Pollution	<u> </u>	!	<u> </u>
	2)Coast erosion and deposition	-	0	<u> </u>
	3)Change in Tidal current		0	i 1
	4)Decrease of Aquatic Habitats	1	0	i
	for Aquatic Fauna and Flora 5)Decrease of Terrestrial Habitats			i
	for Terrestrial Vegetation and		0	1 1
	Wildlife		1	
	6)Changes to Landscape	· · · · · · · · · · · · · · · · · · ·	1 0	
	7)Changes in Residential areas	·	1 0	
	8)Disappearance of Fishing grounds	1	1 0	1
2.2 Existence of Protective	1) Inpact to Water Quality and	0	1	1
Facilities for Harbours	Sediment Quality		Į.	
	2)Coast erosion and deposition	0	1	
	3)Change in Tidal current	0	!	11
	4)Decrease of Aquatic Habitats	0	1	
	for Aquatic Fauna and Flora		ļ	ļ
	5)Changes to Landscape 1)Change in Tidal current 2)Decrease of Aquatic Habitats	0	<u> </u>	
2.3 Existence of Waterways	1)Unange in ligal current	0		
	for Aquatic Fauna and Flora	l v		
2.4 Existence of Basins	1)Change in Tidal current	0		
Evi Existence of Basins	2)Decrease of Aquatic Habitats	0	1	
	for Aquatic Fauna and Flora	ľ	}	
		1		
. Inpact by Utilization of Water		1		1
Facilities and Mooring Facilities			L	
3.1 Operation of Vessels	1)Atmospheric Pollution		0	
	2)Water Pollution (Bilge water)	L	0	<u> </u>
	3)Coast erosion by vessel wave		0	<u>!</u>
	4)Appearance of Wastes	ļ	0	1
	(including Dredging soil)	<u> </u>		
and the second second second second second second second second second second second second second second second	5)Hindrance to fishing operations	1	0	1
Impact by Utilization of Cargo	ļ	<u> </u>	<u>i</u>	<u>!</u>
Sorting Facilities and Storage				1
	1			
Facilities	11Atpospheric Pollution		0	;····
Facilities		<b> </b>		
1.1 Cargo handling and Utilization		1		,
Actilities 1.1 Cargo handling and Utilization of Storage Facilities	2) Vater Pollution and Sediment		• • I	1
1.1 Cargo handling and Utilization			0	
1.1 Cargo handling and Utilization	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours			
4.1 Cargo handling and Utilization	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem		0	
4.1 Cargo handling and Utilization	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes		0	
4.1 Cargo handling and Utilization	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem		0	
4.1 Cargo handling and Utilization of Storage Facilities	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes		0 0 0	
4.1 Cargo handling and Utilization of Storage Facilities	2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 8)Appearance of Wastes 7)Employment		0 0 0	
4.1 Cargo handling and Utilization of Storage Facilities	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment		0 0 0 0	
4.1 Cargo handling and Utilization of Storage Facilities	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes 7)Employment 1)Atnosphoric Pollution 2)Noise and Vibration	·		
4.1 Cargo handling and Utilization of Storage Facilities	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosystem	·		
4.1 Cargo handling and Utilization	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosysten 4)Changes of Distributed Population	· ·		
4.1 Cargo handling and Utilization of Storage Facilities	2)Vater Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosystem 6)Appearance of Wastes 7)Employment 1)Atmospheric Pollution 2)Noise and Vibration 3)Changes to Terrestrial Ecosystem	· ·		

Result of I	Initial	Environmental	Examination	(331)
-------------	---------	---------------	-------------	-------

N	; Inpact to Environment			of Inpact	Biak ]
Elements of Environmental Impact	i Enpace co Environmene	Nil		Yediun	
I.Inpact by Construction work				<u>.</u>	<u> </u>
1.1 Operation of Yorking vessels	DAtnospheric Pollution		0	÷	÷
and Construction machinery	2)Noise and Vibration 3)Changes to Terrestrial Ecosystem	0			,
1.2 Deadwing and Durning soil	1) Water Pollution and Sediment	0		1	
1.2 Dredging and Dunping soil	Pollution (SS, Toxic substance)	ľ	l.		:
	2)Offensive odours	0			
	3)Decrease of Aquatic/Marine Fauna		•	1	
	and Flora		1		;
	4)Pollution of Harine products	0	1	1	
	5)Less value of Tourism	0		i	
	(Vater color, Coral reef)			÷	
1.3 Gathering soil	1)Changes to Landforms 2)Changes to Ground water	0			
	3)Disappearance of Terrestrial	0	1		÷
	Ecosysten	ř		-	1
1.4 Appearance of Mastes	1) Water Pollution and Sediment	0			1
Dunping Dredged soil	Pollution		<u> </u>	<u>.</u>	<u>.</u>
	2)Inpact to Terrestrial Ecosystem	0			<u>{</u>
1.5 Employment	1) Influx of different cultures	0	· · · · ·	<u>.</u>	<u>;                                    </u>
	2)Changes in Economic activity	0	1		
1.6 Congestion of Construction	1)Econonic loss (Traffic jan)	0		4 % A	<u>.</u>
vehicles and vessels	2)Reduced value of Fishing ground			1	•
2. Impact by Existence of Port	······				<u>.</u>
Facilities and Land				1	1
2.1 Existence of Land (including	1)Water Pollution and Sediment		0	· ·	
Reclaimed Land)	Pollution		!	_i	<u>į</u>
	2)Coast erosion and deposition		0	<u> </u>	<u>.</u>
	3)Change in Tidal current		1 0	÷‡	÷
· · · ·	4)Decrease of Aquatic Habitats	1	0	i	1
	for Aquatic Fauna and Flora 5)Decrease of Terrestrial Habitat		0	- <del> </del>	<del></del>
	for Terrestrial Vegetation and	<b>`</b>	Ň		ļ
	Wildlife	1			Í
	6)Changes to Landscape		, 0		1
	7)Changes in Residential areas		0		1
	8)Disappearance of Fishing ground	3	0	1	1
2.2 Existence of Protective	1) Impact to Water Quality and	0			1
Facilities for Harbours	Sedinent Quality				<u>}</u>
	2)Coast erosion and deposition	0			
	3)Change in Tidal current 4)Decrease of Aquatic Habitats				1
	for Aquatic Fauna and Flora				
	5)Changes to Landscape	0	1	1	1
2.3 Existence of Waterways	1)Change in Tidal current	0	1	1	l
	2)Decrease of Aquatic Habitats	0	1	1	
	for Aquatic Fauna and Flora				1
2.4 Existence of Basins	1)Change in Tidal current	0		<u> </u>	
	2)Decrease of Aquatic Habitats for Aquatic Fauna and Flora	. 0.	-	1	
· · · ·	TOL MANAPIC LANKS SUG LTOLS		i.	ļ	1
3. Impact by Utilization of Water			1		1
Facilities and Mooring Facilitie	1 19				!
3.1 Operation of Vessels	(1) Atnospheric Pollution		0		I
·	2) Water Pollution (Bilge water)		0	. <u>.</u>	<u>i</u>
	3)Coast erosion by vessel wave		! 0	<u> </u>	<u>i</u>
	4) Appearance of Vastes		0		
	(including Dredging soil) 5)Hindrance to fishing operations		0	 1	1
	i overlation to itsuing operations		ľ	1	1
4. Inpact by Utilization of Cargo	+				
Sorting Facilities and Storage			i		i
Facilities	· ·	·		!	1
4.1 Cargo handling and Utilization	1)Atmospheric Pollution		0	<u>.</u>	
of Storage Facilities	2)Water Pollution and Sediment		0	1	i
•	Pollution			۱	<u>.</u>
	3)Noise level		0		<del>.</del>
	4)Offensive odours		0		
	5)Changes of Aquatic Ecosystem 6)Appearance of Wastes		1 0		;
	· 7)Enployment		1 0	1	•
		5 - <b>1</b> - 5 - 5	1	;	•
5. Impact by Traffic			1		<u>.</u>
5.1 Land Traffic	1)Atnospheric Pollution		0	1	
	2)Noise and Vibration		0		
	3)Changes to Terrestrial Ecosyste				· <u>·</u> ····
	3)Changes to Terrestrial Ecosyste 4)Changes of Distributed Populati		0		;
	3)Changes to Terrestrial Ecosyste		0		

			[ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	t of Ja	уарыга
Elements of Environmental Impact	Inpact to Environment	- NII	Volume of Snall	f Inpac	t Long
The second second		<u>-311</u>	- 31611	.iedrun	Large
Inpact by Construction work 1.1 Operation of Working vessels	1)Atnospheric Pollution		0		- <u>-</u>
and Construction machinery	2)Noise and Vibration		0		
and doubtluceron machinery	3)Changes to Terrestrial Ecosysten	0			•
1.2 Dredging and Dupping soil	1)Vater Pollution and Sediment	0	·		
1.2 Dreuging and Dubping Soll	Pollution (SS. Toxic substance)	Í	-	•	1 .
	2)Offensive odours	0	; .		
	3)Decrease of Aquatic/Marine Fauna				
	and Flora	1	1	•	1
	4)Pollution of Marine products	0			1
	· 5)Less value of Tourisn	0	<u>.</u>	<del></del>	·
	(Vater color, Coral reef)	ľ	,	-	1
1.3 Gathering soil	1)Changes to Landforms	0	-		•
1.5 Oathering Soll	2)Changes to Ground water	0	<del>,</del>		,
	3)Disappearance of Terrestrial	0	:		;
		ľ	•		:
<u> </u>	Ecosysten	I	·		•
1.4 Appearance of Vastes	1)Water Pollution and Sediment	0	1	:	
Dunping Dredged soil	Pollution	1			<u>.</u>
	2) Inpact to Terrestrial Ecosystem	0	<u>;</u>	<u> </u>	-{
1.5 Employment	1) Influx of different cultures	<u> </u>	i	<u>:</u>	
	2)Changes in Economic activity	0	í	:	
1.6 Congestion of Construction	1)Econonic loss (Traffic jan)	0	<u>.</u>	<u>.</u>	;
vehicles and vessels	2)Reduced value of Fishing grounds	0		<u>.</u>	1
·	· · · · · · · · · · · · · · · · · · ·	<b></b>			·
. Inpact by Existence of Port	·	i	I	:	:
Facilities and Land		ļ	<u>i</u>	:.	+
2.1 Existence of Land(including	1)Vater Pollution and Sediment	!	: 0	:	:
Reclained Land)	Pollution	ļ	1	!	<u>t</u>
	2)Coast erosion and deposition	L	; 0	<u>:</u>	1
	3)Change in Tidal current		i o	:	i
	(4)Decrease of Aquatic Habitats		0	1	
	for Aquatic Fauna and Flora		l		1
	5)Decrease of Terrestrial Habitats		; 0	:	1
	for Terrestrial Vegetation and		i I	i	1
	Vildlife	1		;	;
	6)Changes to Landscape		j 0	i	
	7)Changes in Residential areas		1 0		1
	8)Disappearance of Fishing grounds		; 0	1	1
2.2 Existence of Protective	1) Inpact to Vater Quality and	0		i .	1
Facilities for Harbours	Sedinent Quality		i	i	1
Facilities for haroouts	2)Coast erosion and deposition	0	1	i	
	3)Change in Tidal current	0		1	1
	4)Decrease of Aquatic Habitats	0	i		
	for Aquatic Fauna and Flora	ľ			
	5)Changes to Landscape	0	;	:	
2.3 Existence of Waterways	1)Change in Tidal current	0	ł	1	+
2.5 CAISCENCE OF Waterways	2)Decrease of Aquatic Habitats	ŏ	1	, i	1
	for Aquatic Fauna and Flora	ľ	i	1	
2 4 Put to a Destan	1)Change in Tidal current	0	1		1
2.4 Existence of Basins	2)Decrease of Aquatic Habitats				1 .
· · · · <del>-</del> ***			1 · · · ·	1	1 -
	for Aquatic Fauna and Flora		ł	1	ĺ
	<u>.</u>	ŧ		<u>.</u>	÷
. Inpact by Utilization of Vater	<b>;</b>	1	1	:	1
Facilities and Mooring Facilities	111	1		<u>;</u>	÷—
3.1 Operation of Vessels	1)Atmospheric Pollution	<u> </u>	0	;	<del></del>
	2)Water Pollution (Bilge water)	<u> </u>	<u>· · · · · · · · · · · · · · · · · · · </u>	:	;
	3)Coast erosion by vessel wave		0		
	4)Appearance of Mastes		0	;	1
		i	•		
	(including Dredging soil)	1	1		1
	5)Hindrance to fishing operations		0	:	1
· · · · · · · · · · · · · · · · · · ·			0	!	<u> </u>
			0	: :	<u> </u> ;
Sorting Facilities and Storage			0	: : :	
Sorting Facilities and Storage	5)Hindrance to fishing operations				
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	5)Hindrance to fishing operations		0		
Sorting Facilities and Storage	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment		0	:	
Sorting Facilities and Storage Facilities 1.1 Cargo handling and Utilization	5)Hindrance to fishing operations		0	· · · · · · · · · · · · · · · · · · ·	
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment		0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise Level 4)Offensive odours		0 0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise Level 4)Offensive odours		0	: : : : :	1 
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	JHindrance to fishing operations         I)Atnospheric Pollution         ?2Water Pollution and Sediment         Pollution         3Noise level         4)Offensive odours         5)Changes of Aquatic Ecosysten		0 0 0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	3)Hindrance to fishing operations         1)Atnospheric Pollution         72)Water Pollution and Sediment         Pollution         3)Noise level         4)Offensive odours         3)Changes of Aquatic Ecosysten         6)Appearance of Wastes		0 0 0 0		· · · · · · · · · · · · · · · · · · ·
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization	JHindrance to fishing operations         I)Atnospheric Pollution         ?2Water Pollution and Sediment         Pollution         3Noise level         4)Offensive odours         5)Changes of Aquatic Ecosysten		0 0 0 0 0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities	3)Hindrance to fishing operations         1)Atnospheric Pollution         72)Water Pollution and Sediment         Pollution         3)Noise level         4)Offensive odours         3)Changes of Aquatic Ecosysten         6)Appearance of Wastes		0 0 0 0 0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities . Inpact by Traffic	<ul> <li>3)Hindrance to fishing operations</li> <li>1)Atnospheric Pollution</li> <li>2)Water Pollution and Sediment</li> <li>Pollution</li> <li>3)Noise level</li> <li>4)Offensive odours</li> <li>5)Changes of Aquatic Ecosysten</li> <li>6)Appearance of Wastes</li> <li>7)Employment</li> </ul>		0 0 0 0 0		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities . Inpact by Traffic	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution				2 2 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities . Inpact by Traffic	5)Hindrance to fishing operations 1)Atnospheric Pollution 2)Water Pollution and Sediment Pollution 3)Noise level 4)Offensive odours 5)Changes of Aquatic Ecosysten 6)Appearance of Wastes 7)Employment 1)Atnospheric Pollution 2)Noise and Vibration		0 0 0 0 0 0		
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities . Inpact by Traffic	3)Hindrance to fishing operations         1)Atnospheric Pollution         2)Water Pollution and Sediment         Pollution         3)Noise level         4)Offensive odours         5)Changes of Aquatic Ecosysten         6)Appearance of Wastes         7)Employment         1)Atnospheric Pollution         2)Noise and Vibration         3)Changes to Terrestrial Ecosysten	0			
Facilities 4.1 Cargo handling and Utilization	<ul> <li>3)Hindrance to fishing operations</li> <li>3)Hindrance to fishing operations</li> <li>1)Atnospheric Pollution</li> <li>2)Vater Pollution and Sediment</li> <li>Pollution</li> <li>3)Noise level</li> <li>4)Offensive odours</li> <li>5)Changes of Aguatic Ecosysten</li> <li>6)Appearance of Vastes</li> <li>7)Employment</li> <li>1)Atnospheric Pollution</li> <li>2)Noise and Vibration</li> <li>3)Changes to Terrestrial Ecosysten</li> <li>4)Changes of Distributed Population</li> </ul>				
Sorting Facilities and Storage Facilities 4.1 Cargo handling and Utilization of Storage Facilities . Inpact by Traffic	3)Hindrance to fishing operations         1)Atnospheric Pollution         2)Water Pollution and Sediment         Pollution         3)Noise level         4)Offensive odours         5)Changes of Aquatic Ecosysten         6)Appearance of Wastes         7)Employment         1)Atnospheric Pollution         2)Noise and Vibration         3)Changes to Terrestrial Ecosysten				

	Dis Nav		Location & Unit	Position	Remarks
1.	Uj.Pandang	1.	Tg.Agar-Agar	08-12-55. S	
	<b>.</b> .		- <b></b>	116-22-00. E	
		2.	Tg.Pakijongan	08-04-20. S	
				117-50-36. E	
		3.	P.Pulasi	06-40-15. S	
				120-20-52. E	
		4.	P.Banawaya	06-50-00. S	
		4.	f . Dallawaya	119-10-09. E	
0	Kendari	5.	Tg.Lamulu	04-41-00. S	
2.	Kenuari	5.	18. Lamara	121-28-00. E	
		c	P.Runduma	05-18-00. E	
		6.	P. Kundullia		
		_		124-18-20. E	
		Ζ.	Tg.Goram	04-51-00. S	
				123-12-00. E	1001 00
		8.	Moromaho	06-07-00. S	1991-92
				124-36-10. E	
		9.	Tg.Ulunabu	03-33-10. S	
				123-09-30. E	
		10.	Tg.Batumanuk	02-55-20. S	1992-93
				122-19-00. E	
3.	Ambon	11.	Tg.Woka	02-28-30. S	
			<u>v</u>	126-03-00. E	
		12.	Ug.Hatuloi	03-40-00. S	
		~~ ~ *	-0	126-48-10. E	
		13.	P.Ambelau	05-53-20. S	
		• • •		127-13-10. E	
		14.	P.Akelamo	01-39-00. S	1992-93
		14.	L'UKETANO	127-24-00. E	1996-9 <b>9</b>
		1 =	D. Domon		
		15.	P.Damar	07-04-40. S	
			<b>TF D</b>	128-26-30. E	1002 04
		16.	Kr.Borang	05-16-30. S	1993-94
			, 	133-14-55. E	
		17.	Wasela	08-12-40. S	
				129-50-00. E	
		18.	P.Manawoka	04-10-00. S	
				131-23-00. E	
		19.	P.Muor	00-10-30. N	
			н 	128-57-30. E	
	,	20.	P.P.Latalata	00-02-00. S	
				127-03-30. E	
		21.	P.Kaitanimbar	06-02-00. S	
				132-26-30. E	
		22,	P.Enu	07-05-00. S	1992-93
		<i></i>		134-30-00. E	
		23.	P.Molu	06-41-00. S	1993-94
		, L.J	I 11074	131-34-20. E	
		07	ma cafi	02-38-00. S	
		24.	Tg.Sofi		
		<u> </u>		128-33-30. E	1002 04
		25.	P.Dama	02-28-00. 5	1993-94
				127-37-00. E	
4.	Sorong	26.	P.Ayu	01-03-50. N	
				131-03-30. E	

# Appendix 6-1 Geographical location plan of Visual ATN

-472-

No.	Dis Nav		Location & Unit	Position	Remark
5.	Jayapura	27.	P.Bopondi	00-10-12. S	1993-9
			-	134-30-49. E	
		28.	Tlk.Materer	02-10-00. S	1992-9
				140-00-21. E	
6.	Merauke	29.	Tg.Salak	08-10-10. S	1993-9
			The second second second second second second second second second second second second second second second s	137-40-00. E	
7.	Kupang	30.	Tg.Kapondai	08-04-40, S	
				122-50-18. E	
		31.	P.Batek	09-16-00. S	
				123-59-30. E	
		32.	Tg.Mabuer	08-15-10. S	
			_	125-30-00. E	
		33.	P.Yako	08-25-10. S	
				127-20-10. E	
8.	Balikpapan	34.	P.Ambungi	02-04-30. S	
				117-16-00. E	
9.	Manado/Bitung	35.	P.Batunderang	03-20-00. N	
				125-30-36. E	
		36.	P.Kaburunang	03-45-00. N	1991-9
				126-51-00. E	
		37.	P.P.Nanusa	04-35-00. N	1992-9
				127-12-00. E	
		38.	P.Tifore	01-01-00. S	
				126-09-10. E	
		39.	P.Puludua	00-50-00. S	
				123-26-40. E	
		40.	Banggai	01-37-00. S	
	•			123-36-30. E	

(LARGE	LIGHT	BEACON	30	M)

			(LARGE LIGHT BEACON	30 M)	
No.	Dis Nav		Location & Unit	Position	Remarks
1.	Uj.Pandang	1.	P.Kapoposang Bali	07-30-00. S	1991-92
				117-10-06. E	
		2.	P.Sangeang	08-00-48. S	
				119-00-24. E	
		3.	Tg.Lameriki	04-10-00. S	1991-92
				120-20-18. E	
2.	Kandari	4.	Tg.Batu Turo	05-42-00. S	1991-92
			-	122-46-30. E	
		5.	P.L.Abengke	03-30-00. S	1992-92
				122-26-00. E	
		б.	P.Binongko	06-02-20. S	1991-92
				124-02-10. E	
3.	Ambon	7.	P.Seku	02-00-00. S	
				124-19-30. E	
		8.	Tg.Maluang	07-40-30. S	
				125-54-30. E	
	•	9.	P.Romang	07-30-30. S	
				127-22-30. E	
	5	10.	P.Nila	06-45-00. S	
				129-30-00. E	

). ·	Dis Nav		(LARGE LIGHT BEACON Location & Unit	N 30 M) Position	Remarks
· · · · · · ·	1712 MGA	<del></del>	DOCULTON & OUTC	TOSTLION	Nemat Ko
		11.	P.Wetan	07-53-00. S	
		:		129-21-00. E	
		12.	P.Nitu	07-29-00. S	
			<u> </u>	130-45-00. E	
		13.	Tg.Arousu	08-20-00. S	1992-93
				130-46-00. E	
		14.	P.Tioor	04-46-00. S	
		1 5	Ma Balifor	131-44-00. E	
		15.	Tg.Bolifar	03-09-00. S	
		16	Ta Norda	130-36-00. E	
	·	16.	Tg.Namda	02-47-30. S	
		1 7	To Dotumuha-	129-02-30. E	
		17.	Tg.Batunuhan	03-03-00. S	
		10	D. Torona	126-42-10. E	
		18.	P.Jorong	01-06-30. S	
		10	Ma Ialai	128-22-00. E	
		19.	Tg.Lelai	01-34-00. N	
			Ta Daha	128-43-00. E	1000 01
		20.	Tg.Bobo	01-02-50. S	1993-94
	Savara	0.1	D Do D	127-24-00. E	1000.00
4.	Sorong	21.	P.Bo Br	01-11-00. S	1992-93
		0.0	D. U	129-18-30. E	
		22.	P.Umera	00-12-00. S	
		0.0	D Varra	129-35-00. E	
		23.	P.Kawe	00-00-00. S	
			D. Camar -	130-06-00. E	
		24.	P.Sayang	00-29-30. S	
		0.5	Ma Man Su Sa	129-54-30. E	
		25.	Tg.Manfufa	01-13-00. S	
		~~	<b>m</b> . <b>b</b> . (	131-20-30. E	
		26.	Tg.Fatagpor	02-46-30. S	
		07	() - 11	131-55-40. E	
		27.	Tg.Nasu Ulong	04-06-40. S	1993-94
		0.0	<b>R</b> = 0 =1	131-00-30. E	
		28.	Tg.Saukorem	00-22-30, S	
		0.0	ma Managata t	132-44-00. E	
		29.	Tg.Namaripi	04-12-30. S	
5	Town	20	D Minol	134-30-36. E	
5.	Jayapra	30.	P.Mioslum	00-40-27. S	
			D Doo	134-30-15. E	
		31.	P.Ron	02-00-51. S	
6	Moraula	• •	Ittano C Vinterer	134-30-36. E	
6.	Merauke	32.	Utara S.Kuningan	06-20-00. S	
			Table	138-22-15. E	
		33.	Tg.Dolak	07-00-40. S	
		97	Ha Vomerst	138-00-06. E	
		34.	Ug.Komorat	08-20-06. S	
7.	Vupana	25	Poro Vorita	138-50-23. E	1000.00
•	Kupang	35.	Toro Kerita	08-50-06. S	1992-93
		26	Ba Varaa	119-50-30. E	1000 01
		36.	Tg.Karoso	09-30-15. S	1993-94
		27	Ma Valabara	118-50-36. E	1000 04
		37.	Tg.Kalobono	10-09-30. S	1993-94
	. 1			124-23-15. E	

			(LARGE LIGHT BEACON	N 30 M)	
No.	Dis Nav		Location & Unit	Position	Remarks
	<u></u>	38.	Tg.Fapara	09-24-00. S	
				125-12-00. E	
		39.	Tg.Beaso	08-56-40. S	1993-94
			-	126-28-00. E	
		40.	Tg.Atade	08-33-30. S	1993-94
				123-33-00. E	
8.	Manado/Bitung	41.	P.Manipa	03-43-00. N	1991-92
	_			125-19-00. E	
		42.	Tg.Batu Putih	01-42-20. S	1992-93
			-	122-54-15. E	
		43.	Tg.Api	00-48-20. S	1993-94
				121-39-00. E	
		44.	Tg.Salonggaka	04-02-40. S	1993-94
				126-36-40. E	
9.	Samarinda	45.	P.Bakungun	02-06-00. N	1992-93
			-	118-43-30. E	• •
10.	Benoa	46.	P.Sangang	08-00-48. S	1992-93
				119-00-24. E	
		47.	Torodoro	08-50-21. S	1993-94
				118-30-00. E	

(MEDIUM LIGHT BEACON 20 M)

No.	Dis Nav		Location & Unit	Position	Remarks
1.	Uj.Pandang	1.	Tg.Mangkun	09-00-00. S	
				116-40-27. E	
		2.	Torodoro	08-50-21. S	
				118-30-00. E	
		3.	Р.Моуо	08-20-06. S	
			(S.Saleh)	117-20-54. E	
		4.	Tg.Batu Besar	08-10-24. S	
				118-30-00. E	
		5.	P.Bunta	08-20-48. S	
				119-10-42. E	
		6.	Selat Tanakeke	05-30-30. S	1991-92
				119-20-33. E	
		7.	P.Lanyukang	04-50-48. S	1991-92
				119-00-27. E	
		8.	Tg.Selupolo	04-03-12. S	1992-92
				119-20-30. E	
		9.	Tg.Lameriki	04-10-00. S	
	· · ·			120-20-18. E	
2.	Kendari	10.	Tg.Tabako	03-25-30. S	
				120-46-40. E	
		11.	Tg.Tambako	04-44-00. S	
				121-40-00. E	
		12.	Tg.Kosolanatubi	05-17-40. S	1991-92
				123-12-00. E	
3.	Ambon	13.	P.Maru	06-54-30. S	
				131-27-00. E	
		14.	P.Team	05-04-00. S	
		. •	·	132-10-00. E	

••	Dis Nav		(MEDIUM LIGHT BEACO Location & Unit	Position	Remarks
	<u></u>	15.	0	05-25-00. S	1992-93
			(Mai)	127-47-30. E	
		16.	PP.Maisel	05-28-30. S	1993-94
		·		127-31-00. E	
		17.	Tg.Sial	03-33-20. S	1993-94
	•			127-56-00. E	
		18.	P.Tobalai	01-38-00. S	
				128-19-30. E	
		19.	Tg.Tokaka	00-12-30. S	
				127-21-30. E	
		20.	P.Makian	00-19-30. N	1993-94
				127-21-30. E	
		21.	P.Leleve	00-42-50. N	1992-93
		s		128-32-45. E	
		22.	Tg.Lolobata	01-16-00. N	
			<b>G</b>	128-05-30. E	
4.	Sorong	23.	P.Pensin	02-10-21. S	
••	0			130-10-36. E	
		24.	Daram	02-00-57. S	
				130-50-36. E	
		25.	Tg.Mabo	00-50-36. S	
			-0	130-20-20. E	
		26.	P.Augusts	00-40-06. S	1992-93
		en V *		130-30-20. E	
		27.	P.Karas	03-25-30. S	
		211	1. Maluo	132-36-36. E	·
5.	Jayapura	28.	P.Angrameus	02-20-03 S	
	Jayaputa	20.	r angraneus	134-20-33. E	
	,	20	P.Waren	02-10-12. S	
		29.	r.waten	136-00-48. E	
		20	P. Sorrok	136-00-48. E 00-20-00. S	1993-94
		30.	P.Sowok		1000-24
c	Manapalac	27	He Kumpur	134-40-10. E	
6.	Merauke	31.	Ug.Kumpur	07-10-06. S	
	17	2.0	De Dun J	138-40-05. E	
7.	Kupang	32.	Tg.Bundura	08-25-25. S	
				126-24-00. E.	1002 04
		33.	Tg.Parimbala	08-38-40. S	1993-94
		~ •		125-05-50. E	
		34.	P.Trewek	08-28-30. S	-
				124-16-18. E	1000 01
		35.	Tg.Batu Putih	09-03-00. S	1993-94
				124-41-20. E	1000 01
		36.	Tg.Bobo	08-56-10. S	1993-94
				121-03-00. E	
		37.	P.Mangudu	10-10-56. S	
				120-00-52. E	
		38.	Tg.Pukuatu	10-26-00. S	1993-94
				123-22-00. E	
		39.	P.Bunta	08-20-48. S	1993-94
				119-10-42. E	
8.	Manado/Bitung	40.	Tg.Losoni	02-20-00. S	1992-93
			-	122-01-30. E	
		41.	Tg.Kembani	01-35-00. S	1991-92

No.	Dis Nav		(MEDIUM LIGHT BEACON Location & Unit	V 20 M) Position	Remarks
9.	Benoa	42.	Tg.Batu Besar	08-10-24. S 118-30-00. E	1992-93
			(SMALL LIGHT BEACON	10 M)	
lo.	Dis Nav		Location & Unit	Position	Remarks
1.	Ug.Pandang	1.	S.Batakai	08-00-48. S	
	-00			117-40-06. E	
		2.	P.Ngali	08-20-57. S	
		^		117-40-24. E	
		3.	P.Pakyet	08-30-42. S	
		4.	P.Komodo	117-50-42. E 08-20-39. S	
	н. -	** •		119-20-33. E	
		5.	P.Panjang	08-20-45. S	
			3 0	116-50-06. E	
		6.	P.Belang	08-30-15. S	
				116-40-42. E	
		7.	Tg.Baru	08-50-12. S	
				119-10-06. E	
		8.	Tlk.Cempi	08-40-36. S	
		9.	Tg.Batu Gendang	118-20-12. E 08-40-45. S	
		7.	ig.balu bendang	115-40-57. E	
		10,	Tlk.Awang	08-50-45. S	
			0	116-20-18. E	
		11.	Tlk.Sanggar	08-20-03. S	
				118-10-42. E	
		12.	P.Tinggi Linggang	07-00-12. S	
			D. I. T.	118-00-18. E	
		13.	P.Longko Itang	06-40-09. S 118-10-45. E	
		14.	Kr.Satunggai	07-30-15. S	
		1.47 .	KI . Satunggai	118-00-00. E	
		15.	P.Jai Lamo	06-30-27. S	1991-92
			(K.U.)	118-50-00. E	
	•	16.	Tg.Labuah	05-20-03. S	
				120-20-25. E	
		17.	Tg.Lasa	05-30-45. S	1992-93
		10		120-20-48. E	1001 00
		18.	P.Belong-Belong	06-20-24. S 121-00-33. E	1991-92
		19.	KR.Korea Selatan	121-00-55. E 04-30-48. S	
		- <del>-</del>	MUNUTER DETRIGIT	120-30-45. E	
		20.	Yg.Loko-Loko	03-40-12. S	
			<b></b>	120-20-39. E	
		21.	Tg.Lombone	03-00-30. S	
			_	118-40-42. E	
		22.	Tg.Kai	02-50-12. S	1991-92
			C	118-40-36. E	1000 00
		23.T	fg.Larereh	01-50-54. S	1992-93

0.	Dis Nav		Location & Unit	Position	Remarks
		24.	P.Langkai	05-10-48. S	
		•		119-05-48, E	
		25.	P.Karangrang	04-51-30. S	
				119-23-13. E	
		26.	P.Barang Lompo	05-02-55. S	
			:	119-19-45. E	
		27.	P.Samateloraya	04-42-42. S	
				119-20-42. E	
2.	Kendari	28.	Kr.Wawo	03-40-00. S	
				120-51-30. E	
	,	29.	Kr.Tlk.Waminda	03-52-00. S	
				121-00-00. E	
		30.	Kr.Rosamarie	04-05-00. S	
				121-08-30. E	
		31.	P.Maniang	04-12-00. S	
			-	121-28-00. E	
		32.	Sofang	04-44-00. S	
			0	121-32-00. E	
		33.	Kr.Sogori	05-23-00. S	
		-	<b>3</b>	121-44-00. E	
		34.	Tg.Talabasi	05-14-00. S	
		5	-g-rurupuon	122-04-00. E	
		35.	Tg.Wetak	05-23-30, S	
		551	rginecult	122-16-30. E	
		36.	Tlk.Kaluku	05-08-30. S	
		50.	TIK KATOKU	123-01-10. E	
		37.	Kapota	05-29-30. S	
		57.	Kaputa	123-22-00, E	
		20	Kr.Kota		
		38.	KI .KOLA		
		20	V. V. L. Luna		
		39.	Kr.Kalelupa	05-50-00. S	
			<b>TP</b>	123-37-30. E	
		40.	Kr.Kentiole	05-43-00. S	
				124-29-20. E	
		41.	Tg.Babu	04-56-00. S	
				123-00-00. E	
		42.	Tg.Womoni	04-16-00. S	
			_	123-08-00. E	
		43.	Kolono	04-25-00. S	
				122-52-30. E	
		44.	Tg.Saponda	04-04-00. S	
			Selatan	122-49-00. E	
		45.	Tg.Sawak	03-45-30. S	
				122-26-30. E	
		46.	PP.Dua	03-16-00. S	1991-92
				122-31-30. E	
3. Ambon	Ambon	47.	P.Limbo	01-46-00. S	
				124-18-00. E	
		48.	Tg . Kona	01-56-30. S	
				125-00-00. E	
		49.	Tg.Batukapitani	01-57-00. S	
				125-25-30. E	
		50.	P. Tabuku	01-46-00. S	
				125-31-30. E	

io.	Dis Nav		(SMALL LIGHT BEACON Location & Unit	Position	Remarks
		51.	Tg.Pelpetu	03-07-00. S	
			0 *	126-06-00. E	
		52.	Tg.Walwawat	03-36-20. S	
			-0	126-11-00. E	
		53.	Tg.Wamsisi	03-46-00. S	
			-8	126-57-00. E	
		54.	Tg.Saroma	03-39-30. S	
			-8	127-13-00. E	
	· ·	55.	Tg.Kayu Putih	03-23-00. S	
			-8	127-15-30. E	
		56.	P.Boano	03-01-30. S	
				127-41-00. E	
		57.	Tg.Nusa Telu	03-41-00. S	
			-8	127-55-30. E	
		58.	P.Gomumuh	01-51-00. S	
				127-35-00. E	
		59.	Tg.Pasi Item	01-11-00. S	
				127-32-00. E	
		60.	P.Obilatu	01-25-00, S	
				127-16-00. E	т.
		61.	Tg.Gegoru	00-45-00. S	1992-93
		<b>v</b> ±	-8.005014	127-10-00. E	
		62.	Tg.Silang	00-52-00. S	
		04.	+ B + D I I GILB	127-44-30, E	
		63.	P.Miskin	00-09-00. N	
		03.	I +HIJALII	127-26-00. E	
		64.	P.Kusu	00-27-30. S	
		04.	I . Rubu	127-42-00. E	
		65.	P.Batu Sombo	00-18-00. S	
		0.0.1	L.Bacu Jonibo	127-33-30. E	
		66.	P.Rao	02-38-00. S	
	·	00.	I MAV	128-09-30. E	
		67.	P.P.Lalodu Selatan	01-41-30. N	
		07.	I.F. Dalvau Selatali	127-30-30. E	
		68.	Tg.Wayumli	01-04-00. N	
		00.	rg. way cuirt	128-41-45. E	
		69.	P.Sayafi	00-32-30. N	
		09.	1.Jayalı	128-49-00. E	
		70.	Tg.Inggelang	00-33-00. N	
		70.	-P. THERETUNE	128-40-30. E	
		71.	Tg.Libobo	128-40-30. E 00-44-00. S	
		/ 1 •	18.010000	128-26-40. E	
		72.	P.Pisang	01-23-30. S	
		14.	2 . 1 1 3 a lig	128-55-00, E	
		73.	TG.Saml	02-06-00. S	
		12.	10. Jamt	129-51-30. E	
		7%	Tg.Seitu	03-27-00. S	
		74.	18.96100	129-33-30. E	
		76	The Caradona		
		75.	Tg.Saradona	08-09-30. S	
		76	D: Vnoo	128-08-00. E	
		76.	P.Kasa	03-10-48. S	
		77	Tg.Tihulate	128-00-53. E	
		77.	ig.Tinulate	03-27-00. S	

No.	Dis Nav	(SMALL LIGHT BEACO Location & Unit	N 10 M) Position	Remarks
	78.	P.Haruku	03-37-30. S	
			128-25-00. E	
	79.	P.Parang	03-19-00. S	
			130-47-00. E	
	80.	Kr.Bajs	02-55-00. S	
			130-26-00. E	
	81.	P.Besar	02-44-10. S	
			128-59-00. E	
	82.	Tg.Pamali	02-48-00, S	
		-	129-22-00. E	
	83.	P.Dawora	00-51-00. S	
			128-00-48. E	
	84.	Tg.Silota	00-17-00. N	
	•	0	127-55-00. E	
	85.	P.Sukar	00-33-30. S	
		. –	128-18-30. E	
	86.	Tg.Babua	01-01-00. S	
		0	127-28-00. E	
	87.	Tg.Jojefa	02-11-30. N	
		0J	128-03-30. E	
	88.	P.Tonu	01-47-30. S	
		-,	128-00-00, E	
	89.	P.Kolorai	01-40-00. N	
	09.	I .NVIVIUA	128-02-30. E	
	90.	P.Kiliwaru	03-53-30. S	
	50.	I HILLAINGLU	130-53-00. E	
	91.	P.Run	04-34-00. S	
	91.		129-40-30. E	
	92.	Tg.Weduak	06-03-00. S	
		18 - HOULUAR	132-50-00. E	
	93.	P.Runuat	05-49-00. S	
	93.	(S.Nerong)	132-49-35. E	
	94.	(S.Merong) Kr.Mitnaloa	05-35-55. S	
	94	Kr • Mr Challva	132-58-30, E	
	95.	P.Sermata	08-13-00. S	
	yo.	r.oermala	139-00-00. E	
	96.	Vr. Vruc	05-34-43. S	
	¥0.	Kr.Krus	131-39-50. E	
	A7	Kr Nacf		1993-94
	97.	Kr.Ngaf	05-37-30. S 132-39-50. E	1222-24
	00	Vr Datilman	132-39-50. E 05-43-55. S	
	98.	Kr.Patilmas	03-43-55. S 132-36-45. E	
	00	D Toron	132-36-45. E 05-47-50. S	
	99.	P.Taroa	(a) A set of the se	
	* ^ ^	Ma Matat	132-37-00. E	
	100.	Tg.Matot	05-32-35. S	
			132-23-10. E	
	101.	Tg.Arat	05-54-30. S	
		m 11.1.1	132-39-25. E	
	102.	Tg.Wakadan	01-37-50. S	
			133-04-35. E	
	103.	P.Wasir	05-29-20. S	
		·	134-14-00. E	
	104.	Tg.Ngabordamlu	06-56-25. S	
			134-11-05. E	

	Dis	Nav	(SMALL LIGHT BEACC Location & Unit	Position	Remarks
		105.	P.Arakula	05-35-45. S	
			w a 1111	134-46-10. E	
		106.	Kr.Sarikilmasa	07-39-00. S	
		107.	P.Sukeler	131-43-45. E 07-38-10. S	
		T01.	r.buketer	130-56-40. E	
		108.	P.Prinoen	07-02-40. S	
				131-34-00. E	
		109.	P.Parnusan	07-04-50. S	
				131-39-10. E	
		110.	Kr.Noekaha	07-03-00. S	
				132-02-00. E	
		111.	Tg.Letwurung	07-54-30. S	
		112.	Tlk.Lelang	129-50-06. E 08-15-00. S	
			TTY TETRIK	128-56-00. E	
		113.	Tg.Solat	07-10-40. S	1993-94
			-0	128-41-00. E	** ** ** ** *
		114.	Tlk.Pumuhkuda	07-36-00. S	
		-	1999 - A.	127-25-00. E	
		115.	Tlk.Tg.Eden	07-58-00. S	
				126-24-00. E	
4. So	rong	116.	P.Senapan	00-54-20. S	
		117	PP.Menon	131-02-30. E	
		117.	PF, Menon	01-21-20. S 130-42-57. E	
		118.	Tg.Tapokreng	00-26-25. S	
			- <b>0</b> , - <b>ub</b> , -u <b>b</b>	130-44-15. E	
		119.	P.Ifinun	01-08-48. S	1993-94
				130-33-48. E	
		120.	P.Sangewin	00-56-25. S	
				130-48-10. E	
		121.	Kr.Elanglaut	01-20-12. S	
		122.	Kr.Tg.Babula	130-30-18. E 00-24-20. S	
		122.	KI.Ig.Dabula	130-56-40. E	
		123.	P.Waiabu	00-20-40. S	
				130-57-10. E	
		124.	P.Filsytour	00-18-30. S	
			4	130-54-45. E	
		125.	P.Waiwali	00-19-30. S	
			Ma Missari	130-52-20. E	
		126.	Tg.Mingari	02-10-24. S 132-50-42. E	
		127.	Kr.Tlk.Bintuni	132-50-42. E 02-18-00. S	
		161 +		133-37-05. E	
		128.	Tg.Kausore	02-23-18. S	
			-	133-50-40. E	
		129.	P.Amutu Kecil	02-29-45. S	
				133-37-55. E	
		130.	P.Barat	02-36-35. S	1993-94
		1.01	(Tlk.Bintuni)	132-23-20. E	
		131.	Tg.Dore	00-43-55. S 131-32-30. E	
					· .
			-481-		

No.	Dis Nav	• •	(SMALL LIGHT BEACON Location & Unit	10 M) Position	Remarks
		132.	Tg.Sawasar	00-39-10. S	
		133.	Tg.Sofa	131-54-15. E 00-07-00. N	
		2001	*8.0010	129-15-12. E	
		134.	Timur Tg.Uaim	00-43-00. S	
				131-32-30. E	
		135.	P.P.Kasya	00-20-08. N	
		136.	Kr.Tg.Sari	131-00-29. E 01-59-00. S	
		2001		133-33-30. E	
		137.	P.Urobi	04-03-40. S	
				132-20-45. E	
		138.	Kr.Madais	03-37-30. S	
		139.	P.Mios Ging	133-36-00. E 00-24-20. S	
			* orne	129-44-30. E	
	1	140.	P.Batu Putih	03-56-00. S	1992-93
				131-57-12. E	
		141.	Kr.Tg.tubok Matan	03-06-00. S	
		142.	Tg.Maniam	132-18-00. E 03-30-50. S	
		142.	16 Hanitan	132-40-35. E	
		143.	Tg.Kainara	04-06-10. S	
				133-18-30. E	
		144.	P.Segin	03-52-30. S	
		145.	P.Lanjaro	133-55-10. E 03-55-20. S	
				133-59-30. E	
		146.	Tg.Aiduma	04-02-00. S	
		<b>1</b> / 73		134-11-10. E	
		147.	P.Kayumerah	04-06-00. S 134-26-50. E	
		148.	Tg.Bohia	134-26-50. E 01-06-50. S	
				134-37-30. E	
		149.	Tg.Sansapor	00-30-00. S	
		150.	The Ciam	132-04-20. E	
		120.	Tg.Siam	00-14-30. S 130-47-50. E	
5. 3	Jayapura	151.	P.Wansra	01-00-48. S	
				134-50-12. E	
		152.	P.Mios Indi	01-20-54. S	
		153.	P.Yobi	135-50-48. E 01-40-24. S	
		100.	1.1001	01-40-24. S 136-30-54. E	
		154.	Tg.Praisbari	00-40-30. S	•
,			ente dia di	135-49-00. E	
		155.	Tlk.Wari	00-51-10. S	
		156.	Tg.Wantiori	136-03-00. E 01-02-00. S	
			O	136-17-30. E	
		157.	PP.Ponokabai	01-30-00. S	1993-94
		160	m - 01 - 1 1 1	135-22-10. E	
		158.	Tg.Sherisbari	01-05-40. S 135-48-30. E	

.•

No. Dis Na	v	(SMALL LIGHT BEACO Location & Unit	Position	Remarks
	159.	P.Nu Tabari	03-06-30. S	
			135-09-20. E	
	160.	PP.Kuran	01-53-30. S	
	2001		135-48-40. E	
	161.	Kr.Tydeman	02-08-30. S	
			135-11-40. E	
	162.	Utara Nusambier	01-52-50. S	
	1021		134-48-40. E	
	163.	P.Wandoswaar	02-00-00. S	
	2001	2 • Holldoonaal	134-24-40. E	
	164.	Kr.Isabel	00-29-50. S	
	104.	MI + 19aber	135-14-20. E	
	165.	PP.Moor	02-50-36. S	
	103.	11.4001	135-40-12. E	
	166,	Ta Tanah Morah	02-23-36. S	
	T00,	Tg.Tanah Merah	140-21-00. E	
	167.	P.Kelapa	02-26-12. S	
	107.	riketapa	140-36-48. E	
	168.	P.Dayuer	02-08-12. S	
	100.	r.bayder	139-31-00. E	
	169.	P.Yamma	02-01-00. S	
	105.	I I I I MAIRI	129-14-48. E	
	170.	PP.Wakdeh	01-56-00. S	1993-94
	110,	11 manuell	139-01-24. E	1990-94
	171.	Tg.Mataboreh	01-32-00. S	
		ig.macaboren	139-59-24. E	
6. Merauke	172.	Tg.Owaiwiri	04-52-00. S	
of Herauke	272.	ig.owaiwiii	136-46-20. E	
	173.	S.Digul	07-10-00. S	1992-93
	175.	0.Digui	139-00-00, E	1992-93
	174.	P.Gosong Triton	05-50-24. S	1993-94
	1/4.	1.0030ing friction	138-00-36. E	T 2 2 2 - 24
7. Kupang	175.	Iliwariran	08-14-00. S	
, i inspiring	2701	and areas	123-22-00. E	
	176.	Batutara	07-47-00. S	
	1701	bucuturu	123-36-00. E	
	177.	P.Biang Merang	08-27-10. S	
	an ( ) .		123-56-40. E	
	178.	P.Dao.Br	10-48-10. S	
			122-39-00. E	
	179.	P.Sukur	08-06-40. S	
	±.,,,	- · · · ·	122-07-00. E	
	180.	P.Raja	08-18-00. S	
			121-43-30. E	
4	181.	P.Dana	10-49-30. S	
			121-17-00. E	
	182.	P.Seraya Besar	08-22-00. S	
			119-52-00. E	
	183.	Tlk.Malekaba	09-58-00. S	
			119-55-00. E	
	184.	Ketewil	09-21-30. S	
	- 		119-17-30. E	
	185.	P.Gelinta	08-54-30. S	
			120-17-00. E	

-483-

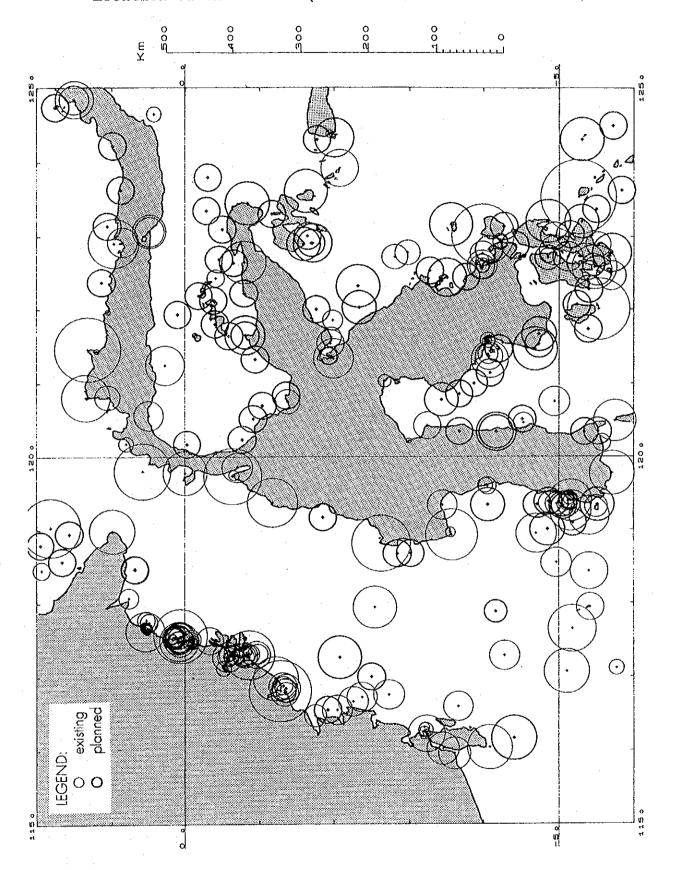
ο.	Dis Nav		(SMALL LIGHT BEACON Location & Unit	10 M) Position	Remarks	
		186.	Tg.Yarakeh	08-53-30. S 120-45-00. E		
		187.	P.Padar	08-40-00. S 119-33-00. E		
		188.	P.Nusaenda	08-50-30. S 121-31-30. E		
		189.	Tg.Batumanuk	08-26-30. S 122-01-30. E		
		190.	P.Pulubesar	08-27-00. S		
		191.	P.Kaliwatu	08-27-30. S		
		192.	Tg.Suda	122-57-30. E 08-32-00. S		
		193.	P.Ternate	123-12-30. E 08-21-00. S		
		194.	Tg.Manamonik	124-32-00. E 08-09-00. S		
		195.	Tg.Batuata	125-04-30. E 09-37-00. S		
		196.	Tg.Mas	120-28-30. E 09-39-00. S		
		197.	Tg.Meliboot	123-40-30. E 09-08-30. S		
		198.	Tg.Batu Putih	125-49-00. E 08-45-30. S		
		199.	P.Timur Ipet	126-49-00. E 08-05-30. S		
		200.	- Tg.Rua	123-20-00. E 09-47-30. S		
8.	Balikpapan	201.	Kr.Batumeha	119-24-00. E 01-55-00. S		
0.	barrinpapan	202.	Kr.Unatang	116-33-00. E 02-30-00. S	1993-94	
0	Samarinda	202.	P.Birah Birahan	117-00-12. E 00-41-40. N	1992-93	
9.	Samarinua			118-27-45. E 01-33-30. N	1992-93	
		204.	Kr.Bilang Bilangan	118-56-30. E		
		205.	P.Bakungan	02-06-00. N 118-43-30. E		
		206.	Kr.Balik Tabah	02-35-03. N 118-00-06. E		
		207.	Tg.Bilah	03-55-00. N 117-17-10. E		
		208.	Kr.Nunukan	03-57-00. N 116-52-00. E		
		209.	P.Sebetik Barat	04-09-30. N 117-53-20. E		
		210.	P.Sebetik Timur	04-09-30. N 117-53-20. E		
		211.	Gosong Karang	01-39-15. N 118-34-00. E		
		212.	Kr.Gosungara	01-57-00. N 118-47-30. E		

ο.	Dis Nav		(SMALL LIGHT BEACON Location & Unit	Position	Remarks
10.	Manado/Bitung	213.	Kr.Tg.Damari	01-45-30. S	······································
			0	122-00-00. E	
		214.	Tg.Batu Puti	01-41-20. S	
			0	122-54-15. E	
		215.	Bangkalan Utara	01-09-25. S	
				123-18-00. E	
	· ·	216.	P.Mentawatudaa	00-30-10. S	
				123-05-30. E	
		217.	Kr.Tg.Batu Hitam	00-39-00. S	
			6	122-38-00. E	
		218.	Tg.Pongian	00-47-20. S	
			-88	122-13-00. E	
		219.	Kr.Utara P.Popoli	00-11-00. S	
	:		F	122-11-00. E	
		220.	P.Pasir Tengah	00-35-25. S	
				121-38-20. E	
		221.	Tg.Api	00-48-20. S	
		•••••	-0	121-39-00. E	
		222.	Tg.Maburoto	00-56-15. S	
			ig.nabaroco	121-19-30. E	
	•	223.	Tg.Karawasa	01-21-00. S	
		LLJ.	ig•Matawa3a	120-50-00. E	
		224.	Kr.Latenga	01-02-00. S	
		447 .	Kt . Datenga	120-41-50. E	
		225.	Kr.Utara Tg.Samsu	00-54-40. S	
		663.	Ri.otara ig.Jamsu	120-31-00. E	
		226.	Vr To Makatata		
		220.	Kr.Tg.Makatata		
		997	Kr.Pasimunto	120-14-00. E	
		227.	KI.FASIMUNTO	00-01-30. S	
		220	To Doniona	120-10-10. E	
		228.	Tg.Panjang	00-24-20. S	
		220	V- Ditilo	121-48-00. E	
		229.	Kr.Bitila	00-23-00. S	
		010		122-07-10. E	
		230.	Tlk.Paguyama	00-2/-30. S	
		0.01	Ma Mambalitet	122-41-00. E	1002 01
		231.	Tg.Tombalilatu	00-17-20. S	1993-94
		000	Ma Dominante	123-20-40. E	
		232.	Tg.Dominango	00-18-30, S	
		000	m11. D.1	123-47-30. E	
		233.	Tlk.Peleng	01-38-15. S	
		0.04	П	123-00-05. E	
		234.	Tg.Konjai	00-06-20. N	
			i ar a d'att	121-55-40. E	
		235.	Kr.Bulolio	01-08-15. N	
		0.0.5		122-21-50. E	
		236.	Kr.Bangkili	01-03-45. N	1991-92
				123-08-00. E	
		237.	P.Tiga	00-53-00. N	
				123-37-20. E	
		238.	Tg.Lobi	00-59-30. N	1991-92
				124-13-00. E	
			n 11 -		
		239.	P.Matereu	01-45-00. N 124-44-00. E	

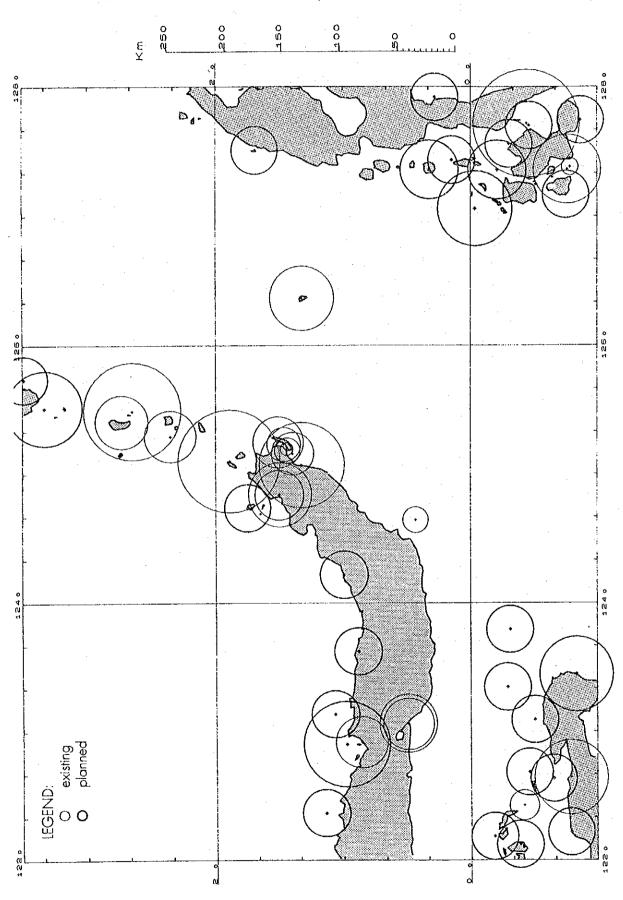
.

			(SMALL LIGHT BEACON		
No.	Dis Nav		Location & Unit	Position	Remarks
	<u></u>	240.	P.Benglaoet	03-29-30. N	1992-93
				125-44-00. E	
		241.	Tg.Lehe	03-36-50. N	
			0	125-35-45. E	
		242.	Tg.Salonggaka	04-02-40. N	
			0 00	126-36-40. E	
		243.	Tg.Mananantoleh	04-02-00. N	
			0	126-48-45. E	
	24	244.	Tg.Totowantan	04-16-10. N	
			-0	126-55-00. E	

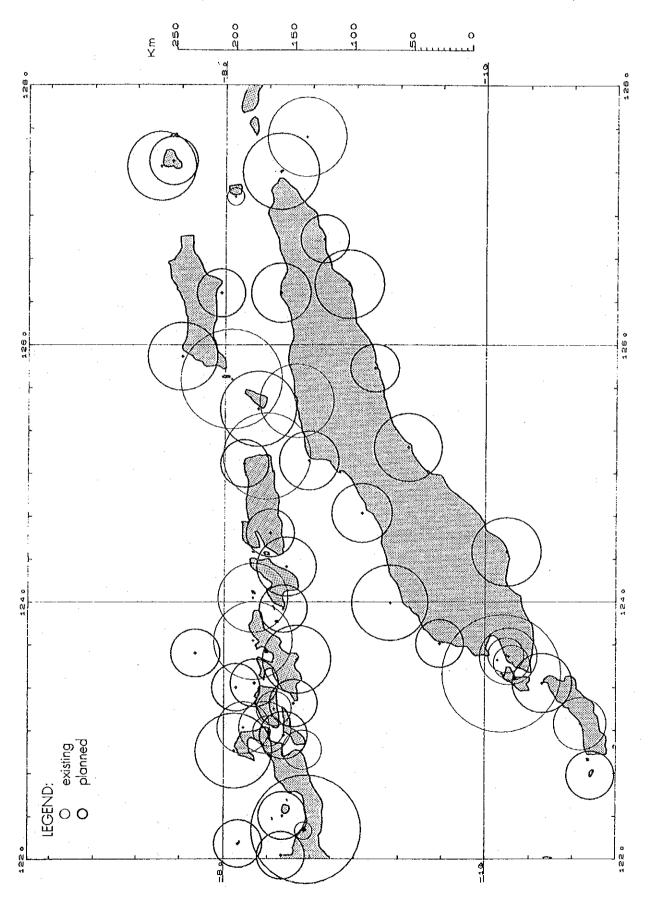
-486-



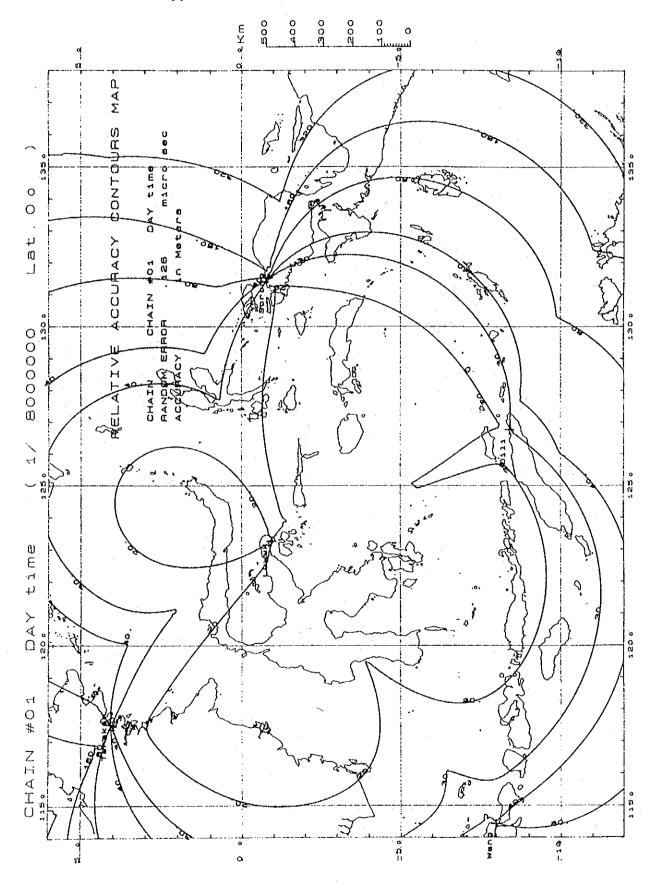
Location of Visual ATN (Makkassar, 1/350,000 Lat. 00)



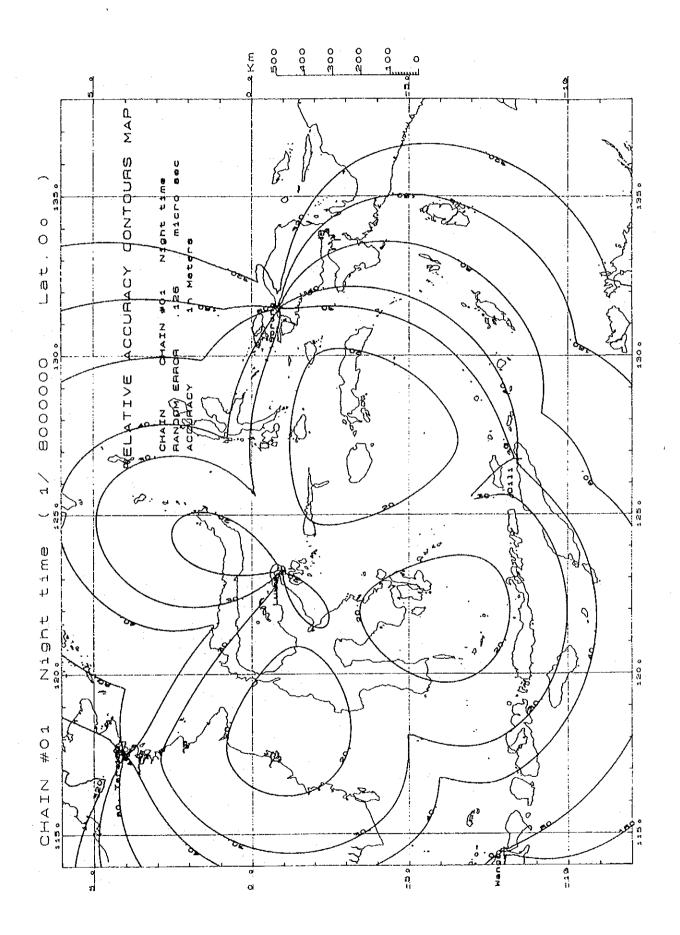
Location of Visual ATN (Bitung, 1/200,000 Lat. 00)

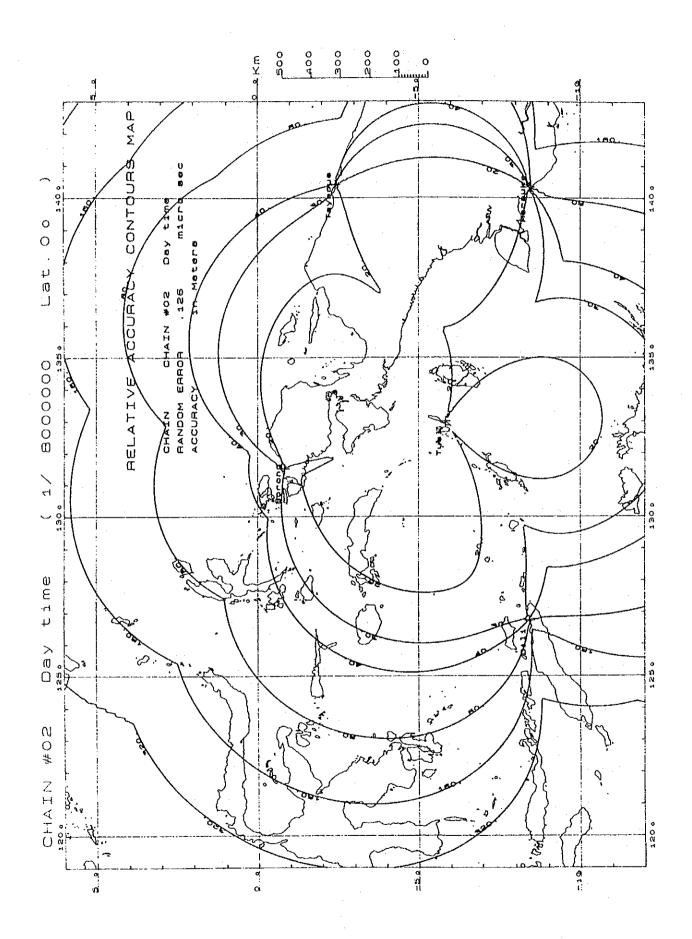


Location of Visual ATN (Kupang, 1/200,000 Lat. Oo)

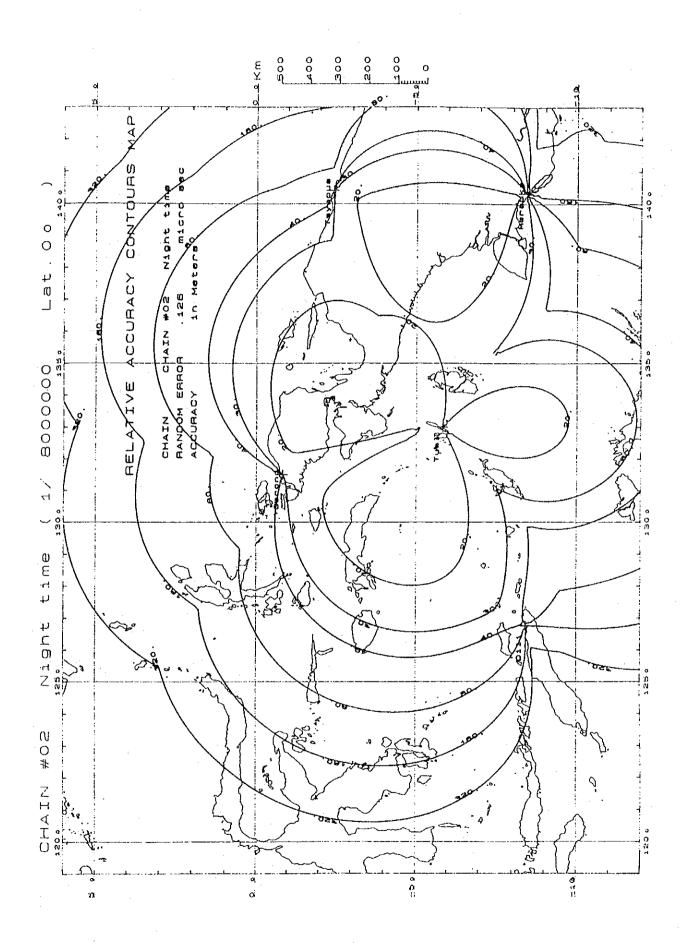


Appendix 6-2 Loran-C System Allocation Data





-492-



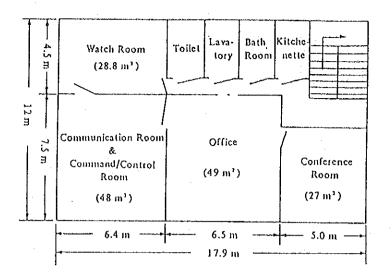
-493-

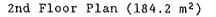
Appendix 6-3 Equipment List and Building Design for A Special Rescue Team

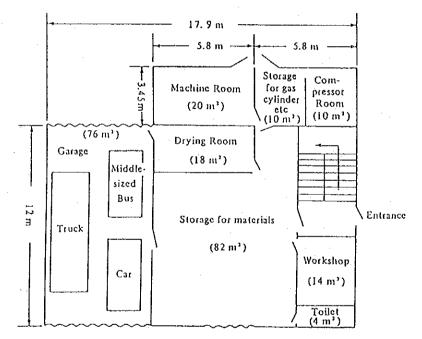
Equipment Item	Quantity	Remarks
DIVING RESCUE EQUIPMENTS		
High Pressure Air Compress	or 2	A compressor to recharge a cylinder with air for breathing
Underwater Light	20	
Air Hose	4	A hose to feed air into capsized ships
Aqua Lifter (3 tons)	6	A air balloon for prevention of sinking
Aqua Lifter (1 ton)	4	and lifting of heavy materials in water
Underwater Riveter	2	
Manometer	4	To measure pressure of air in a cylin- der
Life Raft	2	
Aqua Speaker	2	To direct instructions to a diver in
indian obtaining	_	water
Aqua Camera	. 4	· · ·
Underwater Cable TV	4	To monitor underwater circumstances
		from a ship
Large Buoy	10	•
Small Buoy	20	
Thin Rope	1	6mm in diameter and 400m in length
Middle Rope	2	12mm in diameter and 200m in length
Thick Rope	2	20mm in diameter and 200m in length
Anchor	4	10kg in weight
Aqua Note	20	A writing board in water
Aqua Bag	20	
DIVER'S EQUIPMENTS		
	•	
Mask	20	
Snorkel	20	
Fins	20	
Harness	20	To fix and shoulder a diving cylinder
Regulator	20	To breathe air from a diving cylinder
Navy Knife	. 20	
Sea Gauge	20	
Scuba compass	20	
Scuba Watch	20	
Wet Suit	20	
Dive Boots	20	
Dive Glove	20	
Tank Block	40	Inclusive of valve
RANGER'S TRAINING EQUIPMEN	TS	
Ranger Rope	10	
Climbing Rope	4	
Helmet	20	
Big Carabiner	40	A steel ring to arrange ropes while
Small Carabiner	80	descending and ascending
Tie Band	20	To support a ranger while descending
		and ascending
Double Pulley	20	
Portable Winch	4	

Equipment Item	<u>Quantity</u>	Remarks
Engine Cutter	2	
Decompress Type Stretcher	2	
Skid Strecher	2	
Resuscitator	4	With a spare cylinder
First Aid Kit	5	
Walky-Talky	8	1W type
Walky-Talky	2	10W type
	4	Usage for wide luminous illuminat
Portal Light	-	A rewindable steel rudder
Caving Rudder	4	A rewindable sceet rudder
Line Project Gun	2	
RESCUE EQUIPMENTS UNDER FL	AMING AND D	DANGEROUS SITUATION
Life Gem Apparatus	20	For self-breathing
Oxygen Cylinder	40	A capacity of 8 liters
Fire Proof Cloth	20	
Poison Proof Cloth	20	
Oxygen and Flammable Gas D	itector	
500	4	•
Explosion Proof Light	20	
TRANSPORTATION		
Track with Crane	1	
COMMUNICATION EQUIPMENTS		
Digital Multiplex Radio	2	TDMA relay station and
equipments (including		branch station
parabolic antennae)		
· ·		
Emergency generator	1	Electric source 7.5 KAV
(including shelter)		· · · · · · · · · · · · · · · · · · ·
(including shereer)		
Communication operating	1	II type
console		
consore		
Telephone and auxiliary	5	
	v	
equipments		
Toletamormiton and	1	
Teletypewriter and	1	
auxiliary equipments		
Antenna Tower (including	2	Relay station and branch
. –	_	station
light and lightning rod)		

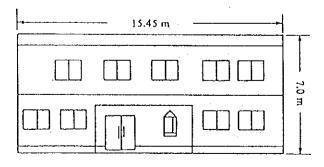
.







1st Floor Plan (254.8 m<sup>2</sup>)



Side View

## Building Design of Special Rescue Station (scale 1:200)

-496-

#### Appendix 6-4 Cost Estimation for ATN Development

(Unit: Rp\*1,000)

1. Lighthouse (40M) Total: 1,442,000 (a) Light tower (Steel)(b) Lantern house 356,000 257,000 386,000 (c) Revolving system (d) Lamp changer 46,000 (e) Light controller 70,000 (f) Power generator system 257,000 (g) Cables, accessories and spares 70,000 2. Light beacon (30M) Total: 535,000 (a) Light tower (Steel) 257,000 (b) Lantern house 70,000 (c) Revolving lense 79,000 (d) Solar power system 109,000 (e) Cables, accessories and spares 20,000 3. Light beacon (20M) 277,000 Total: (a) Light tower (Steel) 158,000 (b) Lantern 20,000 (c) Solar power system 89,000 (d) Cables, accessories and spares 10,000 4. Light beacon (10M) Total: 230,000 (a) Light tower (GRP) 158,000 (b) Lantern 16,000 (c) Solar power system 50,000 (d) Cables, accessories and spares 6,000 5. Light buoy Total: 177,000 (a) Buoy body with mooring system 119,000 (b) Lantern and power system 42,000 (c) Accessories and soares 16,000 6. Radar beacon 199,000 Total: (a) X/S band radar beacon 129,000 (b) Solar power system 50,000 (c) Cables, accessories and spares 20,000 7. Loran-C System (64HCG) (a) Master station Sub-total 29,810,000 - Transmitter equipment 21,430,000 - Chain control equipment 4,079,000 - Power supply system 1,798,000 - Antenna system 2,503,000 (b) Secondary station per each Sub-total 24,293,000 - Transmitter equipment 19,992,000

- Power supply system 1,798,000 - Antenna system 2,503,000

(c)	Chain control station - Control equipment	4,079,000
(d)	Monitor station Sub-total	748,000
	- Monitor equipment - Power supply system - Antenna system	540,000 138,000 70,000
(e)	Spares Sub-total - Transmitter station equipment per chain	9,244,000 7,843,000
	<ul> <li>Chain control station equipment</li> <li>Monitor station equipment</li> <li>Power supply system</li> </ul>	540,000 169,000 692,000

To introduce Loran-C System in Eastrn Indonesia, the configuration of stations in each grade is planned as follows:

Su	lawesi Chain	<u>Irian Jaya Chain</u>
Master Station	1	1
Secondary Station	4	2
Chain Control Station	1	1
Monitor Station	2	2
Spare Kit	1.	1.
Total Amount(Rp. mil.)	141,801	93,215

### 8. Vessel Traffic Service (VTS)

(a) Surabaya control station Sub total

Consist of:

- High resolution radar

- Radar console

- Data terminal
- Information processor
- Remote radar control
- Microwaye link
- TV camera
- Power supply
- (b) Sembilangan Radar station Sub total
  - Consist of:
  - High resolution radar
  - TV camera
  - Microwave link
  - Power supply

(c) Karang Jamuang Radar station

Total: 78,901,000

50,262,000

12,220,000

#### Sub total

•

Consist of:

- High resolution Radar
- TV camera
- International VHF
- Weather observation unit
- VHF direction finder
- VHF transmitter Microwave link
- Power supply

Radio ATN syatem	System description	Purpose	Accuracy and Range	Advantages(A) / Disadvantages(D)
Radar Beacon (racon)	One of transponder system for marine radar which is installed on board. It is able to display cardinal position of ship on the Radar display. Operation frequency band is 9300-9500 mHz(X band) or 2900-3100 mHz(S band). Some racons offer combined service in both bands. Usually it is installed on existing facility.	Bearing to racon station	Dependent on Radar resolution Usually, less than±1 Deg.	<ul> <li>(A) No special equipment needed, if radars are available on board.</li> <li>(D) Only vessels carrying radar on board.</li> <li>(A) Basy maintenance, small unit, and solar source are available.</li> </ul>
Medium Wave Radio Beacon (MWRB) Rotating patt- ern radio bea- con.	MWRB operates in the 285 kHz to 325 kHz frequency band. The transmitted signal consists of two different moduration frequencies to make keying signal. Firstly, station ID signal and "A" signal are transmitted continuously, then keyed dods signal is also transmitted to provide the identifying bearing from station. Bach minute the code is interrupted by a 10-second dash to allow mariners to refine their bearing from station. Bearing is found by counting dots from beginning to a dip point during a series of dots train.	Bearing from MWRB station	System resolution is ±3deg. or more. Up to 50nm from station	<ul> <li>(D) Special receiver needed.</li> <li>(D) Only one lop available from a station.</li> <li>(A) If two or more beacons are available, a fix may be obtained.</li> </ul>
Differential Omega (DF)	Large area coverage systems such as OMEGA may have variance from a predicted grid established for navigation. The variance may be caused by propagation anomalies, error in geodesy, accidental perturbations of signal timing or other factors. Differential system is the system which improves accuracy by transferring correction to users at real time. The system reduces cause of such variance. In such differential operation,	Positioning	±0.5 to ±3nm up to 300nm from Reference station	<ul> <li>(D)Special receiver needed.</li> <li>(D)Reference station and Communication line of correction data are needed.</li> </ul>
To be continued	reference facility may be located at a fixed point within an area of interest. Differences between observed signals and predicated signal are transmitted to users in real time as a differential correction to improve the precision			

Appendix 6-5 Comparative Evaluation of Terrestrial based Radio Aids to Navigation

and performance of the user's receiver processor.Positioning.Typical(D)Loran-C receiver needed.Doran-CThis system is based upon measurement of the operating in the 90 to 110 kHz frequency band. the system is based upon measurement of the a difference in time of arrival of pulses of RF tenergy radiated by a chain of synchronized transmitters which are separated by hundreds of male by a receiver which achieves high accuracy is male by a receiver which achieves high accuracy is male by a receiver which achieves high accuracy is male by a receiver which achieves high accuracy is promparing a zero crossing of a specified RC by comparing a zero crossing of a chain of high a chain consists of 1 Master with 2, 3,4, or 5 secondary station swith the international VML bigh reliability.District control from center by comparing a zero crossing of a specified RC (A) Waster and by comparing a zero crossing of a chain of high a chain consists of 1 Master with 2, 3,4, or 5 secondary station with some remote finder with the international VML form control Resolution form control Resolution 		System description	Purpose	Accuracy and Range	Advantages(A) / Disadvantages(D)
This system is a pulsed and hyperbolic system, operating in the 90 to 110 kHz frequency band, the system in the 90 to 110 kHz frequency band, the system is based upon measurement of the difference in time of arrival of pulses of RF energy radiated by a chain of synchronized transmitters which are separated by hundreds of miles. The measurements of time difference(TD) are miles. The measurements of time difference(TD) are by comparing a zero crossing of a specified RF cycle within the pulses transmitted by Master and Secondary stations within the chain. Usually, a chain consists of a chain of high a chain consists of a chain of high a chain consists of a chain of high a chain consists of a chain of high a chain consists of a chain of high control. The VTS system consists of a chain of high and Vessel Surveillance Radar Station. The VTS system consists of a chain of high control and Vessel Surveillance Radar function. The basic functions of the VTS are not control at a evaluation. Information control are service. Navigation service and support of and vessel service.	l	performance of the user's receiver			
The VTS system consists of a chain of high resolution surveillance radars and VHF direction finder with the international VHF. The system comprises one Center station with some remote Radar Station. The basic functions of the VTS are: Data collection. Data evaluation. Fresolution service. Mavigational assistance service. Traffic organization service and support of allied activities.		This system is a pulsed and hyperbolic system, operating in the 90 to 110 kHz frequency band, the system is based upon measurement of the difference in time of arrival of pulses of RF energy radiated by a chain of synchronized transmitters which are separated by hundreds of miles. The measurements of time difference(TD) are made by a receiver which achieves high accuracy by comparing a zero crossing of a specified RF cycle within the pulses transmitted by Master and Secondary stations within the chain. Usually, a chain consists of 1 Master with 2, 3, 4, or 5 secondaries.	Positioning.	Typical relative accuracy is ±16to±100m Absolute accuracy is ±400m	<ul> <li>(D) Loran-C receiver needed.</li> <li>(A) More than 500,000 marine receiver in use.</li> <li>Lat/Long read out available on latest Rx. Basy to use.</li> <li>(A) Plan for international chain network of Asian area including CIS, China and USA is progressed (A) Wide range, High accuracy and high reliability.</li> </ul>
			Surveillance and Vessel control	Dependent on Surveillance Radar resolution	<ul> <li>(A) Traffic control from center available.</li> <li>(D)No information available on board, obtained only from center station via VHF.</li> </ul>

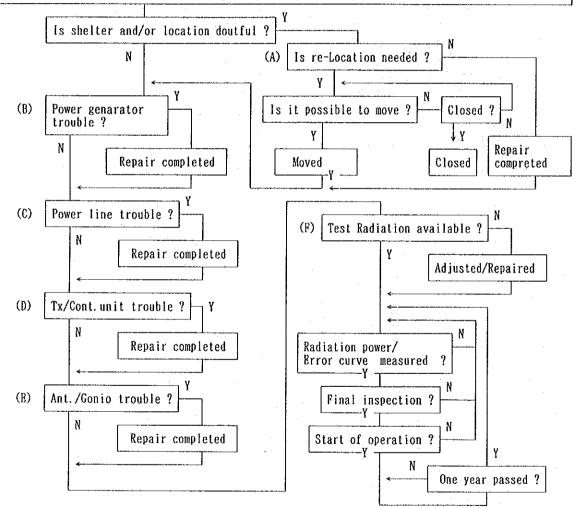
-501-

Appendix 6-6 Rehabilitation Program for Medium Wave Radio Beacon

- 1. Concept of rehabilitation program for MWRB
- 1) Cause of trouble occered should be investigated and reasons for have been restored should also be investigated. This investigation will allow to establish measures for prevention of recurrence.
- 2) Number of users at each area should be examined, then cost for rehabiritation of each station should be estimated as (A) to (F) of next paragraph. Priority of order have to be decided by cost vs efficiency.
- 2. Rehabilitation plan of MWRB

Investigate existing 18 stations

Investigation work shall be done by person in charge of DISNAV who has knowledge of Radio Aids to Navigation. Check sheet prepared in advance must be used.



)r			1992 (ki yang dan kanalar					
DISVAV Monitor	Location Condition	1	1	ŀ	1	T S S	Semarang Sub DISNAV Good	Cilacap Sub DISNAV <u>No data</u>
Costal Monitor	Location Condition	Sabang Castal Station Good	Tjn. Pandan (belitung Is.) <u>Good</u>	Jakarta Coastal Sta- tion (Tx St.) <u>Good</u>	Pontianak Coastal sta- tion <u>Good</u>	Tanjung pandan (Belitung Is.) Cood	Semarang Coastal Sta- tion(Rx St.) <u>Good</u>	Cilacap Coastal Sta- tion Good
Telp Comm. Facility	Location Condition	t .	1	I	1	1	t	1.
Relay 3	Location Condition	1	1	1	1	1	I.	1
Relay 2	Location Condition	1	1	ŀ	ı	I	1	۱
Relay 1	Location Condition	1	Kasenga Is. Good	Damar Besar Is. Good	I	I	I.	<b>I</b>
Check point	Location Condition	· 1	Simedang Light house <u>Good</u>	Peniki Light house <u>Good</u>	1	Pesemut Light house <u>Good</u>	Mandalika Light house (Mandalika Is.) <u>Good</u>	Cimiring Light house (Nusa Kamban gan Is.) Fault
Condi	11011	Fault	Good	Good	Good	Good	Good	Good
Name of	Location	Sabang Tpk. Gajah Sabang Is.	Simedang Simedang Is.	Peniki Peniki Is.	Pontianak Mampawar	Pesemut Pesemut Is.	Muria Danaraja	Cilacap Kilirong
No.		i.	2	ಲು	4	ഗ്	ග්	Ŀ

-503-

DISVAV Monitor	Location Condition	1		Benoa Sub DISNAV <u>Good</u>	1 1	۰. ۱. :	1
Costal Monitor	Location Condition	Surabaya Coastal Sta- tion(Rx St.) Good	Banjarmasin Coastal Sta- tion(Rx St.) Good	Benoa Castal Station <u>Good</u>	Balikpapan Castal Station (Rx St.) Fault I Mhz OSC	Balik papan Castal Sta- tion(Rx St.) Good	Ujn. Pandang Coastal Sta- tion <u>Good</u>
Telp Comm. Facility	Location Condition	1	I	1	1 	1	Kapoposang Is. <u>Good</u>
Relay 3	Location Condition	1	1		1	I	Tg. Butung Good
Relay 2	Location Condition	1	I	ı	ł		Lawalu Good
Relay l	Location Condition	ŧ	Bawah Layung Fault	I	1	1 - 1 - 1	Makadae <u>Good</u>
Check point	Location Condition	Karang Jamuang Light house <u>Good</u>	Tanjung Selamat Light house Fault	1	1	Tg.Mangkalih at Light house <u>Good</u>	Tg. Mandar Light house <u>Good</u>
Condi tion	1011	Good	Fault	Fault E/C	Good	Pault	Fault
Name of station	Location	Jamuang Is. Karang Jamuang	Tanjung Selatan Tanjung Selatan	Benoa Bukit Badung	Balik Papan Tanjung Manggar	Tanjung Mang- kalihat Tanjung Mang- kalihat	Tanjung Mandar Tanjung Mandar
No.		œ	o.	10.	1	12.	
	Name of Condi Check point Relay 1 Relay 2 Relay 3 Telp Comm. Facility Costal Monitor	Name of stationCondiCheck pointRelay 1Relay 2Relay 3Telp Comm. FacilityCostal MonitorLocationLocationLocationLocationLocationLocationLocationLocationLocationConditionConditionConditionConditionConditionLocation	Name of stationCondi tionCheck pointRelay 1Relay 2Relay 3Telp Comm. FacilityCostal MonitorLocationLocationLocationLocationLocationLocationLocationLocationLocationSonditionConditionConditionConditionConditionConditionLocationGoodMarang Light houseSurabayaLight houseCoodCoodCoodSurabayaCood	Name of stationCondi tionCheck pointRelay 1Relay 2Relay 3Telp Comm. FacilityCostal MonitorstationLocationLocationLocationLocationLocationLocationConditionConditionLocationLocationConditionConditionConditionConditionConditionConditionConditionLocationLocationConditionConditionConditionConditionConditionConditionLocationLocationConditionConditionConditionConditionConditionLamuang Is.GoodKarangSurabayaJamuang Is.GoodKarangLight houseBawahSurabayaLanungFaultTanjungBawahBaniarmasinSelatanSelatanFaultSelatanFaultFaultElight houseCoodSelatanSelatanFaultFaultFaultFaultFaultElight houseElight house	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Name of stationCondition tionCondition LocationRelay 1Relay 3Teip Comm. PacilityCostal MonitorLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationConditionConditionLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationConditionConditionConditionLamuangSolatanSurabayaMarangFaultBawahSurabayaImiungFaultLayungLayungSurabayaSelatanFaultSelamatSurabayaBukit BadungFoodFaultSurabayaDoodFaultSurabayaSelatanFaultSurabayaBukit BadungFoodSurabayaDoodSurabayaSelatanFaultSurabayaDoodSelatanSelatanBukit BadungFoodDoodSelatanCood- <t< td=""><td>Name of station       Condi tion       Condition Location       Condition       Relay 1       Relay 2       Relay 3       Telp Comm. Facility       Destate Monitor         Location       Location</td></t<>	Name of station       Condi tion       Condition Location       Condition       Relay 1       Relay 2       Relay 3       Telp Comm. Facility       Destate Monitor         Location       Location

3-2 SITIATION OF EXISTING MEDILIM WAVE RADIO REACON STATION (as of Aug 1993 Source DCSC)

-504-

				والمراجع والمراجع والمراجع والمراجع		
DISVAV Monitor	Location Condition	ł	Ambon Sub DISNAV <u>Good</u>	I	Sorong Sub DISNAV <u>No data</u>	1
Costal Monitor	Location Condition	Ujn. pandang Coastal Sta- tion(Rx St.) <u>Good</u>	Ambon Coastal Sta- tion(Rx St.) <u>Good</u>	Bitung Coastal Sta- tion(Rx St.) <u>Fault</u>	Sorong Coastal Sta- tion(Rx St.) Good	Merauke Coastal Sta- tion <u>Good</u>
Telp Comm. Facility	Location Condition	1			1	1
Relay 3	Location Condition	1	I		1	k
Relay 2	Location Condition	Dayangdayang an Is. <u>Good</u>	1		1	I
Relay 1	Location Condition	Bangkuluang Is. Fault E/G	1	Batu Angus Fault	I	1
Check point	Location Condition	Dewakang Light house Nusa kambang Is. <u>Good</u>	1	Talise Light house Fault	1	1
Condi	1011	Fault	Fault E/G	Fault	<u>0000</u>	Good
Name of	Location	Dewakang Is. Dewakang	Ambon Tanjung Nusan İve	Manado Talise Is.	Sorong Raam Is.	Merauke Lampu Satu
No.		14.	15.	16.	17.	18.
	Name of Condi Check point Relay 1 Relay 2 Relay 3 Telp Comm. Facility Costal Monitor	Name of stationCondiCheck pointRelay 1Relay 2Relay 3Telp Comm. FacilityCostal MonitorstationtionLocationLocationLocationLocationLocationLocationLocationConditionConditionConditionConditionConditionCondition	Name of stationCondi tionCondiRelay 1Relay 2Relay 3Telp Comm. FacilityCostal Monitorstation totationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationConditionConditionConditionConditionDewakangRaultDewakangBangkuluangDayangdayang-Ujn. pandangDewakangIs.GoodSoult B/GGoodConditionConditionCondition	Name of stationCondi tionCheck pointRelay 1Relay 2Relay 3Telp Comm. FacilityCostal Monitorstation stationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationLocationConditionConditionConditionLocationLocationLocationConditionConditionConditionConditionNusakang Is.FaultDewakangBangkuluangDayangdayangUjn. pandangDewakangIs.ConditionConditionConditionConditionConditionConditionNusa kambangFault E/GGoodIs.GoodNusc Ratal Sta-AmbonFaultConditionNusaRaultConditionNusaFaultConditionNueNusanE/GConditionNueFaultConditionNueFaultConditionNueNusanE/GConditionNueNue<	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

-505-

# 4. Cost estimation for rehabilitation of MWRB

(in 1000 Rupiah)

2,310,000

	Station	
No.	Name of location	
1.	Sabang	81,718
3.	Peniki	149,947
7.	Cilacap	187,203
9.	Tg. Selatan	151,702
10.	Benoa	141,890
12.	Tg. Mangkalihat	132,799
13.	Tg. Mandar	272,074
14.	Dewakang	204,106
15.	Ambon	101,330
16.	Talisei	153,178
	Sub total	1,577,947

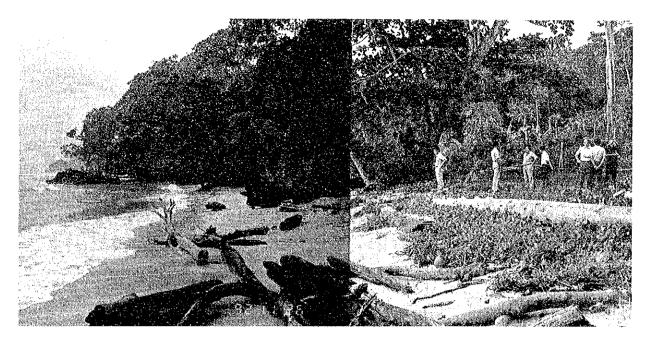
1. PROCUREMENT......Total 1,967,477 (1) Station

	(2) Spare unit for Transmitter	389,530	
2.	SERVICE	Total	342,523
	14,760/each x 9 stations as applicant	132,840	
	Local engineer	13,284	
	Inland transportation	80,000	
	Sub total	226,124	
	(2) Test	99,399	
	(3) OJT	17,000	

GRAND TOTAL.....

3.

Note: Above is rough estimation by DGSC and to be used for reference only.



Appendix 7-1 Observation of Proposed Sites for A Rating School

Picture -1: Proposed Site in Sorong



Picture -2: Proposed Site in Ambon

Appendix 7-2 Brief Notes of Major Training Facilities and Equipments

- (a) Basic Training Facilities
  - (i) Buildings inc., class rooms, work shop, dormitories, and library
  - (ii) Pond (boat harbor) with boat davits, slip way and boat house
  - (iii) 5 GRT motor ship for general use
  - (iv) Cutter (for survival and physical training)
  - (v) Transportation (mini-bus)
- (b) Deck Department Equipment
  - (i) Ship chandlery
    - (ii) Wall chart of ships and model of valves and cargo gears
    - (iii) Navigation aids equipment
      - Steering trainer
      - Gyro compass trainer
      - Magnetic compass trainer
      - Radar observation trainer
      - Engine telegraph
- (c) Catering Department Equipment: Cooking training room with necessary training equipment and tools
- (d) Engine Department Equipment
  - Machine tool: Lath, Universal machine, Arc welder, Tool grinder, etc.
  - (ii) Remote and automatic control equipment
    - Temperature control apparatus
    - Flow control apparatus
    - Level control apparatus
    - Electric control training unit
    - Hydraulic control training unit
    - Main engine remote control trainer
    - Control valve cross section
  - (iii) Electric training equipment
    - Experimental equipment for basic of electric/electronic circuit
    - Experimental equipment for transister type power source circuit
    - Experimental equipment for semi-conductor static characteristic measurement
    - Power source equipment
    - Measuring equipment (Oscilloscope, Ammeter, Voltmeter, etc.)
  - (iv) Engine room model
    - Diesel engine plant
    - Wall chart for engine room of steam turbine plant
    - Cut-away model of diesel engine, pumps, steering gear, etc.

- (e) Audio-visual Teaching Aids
- (f) Survival Training Equipment
  (i) Inflatable life raft
  (ii) Life saving signal flares
- (g) Fire Fighting Equipment
  (i) Fire fighting apparatus
  (ii) Halon type extinguisher system
  (iii) Fire detecting system

	Å	cademy		Rating School				
	JKT	U, P	SNRNG	BRMBNG	SRBYA	Tota		
1.Daerah Istimewa Aceh	0	0	1	0	1	2		
2. North Sumatra	33	10	31	5	1	80		
3. West Sumatra	26	0	13	. 0	0	39		
4. Riau	2	1	6	1	0	10		
5. Jambi	2	0	5	0	0	7		
6. South Sumatra	6	4	11	0	1	22		
7. Bengkulu	8	0	0	0	0	8		
8. Lampung	3	0	6	0	0	. 9		
9. DKI Jakarta	123	18	42	11	5	199		
0. West Jawa	45	8	23	0	1	17		
1. Central Jawa	35	21	319	3	11	389		
2. Daerah Istimewa	3 -	0	14	0	0	17		
Yogyakarta								
13. East Jawa	35	19	57	0	169	280		
4. Bali	2	0	7	2	0 -	1.1		
5. West Nusa Tenggara	1	1	1	0	0	3		
6.East Nusa Tenggara	1	2	0	0	2	5		
7. East - Timor	Ō	Ö	2	Ő	1	3		
8. West Kalimantan	4	1	8	0	1	14		
9.Central Kalimantan	Ō	Õ	1	Ō	Ō	1		
20. South Kalimantan	3	Ō	õ	Ō	Ō	3		
21. East Kalimantan	Õ	10	2	3	0	15		
22. North Sulawesi	3	27	ĩ	ŏ	3 3	34		
23. Central Sulawesi	ŏ	- 9	2	4	÷Õ	15		
4. South Sulawesi	8 8	187	3	457	ž	657		
25. South-East Sulawesi	Õ	4	õ	5	õ	9		
26. Maluku	. 7	18	4	8	1	38		
27. Irian Jaya	2	13	2	2	Ō	19		
Total	352	353	561	501	199	1.966		

Appendix 7-3 Home Provinces of Maritime School Students between 1990 and 1992

# \* XXA Jakarta & XXA Ujung Pandang : 1989 - 1991

