

A14.9 Other surveys

(1) Channel traffic survey

In order to obtain the fundamental data of channel traffic, the observation survey by direct human eyes was carried out as follows;

- (a) point = 3 Nos. of point, Chem material station, Long Bien station and Khuyen Luong station
- (b) period= 3 continuous days (from 0800 on 17th Jan. to 0800 on 20th Jan.2002)
- (c) items= nos., kinds, volume, tonnages and status of ship, for both down- and up-stream traffic

The results of survey are summarized in **Table A14.9.1** and in **Figure A14.9.1 and 2**, where major cargo is bulk cargo, such as sand, coal, gravel, stone and cement.

Table A14.9.1 Summary of Channel Traffic Survey

Chem		Down-stream									
Tonnage(t) and	Status of Ship	Nos. of Ship							sub-t	total	Cargo Vol. (t)
		50	100	150	200	250	300	400			
Unloaded		14	11	2	4	3	0	0	34	0	0
Loaded		158	186	3	76	9	3	4	439	473	46,900
Chem		Up-stream									
Unloaded		33	96	3	5	1	0	0	138	0	0
Loaded		13	17	2	31	9	0	4	76	214	11,950
Long Bien		Down-stream									
Tonnage(t) and	Status of Ship	Nos. of Ship							sub-t	total	Cargo Vol. (t)
		50	100	150	200	250	300	400			
Unloaded		0	2	0	0	0	0	0	2	0	0
Loaded		95	137	11	92	2	2	0	339	341	39,600
Long Bien		Up-stream									
Unloaded		18	115	1	110	3	3	1	251	0	0
Loaded		1	2	1	1	0	0	0	5	256	150
Khuyen Luong		Down-stream									
Tonnage(t) and	Status of Ship	Nos. of Ship							sub-t	total	Cargo Vol. (t)
		50	100	150	200	250	300	400			
Unloaded		1	12	6	0	0	0	0	19	0	0
Loaded		16	111	24	1	1	0	0	153	172	15,950
Khuyen Luong		Up-stream									
Unloaded		9	83	13	1	1	0	0	107	0	0
Loaded		0	32	5	1	1	0	0	39	146	3,800

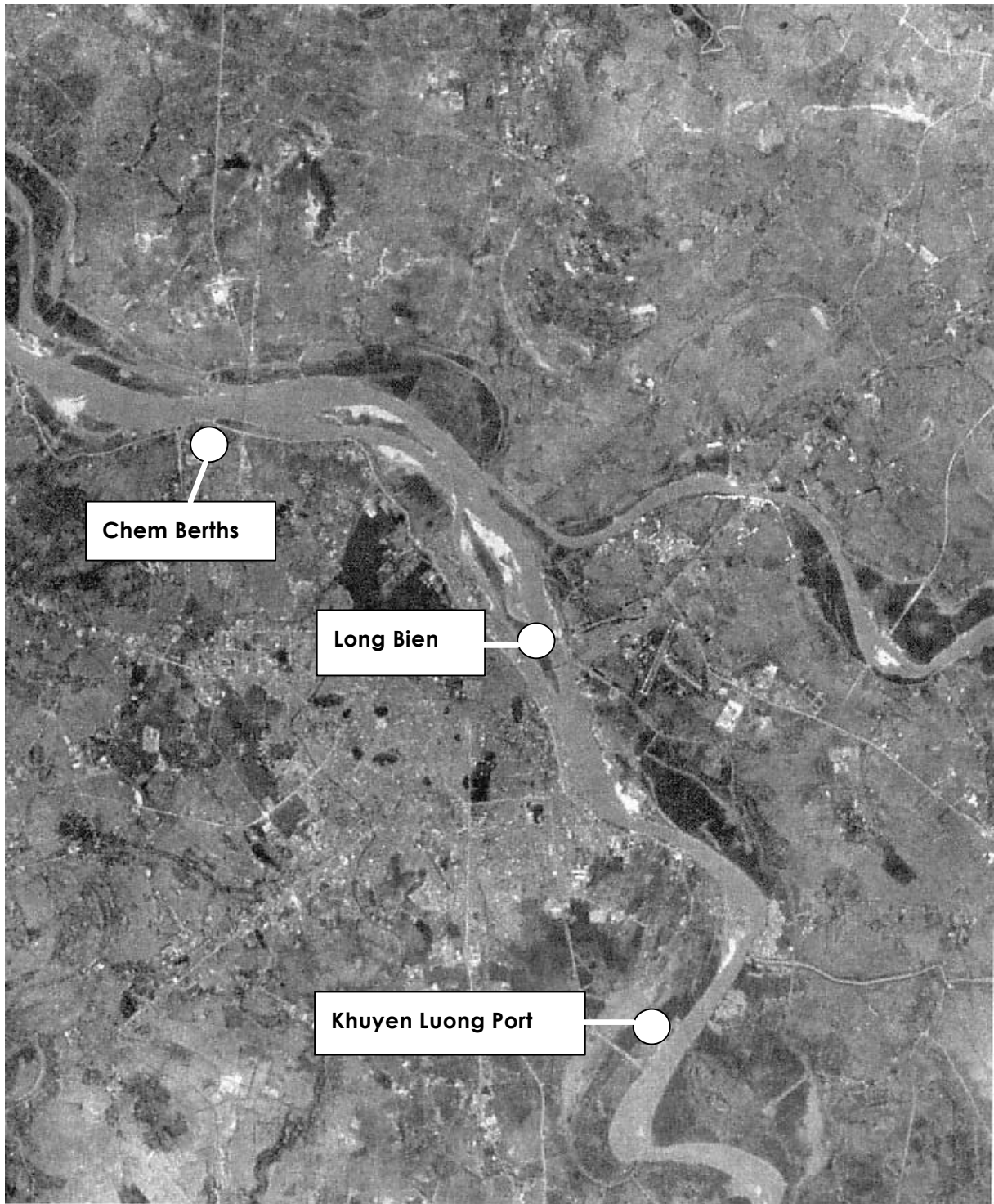


Figure A14.9.1 Location of Channel Traffic Survey

Source) JICA Study Team

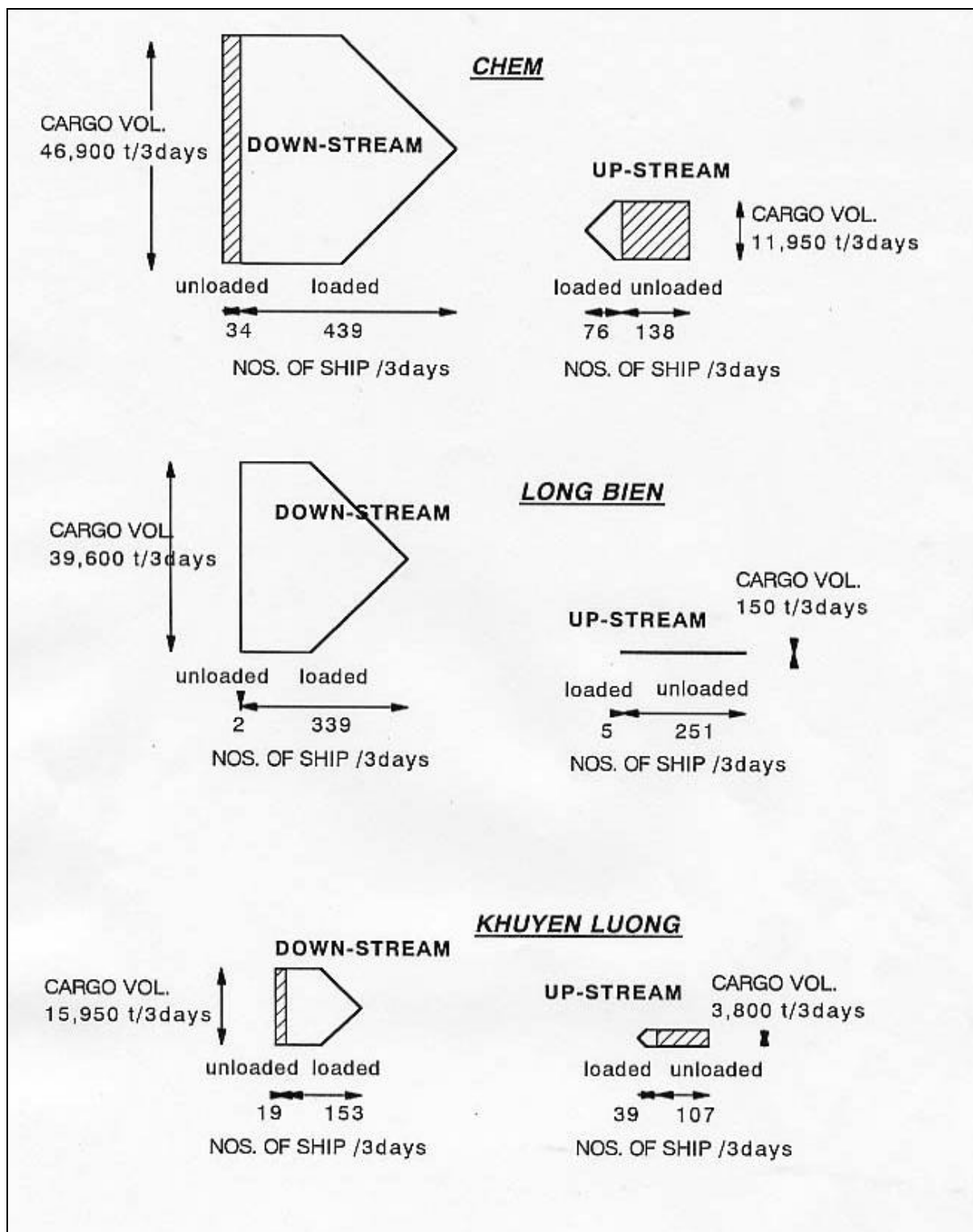


Figure A14.9.2 Results of Channel Traffic Survey

Source) JICA Study Team

(2) Port access road traffic survey

In order to obtain the fundamental data of port access road traffic, the observation survey by direct human eyes was carried out as follows;

- (a) location = 3 Nos. of location, Chem material station, Hanoi Port and Khuyen Luong Port
- (b) period= 3 continuous days (from 0800 on 17th Jan. to 0800 on 20th Jan. 2002)
- (c) items= nos., type, volume, weight and status of vehicles, for both in- and out-traffic

The results of survey are summarized in **Table A14.9.2** and in **Figure A14.9.3(1)~(3)**. Bulk cargo, such as sand, coal, stone and cement is mainly handled at all 3 ports, while other cargo is also handled at Hanoi Port.

Table A14.9.2 Summary of Port Access Road Traffic Survey

Location	IN/OUT nos. of truck and car /3days					Cargo vol.t/3days	
	Light	Medium	Heavy	Car	Total Nos.	IN	OUT
Chem Station	1,546	2,258	894	0	4,698	0	13,435
Hanoi Port	5,975	2,678	567	1,393	10,613	5,240	12,965
Khuyen Luong Port	356	2,965	483	30	3,834	40	10,932

Note) Light = 0.5, 1.0, 2.5 (t) weight of truck, Medium = 5.0, 7.0 (t) weight of truck, Heavy = 10.0, 15.0 (t) weight of truck

Source) JICA Study Team

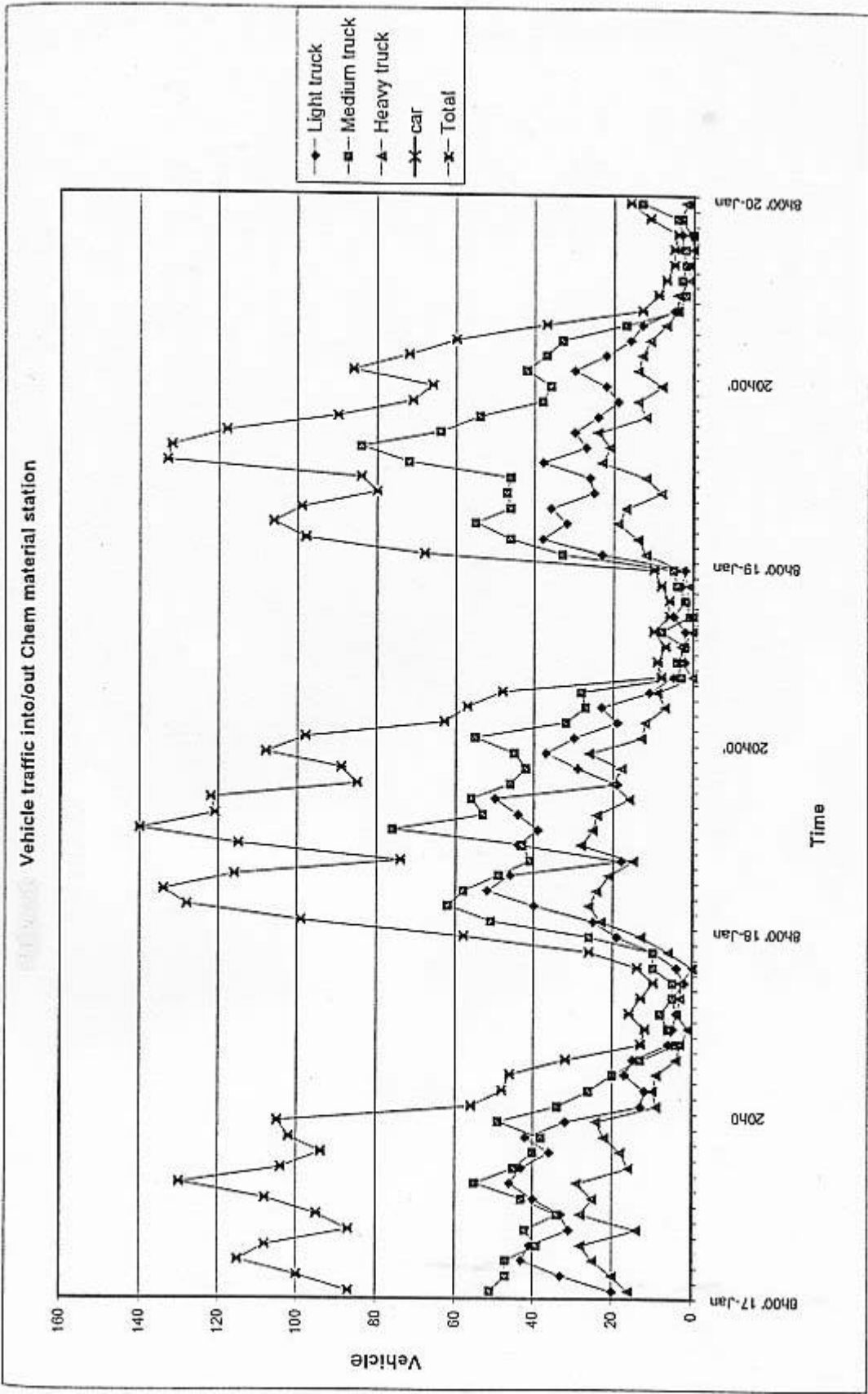


Figure A14.9.3 (1) Result of Port Access Road Traffic Survey (Chem Station)

Source) JICA Study Team
gates

At all 2

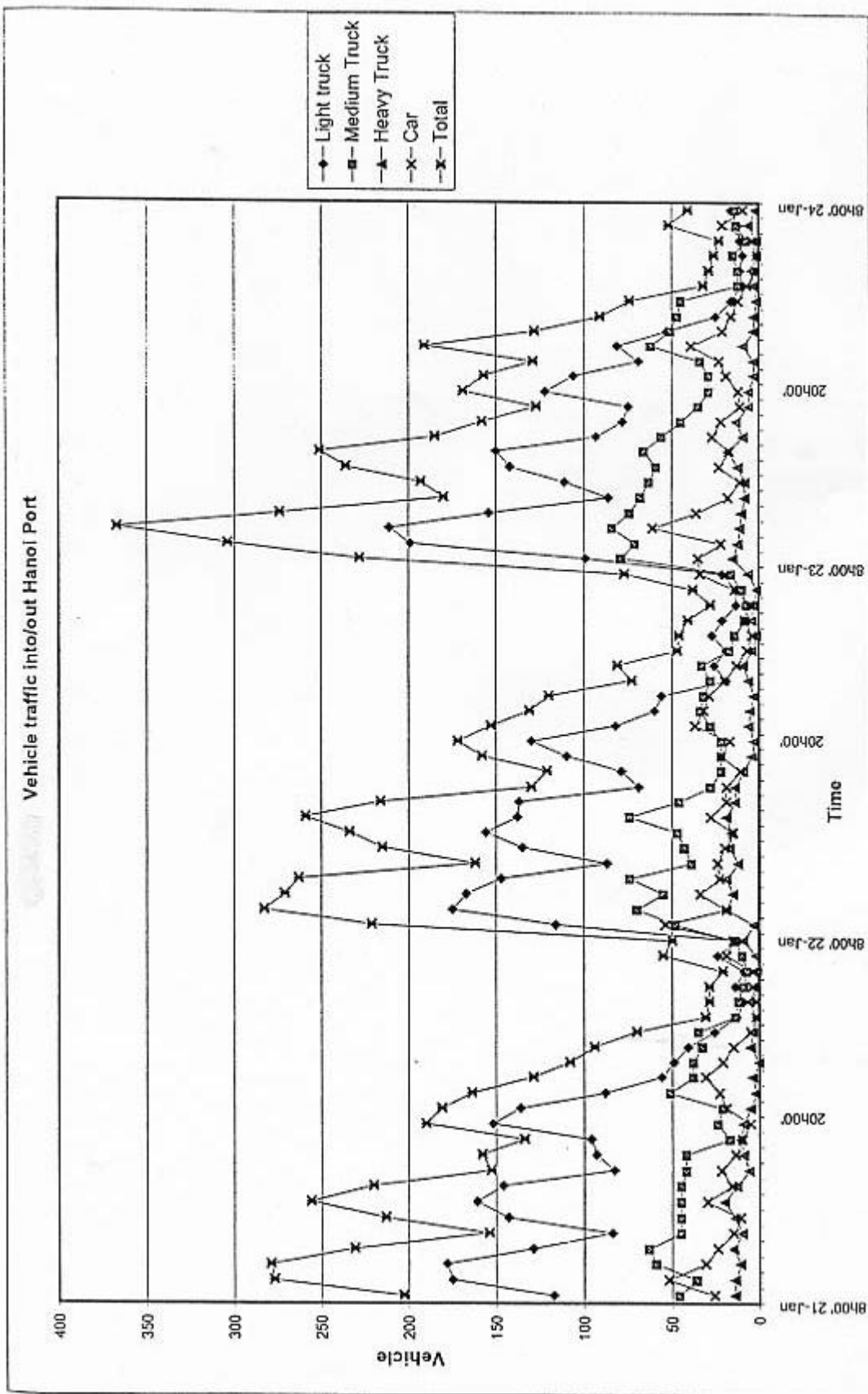


Figure A14.9.3 (2) Result of Port Access Road Traffic Survey (Hanoi Port)

Source) JICA Study Team

At all 3

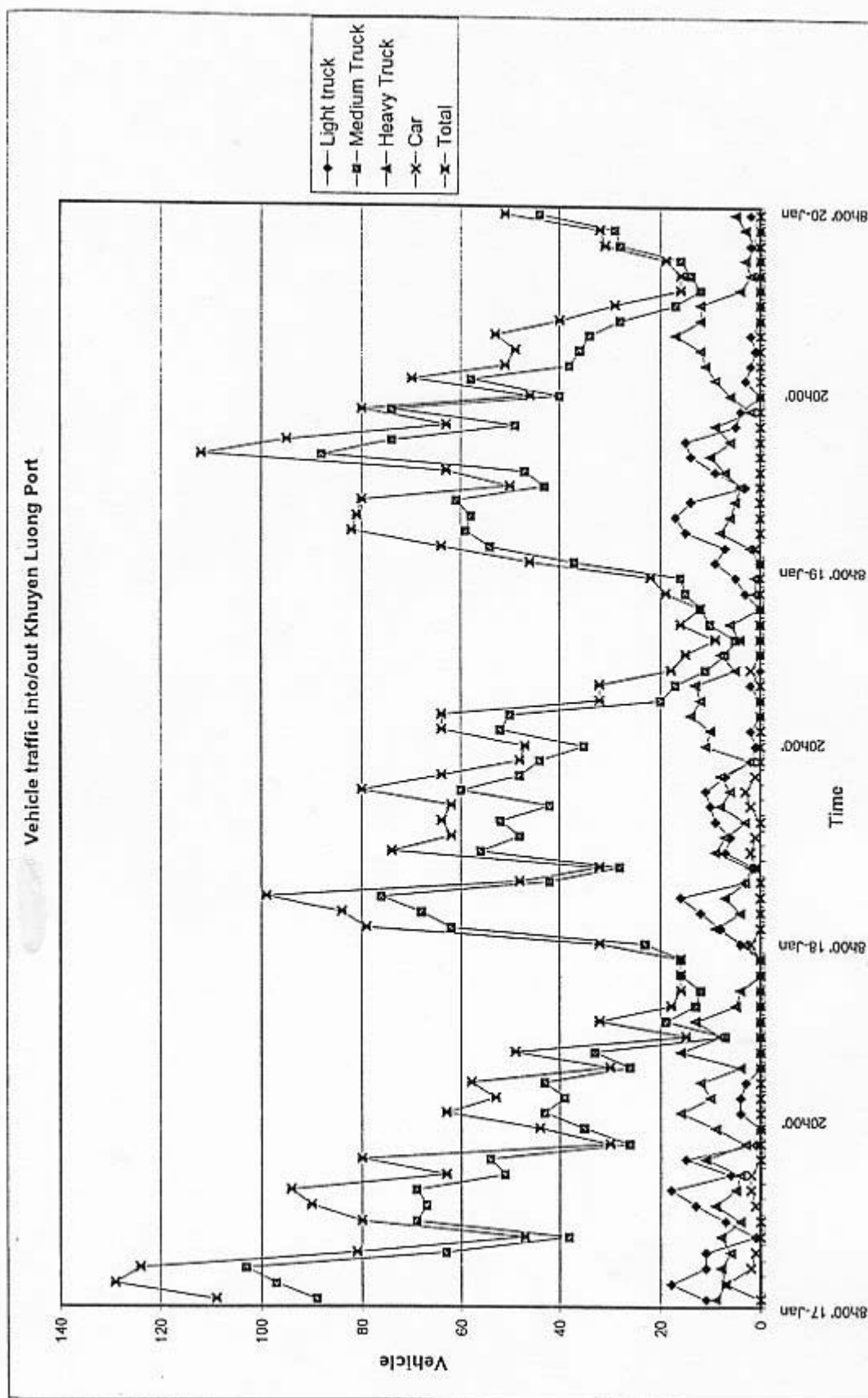


Figure A14.9.3 (3) Result of Port Access Road Traffic Survey (Khuyen Luong Port)

Source) JICA Study Team

(3) Port traffic and cargo handling survey

In order to obtain the fundamental data of port traffic and cargo handling, the observation survey and data collection were carried out as follows;

- (a) location = 3 Nos. of location, Chem material station, Hanoi Port and Khuyen Luong Port
- (b) period= 3 continuous days (from 0800 on 17th Jan. to 0800 on 20th Jan. 2002, at Chem Station and Khuyen Luong Port, and from 0800 on 21th Jan. to 0800 on 24th Jan. 2002 at Hanoi Port)
- (c) items= nos., size, weight and berthing time of calling ships, and cargo and equipment for handling

The results of survey are summarized in **Table A14.9.3**. The handling activity at Chem Station is unloading of sands by bucket crane, while that at Hanoi Port and Khuyen Luong Port is unloading of various cargoes, such as coal, mash, cement, sand, etc, by belt conveyor and bucket crane.

Table A14.9.3 Summary of Port Traffic and Cargo Handling Survey

Name of Port	Calling Ship per 3 days				Cargo Volume per 3 days	
	Nos. in total	Average Weight	Average Waiting Hrs.	Average Working Hrs.	IN	OUT
Chem Station	102	110	3.84	1.44	11,195	0
Hanoi Port	49	152	7.17(*)	6.71(*)	3,490	0
Khuyen Luong Port	14	149	6.14(*)	8.79(*)	1,330	0

Note) (*)= against the definite data only

Source) JICA Study Team

Furthermore, cargo handling efficiency of sand is also studied based upon observation record at Chem Station from 19th and 20th Mar. 2002, the result of which is shown in **Figure A14.9.4**.

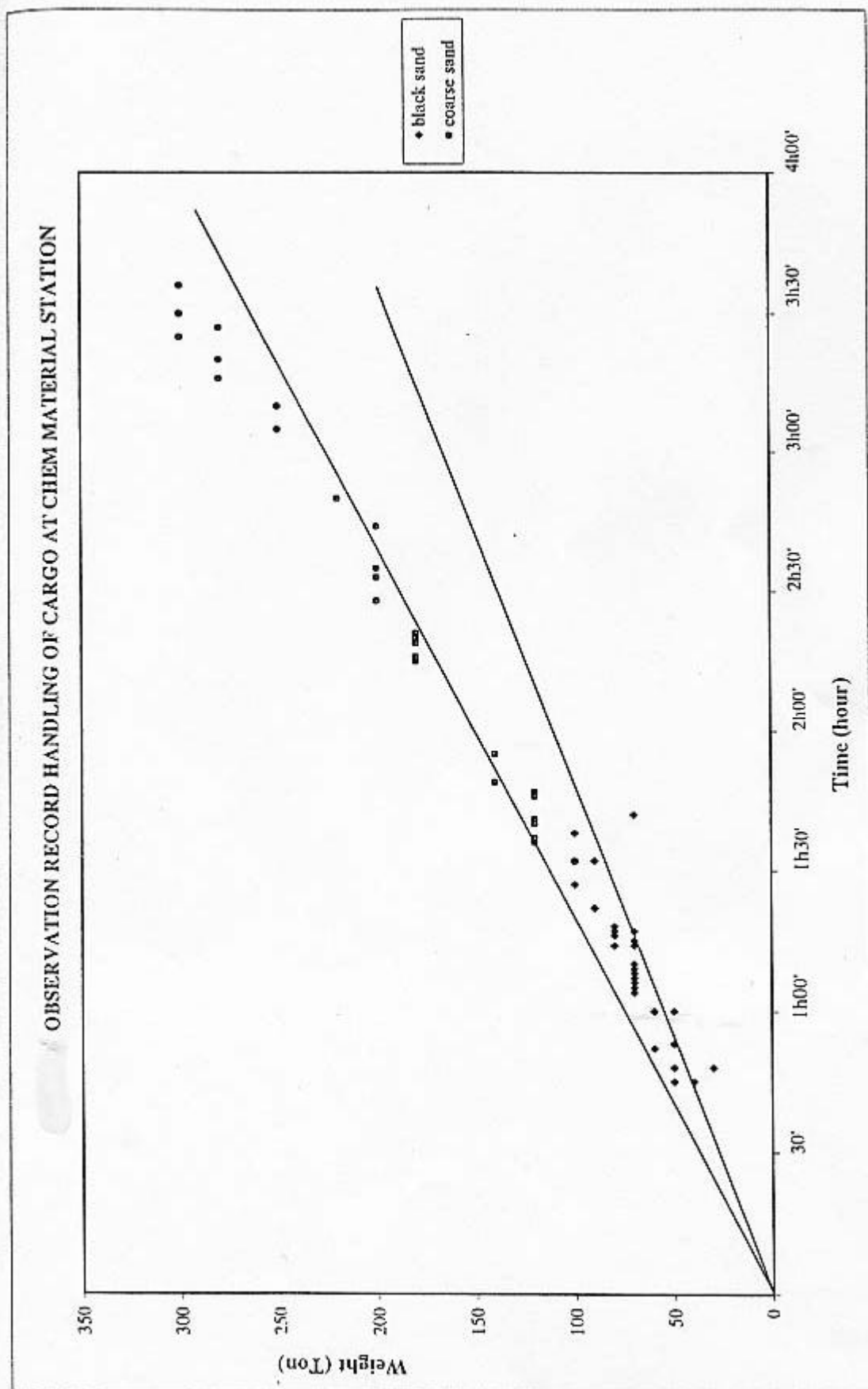


Figure A14.9.4 Result of Cargo Handling Efficiency

Source) JICA Study Team

(4) Sand pits survey

In order to obtain the fundamental data for sand pits, the field survey and data collection were carried out as follows;

- (a) location = in Hanoi Segment, the Red River
- (b) period= 3 days for field survey, in Jan. 2002
- (c) items= location, quantity to be excavated, and grading of sand

The result of survey is tabulated in **Table A14.9.4** and their location is shown in the **Figure A14.9.5**. The laboratory test for soil samples shows that all the sands produced for testing are grownish grey, poorly graded sands.

Table A14.9.4 Result of Sand Pits Survey

Name of Sand Pits		Coordination		Volume of sand exploiting		Period of Dredging	Equipment	Executor	License	Main Destination	Remark
		North	East	m ³ /day	m ³ /year						
I	Regular exploiting										
1	Vong La (1000m to up stream of Thang Long Bridge)	21° 06' 13.4006"	105° 46' 36.332"	1,500	450,000	Time for exploiting is estimated as 10 months per year.	Small cutter suction dredger	Mr. Hoan and Mr. Hop (*)	Not	Highway No. 18 Project	On the Red River
2	Hai Boi (1000m to down stream of Thang Long Bridge)	21° 06' 10.8007"	105° 47' 37.0308"	1,000	300,000		Small cutter suction dredger	Mr. Phuong (*)	Not	For inside Hanoi	On the Red River
3	Tam Xa (near the Tam Xa embankment)	21° 05' 31.4017"	105° 52' 04.7277"	1,000	300,000		Small Cutter suction dredger	Mr. Vu (*)	Not	Highway No. 18 Project	On the Red River
4	Phu Vien – Lam Du (near Military Port, 800 m to down stream of Chuong Duong Bridge)	21° 01' 56.4068"	105° 52' 05.8254"	800	240,000		Small cutter suction dredger	Mr. Sy (*)	Not	For inside Hanoi	On the Red River
5	Phu Cuong- Thach Cau (opposite the Hanoi Port, near the Thach Cau embankment)	21° 00' 51.4083"	105° 52' 33.1248"	2,500	750,000		Excavator	Mr. Tuan (*)	HN People Committee	Highway No. 10 Project	On the Thach Cau Sand Bank
6	Kim Lan (opposite Khuyen Luong Port, near Khuyen Luong wharf)	20° 57' 11.0134"	105° 53' 39.4236"	200	60,000		Small cutter suction dredger	Mrs. Lan (*)	Not	For inside Hanoi	On the Red River
7	Khuyen Luong (near Khuyen Luong Port, 900m to up stream of Khuyen Luong Port)	20° 57' 31.3129"	105° 53' 32.0238"	2,000	600,000		Cutter suction dredger	Nr. Thai (*)	Not	Highway No. 10 Project and Hanoi city	On the Red River
II	Irregular exploiting										
1	Shallow No. 1 (1400m to up stream of Chem Port)	21° 05' 43.0649"	105° 46' 00.3272"	-	22,000		Cutter suction dredger	(**)	VIWA	For shallow dredging	On the Red River
2	Shallow No. 2 (opposite the Tu Lien Sand Bank)	21° 03' 45.2974"	105° 51' 26.3561"	-	60,000		Cutter dredger	(**)	VIWA	For shallow dredging	On the Red River
3	Shallow No. 3 (1400m to down stream of Chuong Duong Bridge)	21° 02' 12.8499"	105° 51' 42.4493"	-	30,000	Uncontinuous	Cutter suction dredger	(**)	VIWA	For shallow dredging	On the Red River
4	Shallow No. 4 (1800m to up stream of Hanoi Port)	21° 01' 22.0530"	105° 51' 54.0399"	-	10,000		Cutter suction dredger	(**)	VIWA	For shallow dredging	On the Red River
	TOTAL				2,822,000						

Note) VIWA – Vietnam Inland Waterway Administration

Source: (*) – information based on hearing of the owner. (**)- Estimate by TEDI Port and Waterway Management Sub-station No. 6

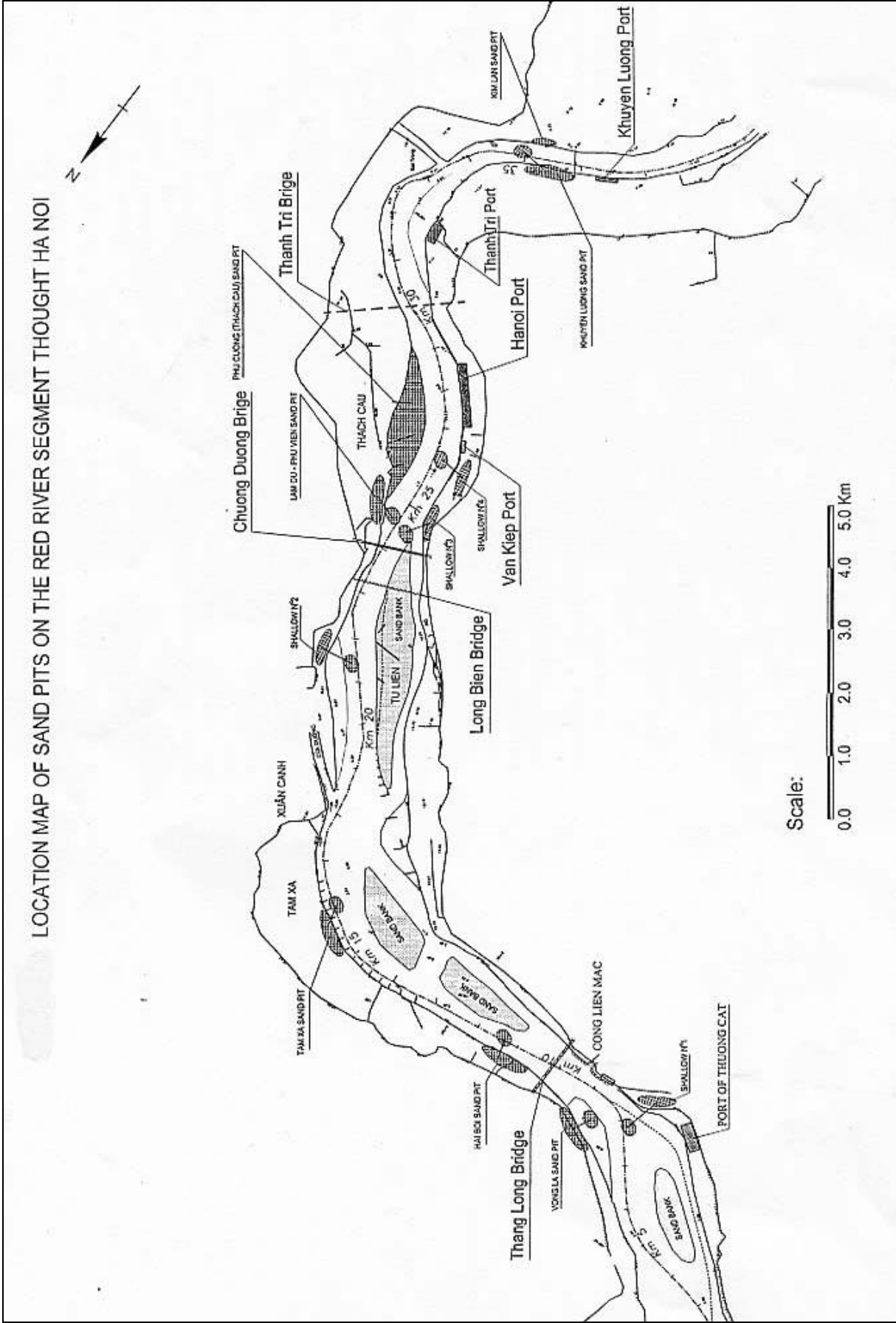


Figure A14.9.5 Location of Sand Pits

Source) JICA Study Team

(5) Stranded boat survey

In order to obtain the fundamental data for stranded boats in the area of the Red River Delta, the data collection was carried out.

The result is summarized in **Table A14.9.5(1) ~ (3)** and their location is shown in the **Figure A14.9.6**.

Table A 14.9.5 (1) Summary of Stranded Boats (1)

I. Red River

No.	Stranded Boat	Chainage to Down Stream (km)	Location	Distance to Center Line (m)	Materials	Remarks
1	Self Barge	1.5	Left side	30	Steel	
2	Self Barge	2.0	Right side	10	Steel	
3	Bridge Girder under Arch No. 11c of Long Bien Bridge	70.0	Right side	150	Steel	
4	Bridge Girder under Arch No. 12a of Long Bien Bridge	70.0	Right side	60	Steel	Km 0 is calculated from Viet Tri confluence
5	Self Barge (Yung Nhot Location)	86.5	Right side	35	Steel	
6	Self Barge (Ninh So Location)	91.0	Right side	70	Steel	
7	Power Boat	169.0	Right side	120	Steel Concrete	
8	Self Barge	170.0	Right side	70	Steel	
9	Cargo Boat	1.5	Left side	500	Steel	Km 0 is calculated from Ba Lat mouth
10	Cargo Boat	72.0	Right side		steel	

Source) Waterway Management Sub-station No.2, Waterway Management Sub-station No.5, and Waterway Management Sub-station No.6

Table A14.9.5 (2) Summary of Stranded Boat (2)

II. Day River

No.	Stranded Boat	Chainage to Down Stream	Location	Distance to Center Line (m)	Materials	Remarks
1	Power Boat	138.0	Right side	30	Steel Concrete	Km 0 is calculated from Day mouth
2	Power Boat	140.0	Right side	30	Steel Concrete	
3	Power Boat	141.0	Right side	30	Steel Concrete	

Source) Waterway Management Sub-station No.5

III. Luoc River

No.	Stranded Boat	Chainage to Down Stream	Location	Distance to Center Line (m)	Materials	Remarks
1	Self Bare	41.0	Right side	40	Steel	Km 0 is calculated from Phuong Tra confluence (intersection of Luoc River and Red River)
2	Cargo Boat	53.0	Right side	45	Steel	
3	Cargo Boat	59.0	Right side	40	Steel Concrete	
4	Cargo Boat	65.0	Right side	45	Steel concrete	

Source) Waterway Management Sub-station No.2

Table A14.9.5 (3) Summary of Stranded Boat (3)

IV. Van Uc River

No.	Stranded Boat	Chainage to Down Stream (km)	Location	Distance to Center Line (m)	Materials	Remarks
1	Cargo Boat	1.0	Left side	Adjoining river bank	Steel Concrete	Km 0 is calculated from Kenh Dong confluence

Source) Waterway Management Sub-station No.8

V. Dao Hai Phong River

No.	Stranded Boat	Chainage to Down Stream	Location	Distance to Center Line (m)	Materials	Remarks
1	Self Boat	-	Left side	Adjoining river bank	Steel Concrete	Km 0 is calculated from intersection of Lach Tray River and Dao Hai Phong River

Source) Waterway Management Sub-station No.8

VI. Kinh Thay River

No.	Stranded Boat	Chainage to Down Stream (km)	Location	Distance to Center Line (m)	Materials	Remarks
1	Cargo Boat	4.3	Left side	-	Steel Concrete	Km 0 is calculated from Nau Khe confluence (intersection of Kinh Thay and Thai Binh River)
2	Cargo boat	35.0	Left side	-	Steel Concrete	

Source) Waterway Management Sub-station No.7

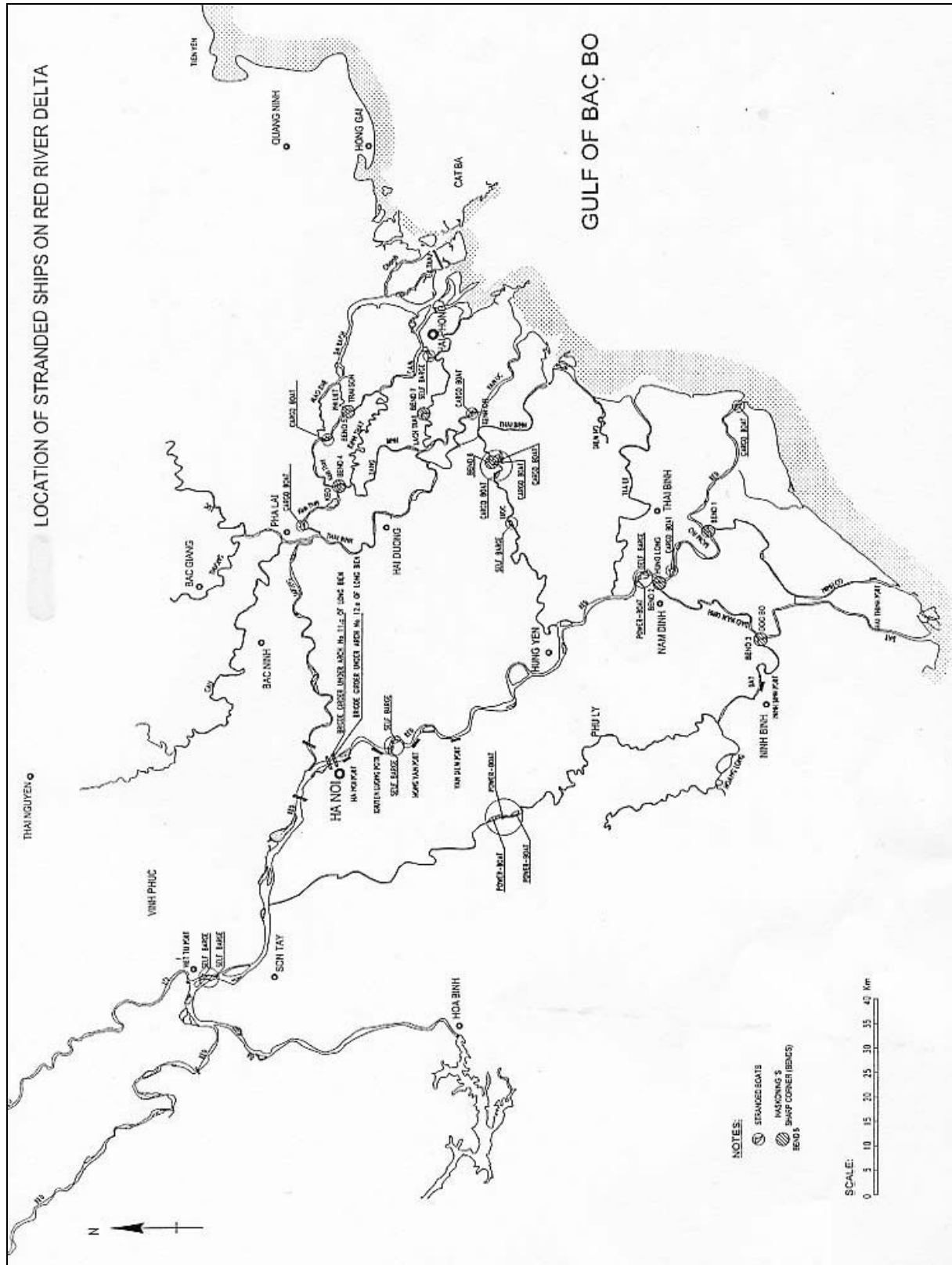


Figure A14.9.6 Location of Stranded Boats

Source) JICA Study Team