

Table L.2.1 Estimation of Damages Due to 1-Year Flood in the Study Area by District

Classified by	District	No.	Duo to:	Share (%) of Residence										Unit Construction Price of Buildings (VNĐ/1,000/m ²)				General Factors				Value of movables (%)				Formulae for calculation of damage rate									
				Residence		Comm-erial		Residence		Comm-erial		Residence		Comm-erial		Building Density (%)		Comm-erial		Residence		Comm-erial		Indus./insti.		Comm-erial		Residence		Comm-erial		Indus./insti.		Comm-erial	
				Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp		
				34.9%	63.0%	2.1%	1,200	1,500	1,000	500	1,200	1,200	1,200	56.2%	10.0%	137.5%	60.0%	83.0%	56.2%	10.0%	137.5%	60.0%	83.0%	$y = -0.0005x^2 + 0.0055x + 0.0051$	$y = 0.0051Ln(x) + 0.0642$	$y = 0.0042Ln(x) + 0.0604$	$y = 0.0063Ln(x) + 0.0532$								
				27.11	7.71	0.02	14.51	4.87	25.691	84	48,369	35,325	50	40,147	175	1	3.14	1,615	3	2,189	4,296														
				28.14	1.74	26.39	0.00	0.00	3	4	0.30	0.50	8,666	123,266	0	11,916	73,960	0	58	826	0	544	4,294	0	5,722	0	1,013	0	856	0	3,360	2,022	0	6,105	
				24.73	11.41	12.89	0.00	0.43	4	6	0.20	0.30	56,757	60,193	0	78,041	36,116	0	351	372	0	3,360	2,022	0	6,105	0	6,105	0	3,360	2,022	0	6,105			
				0.23	0.01	0.20	0.00	0.03	5	5	0.50	0.50	26	915	0	35	549	0	0	7	0	2	33	0	42	0	0	0	0	0	0	0	0		
				0.01	0.00	0.00	0.00	0.01	4	6	0.40	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
				7.16	0.06	7.04	0.00	0.05	4	6	0.40	1.00	313	32,886	0	431	19,732	0	2	237	0	20	1,175	0	1,435	0	0	0	0	0	0	0	0	0	
				13.22	51.97	0.00	0.53	65.762	242,731	0	90,423	145,639	0	411	1,600	0	3,926	8,380	0	3,627	0	10,241	5,965	12,466	32,568	0	1,194	0	192	308	0	2,866	0	33	
				18.11	0.00	18.11	0.00	0.00	1	24	0.20	0.40	0	91,184	0	54,710	0	0	564	0	0	0	0	0	0	1,435	0	0	0	0	0	0	0	0	
				31.94	36.51	51.71	0.00	1	24	0.20	0.70	172,963	177,541	280,006	237,824	106,525	232,405	1,069	1,097	1,730	10,241	5,965	12,466	32,568	0	1,194	0	192	308	0	2,866	0	33		
				5.09	0.53	4.57	0.00	0.00	1	1	0.50	0.50	2,853	22,208	0	3,923	13,325	0	22	172	0	192	308	0	1,194	0	192	308	0	2,866	0	33			
				9.46	4.85	4.61	0.00	0.00	1	1	0.40	0.40	26,271	22,420	0	36,123	13,452	0	190	162	0	1,713	801	0	2,866	0	192	308	0	2,866	0	33			
				0.10	0.07	0.03	0.00	0.00	1	6	0.30	0.50	397	136	0	546	82	0	3	1	0	25	5	0	33	0	192	308	0	2,866	0	33			
				3.65	0.27	0.00	0.38	0.00	1	3	0.20	0.40	1,447	0	18,301	1,990	0	15,190	9	0	113	86	0	1,023	0	192	308	0	2,866	0	33				
				8.19	2.48	5.70	0.00	0.00	2	3	0.20	0.40	13,456	27,724	0	18,502	16,634	0	83	171	0	797	931	0	1,983	0	192	308	0	2,866	0	33			
				40.14	51.42	55.09	0.00	217,388	250,029	298,307	298,908	150,018	247,595	1,375	1,603	3,844	13,053	8,510	13,281	39,666	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				5.06	1.02	0.00	4.04	0.00	1	24	0.20	0.70	5,352	0	21,193	7,360	0	17,590	33	0	131	317	0	944	1,425	0	192	308	0	2,866	0	33			
				38.24	6.52	8.66	23.06	0.00	1	6	0.30	0.50	34,244	41,465	121,029	47,086	24,879	100,454	250	278	811	2,148	1,444	5,559	10,471	0	192	308	0	2,866	0	33			
				79.75	3.36	63.23	13.16	0.00	1	3	0.20	0.40	17,643	302,876	69,078	24,259	181,726	57,335	109	1,872	427	1,045	10,175	3,075	16,703	0	192	308	0	2,866	0	33			
				10.50	1.41	8.97	0.00	0.12	1	3	0.20	0.40	7,377	42,983	0	10,143	25,790	0	46	266	0	437	1,444	0	2,192	0	192	308	0	2,866	0	33			
				85.24	13.70	71.54	0.00	0.00	24	24	0.30	0.40	71,931	342,662	0	98,905	203,597	0	482	2,298	0	4,512	11,937	0	19,228	0	192	308	0	2,866	0	33			
				62.78	11.41	51.37	0.00	0.00	24	24	0.20	0.30	59,873	246,090	0	82,325	147,654	0	370	1,521	0	3,545	8,267	0	13,703	0	192	308	0	2,866	0	33			
				45.46	9.43	36.03	0.00	0.00	1	2	0.20	0.40	49,474	172,583	0	68,027	103,550	0	306	1,067	0	2,929	5,798	0	10,100	0	192	308	0	2,866	0	33			
				0.44	0.26	0.16	0.00	0.02	4	6	0.50	0.50	1,345	772	0	1,850	463	0	10	6	0	90	28	0	135	0	192	308	0	2,866	0	33			
				8.75	4.12	4.62	0.00	0.00	4	6	0.40	1.00	21,641	22,152	0	29,256	13,291	0	156	160	0	1,411	791	0	2,519	0	192	308	0	2,866	0	33			
				51.23	244.58	40.26	0.14	268,880	1,171,894	211,300	369,711	702,950	175,379	1,732	7,466	1,369	16,433	39,885	9,578	76,375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				35.29	0.00	0.00	35.29	0.00	2	4	0.20	0.30	0	176,380	0	0	146,396	0	0	1,090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
				49.98	3.14	0.00	46.84	0.00	2	3	0.20	0.40	15,711	0	234,129	21,602	0	194,327	97	0	1,447	930	0	16,424	12,898	0	192	308	0	2,866	0	33			

Table L.2.1 Estimation of Damages Due to 1-Year Flood in the Study Area by District

Suburb/ an area	Share (%) of Residence	Unit Construction Price of Buildings (VNĐ/1,000/m ²)										General Factors				Value of movables (%)				Formulae for calculation of damage rate						
		Residence		Comm- ercial		Residence		Comm- ercial		Building Density (%)		Resi- dence		Comm- ercial		Indus- trial		Movables(residence)		Buildings:						
		Semi.P.	Temp	Semi.P.	Temp	Semi.P.	Temp	Semi.P.	Temp	1,200	1,500	1,000	500	1,200	1,500	60.0%	137.5%	83.0%	y = -0.0005x ² + 0.0055x + 0.0051	y = 0.0051Ln(x) + 0.0642	y = 0.0042Ln(x) + 0.0604	y = 0.0063Ln(x) + 0.0532				
		34.9%	2.1%	63.0%	2.1%	1,200	500	1,200	500	1,200	500	1,200	500	1,200	500	1,200	500	1,200	500	(shops)	(shops)	(shops)	(shops)			
72 R	49.14	2.37	46.76	0.00	0.00	0.35	0.35	6.946	176.650	0	9.550	105.990	0	47	1.184	0	4.36	6.154	0	7.820	0	7.820	0			
73 R	49.51	1.55	47.96	0.00	0.00	0.30	0.30	4.531	181.165	0	6.231	108.699	0	30	1.215	0	2.94	6.311	0	7.840	0	7.840	0			
74 R	105.48	7.27	98.19	0.00	0.02	12	12	21.284	370.928	0	29.266	222.557	0	132	2.292	0	1.260	12.461	0	16.145	0	16.145	0			
75 R	26.49	4.74	21.75	0.00	0.00	0.25	0.25	13.874	82.163	0	19.077	49.298	0	86	508	0	821	2.760	0	4.175	0	4.175	0			
76 R	45.86	0.67	45.20	0.00	0.00	0.20	0.20	1.957	170.727	0	2.690	102.436	0	12	1.055	0	116	5.736	0	6.919	0	6.919	0			
77 R	11.13	2.81	8.32	0.00	0.00	0.40	0.40	8.220	31.441	0	11.302	18.864	0	51	1.126	0	487	1.056	0	1.788	0	1.788	0			
78 R	39.37	3.11	36.27	0.00	0.00	0.60	0.60	9.094	136.995	0	12.504	82.197	0	75	1.126	0	625	5.063	0	6.889	0	6.889	0			
79 R-T	0.01	0.00	0.00	0.00	0.01	4	6	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total	820.73	75.30	730.35	6.81	8.27	220.441	2,738.947	19,944	303.107	1,655.368	16,554	1,504	18,250	143	13,838	95,049	934	129,697	0	934	129,697	0	129,697	0		
43 T	103.12	3.16	85.48	0.00	14.48	2	4	0.30	344.227	0	15.183	206.536	0	74	2.308	0	693	11.991	0	15,066	0	15,066	0	15,066	0	
44 T	54.64	1.82	51.28	0.00	1.54	2	3	0.20	206.495	0	8.751	123.897	0	39	1.276	0	377	6.937	0	8,630	0	8,630	0	8,630	0	
45 T	20.25	2.52	16.64	0.00	1.09	2	4	0.30	66.999	0	12.135	40.200	0	59	449	0	554	2.334	0	3,396	0	3,396	0	3,396	0	
46 N	6.77	0.61	6.17	0.00	0.00	0	0	0.00	24.833	0	2.921	14.900	0	0	0	0	0	0	0	0	0	0	0	0	0	
47 R-T	5.77	2.18	3.35	0.00	0.24	2	4	0.30	7.642	13.491	0	10.507	8.094	0	51	90	0	479	4.70	0	1,091	0	1,091	0	1,091	0
48 T	20.57	1.68	18.42	0.00	0.48	3	4	0.30	5.867	74.172	0	8.067	44.503	0	39	497	0	368	2.584	0	3,488	0	3,488	0	3,488	0
49 T	351.95	31.10	336.53	6.06	178.26	2	6	0.60	108.819	549.801	21,202	149.626	329.861	17,598	894	4,519	174	7,479	20,319	1,025	34,411	0	34,411	0	34,411	0
50 R-T	23.76	2.68	21.08	0.00	0.00	0	3	0.30	9.379	84.382	0	12.897	50.929	0	72	656	0	630	3.090	0	4,448	0	4,448	0	4,448	0
51 R	27.84	0.00	27.69	0.00	0.16	2	4	0.30	111.497	0	0	66.898	0	0	748	0	0	4.632	0	4,632	0	4,632	0	4,632	0	
52 R	23.75	2.66	21.09	0.00	0.00	0	3	0.30	84.922	0	12.787	50.953	0	62	569	0	583	2.958	0	4,173	0	4,173	0	4,173	0	
53 R	12.08	0.00	12.08	0.00	0.00	24	24	0.30	48.655	0	0	29.193	0	0	326	0	0	1.695	0	2,021	0	2,021	0	2,021	0	
54 R	6.14	0.28	5.86	0.00	0.00	5	5	0.35	23.581	0	1.366	14.149	0	7	158	0	62	821	0	1,049	0	1,049	0	1,049	0	
Total	656.65	48.69	405.66	6.06	196.24	170.357	1,633.556	21,202	234.241	980.133	17,598	1,299	11,598	174	11,224	37,084	1,025	82,404	0	82,404	0	82,404	0	82,404	0	
45 T	1.42	0.00	1.42	0.00	0.00	2	4	0.30	6.545	0	0	3.927	0	0	44	0	0	228	0	272	0	272	0	272	0	
52 R	3.21	0.12	3.09	0.00	0.00	3	5	0.30	14.288	0	7.99	8.573	0	4	96	0	36	498	0	634	0	634	0	634	0	
53 R	13.77	0.00	13.77	0.00	0.00	24	24	0.30	63.590	0	0	38.154	0	0	426	0	0	2.215	0	2,642	0	2,642	0	2,642	0	
60 R	6.27	0.20	6.07	0.00	0.06	24	24	0.20	30.097	61	41.383	36	0	186	0	0	1,782	2	0	1,970	0	1,970	0	1,970	0	
61 R	0.85	0.02	0.81	0.00	0.01	5	5	0.50	3.751	0	1.26	2.251	0	1	29	0	6	137	0	172	0	172	0	172	0	
62 R	3.66	0.72	2.94	0.00	0.00	5	5	0.20	13.576	0	4.815	8.145	0	22	84	0	207	456	0	769	0	769	0	769	0	
63 R	1.63	0.00	1.63	0.00	0.00	7	7	0.20	7.550	0	1.069	4.530	0	0	47	0	254	0	300	0	300	0	300	0		
79 R-T	9.24	0.16	8.97	0.00	0.11	4	6	0.40	41.434	0	0	24.861	0	6	299	0	51	1,480	0	1,835	0	1,835	0	1,835	0	
80 R-T	2.79	0.00	2.79	0.00	0.00	4	6	0.40	12.867	0	7.720	0	0	93	0	0	460	0	552	0	552	0	552	0		
81 R-T	4.21	1.85	2.36	0.00	0.00	1	2	0.30	10.891	0	12.376	6.555	0	60	73	0	565	379	0	1,077	0	1,077	0	1,077	0	
Total	47.04	9.07	37.79	0.00	0.18	44.049	174.554	0	60.567	104.732	0	278	1,191	0	2,647	6.108	0	10,224	0	10,224	0	10,224	0	10,224	0	
38 R	53.07	6.14	40.42	0.00	6.50	0	0	0.00	183.676	0	39.576	110.206	0	0	0	0	0	0	0	0	0	0	0	0	0	
39 R	13.13	4.24	8.89	0.00	0.00	0	0	0.00	40.399	0	27.281	24.239	0	0	0	0	0	0	0	0	0	0	0	0	0	
40 R	108.37	11.58	50.09	46.70	0.00	0	0	0.00	227.628	218,760	74,559	136,577	181,571	0	0	0	0	0	0	0	0	0	0	0	0	
41 R	51.56	3.63	43.36	4.27	0.30	0	0	0.00	197.043	19,991	23,408	118,226	16,592	0	0	0	0	0	0	0	0	0	0	0	0	

Table L.2.1 Estimation of Damages Due to 1-Year Flood in the Study Area by District

Suburb- an area	District	No.	Share (%) of Residence				Unit Construction Price of Buildings (VNĐ1,000/m ²)				General Factors				Value of movables (%)				Formulae for calculation of damage rate						
			Residence		Semi.P.		Residence		Indus./ insti.		Building Density (%)		Tax (%)		Comm- cial		Resi- dence		Indus/ insti.		Buildings:		Movables(residence)		
			Perm.	Semi.P.	Temp	Temp	Perm.	Semi.P.	Temp	Temp	1,200	1,500	1,000	500	1,200	Depreciation (%)	22.9%	137.5%	60.0%	83.0%	y = -0.0005x ² + 0.0055x + 0.0051	y = 0.0051L _a (x) + 0.0642	y = 0.0042L _a (x) + 0.0604	y = 0.0063L _a (x) + 0.0532	
			34.9%	63.0%	2.1%	1.200	1,500	1,000	500	1,200	Depreciation (%)	22.9%	137.5%	60.0%	83.0%										
Suburb- an area	District 12	42	R	22.12	3.31	1.62	5.17	12.01	0	0	0.00	0.00	15,497	7,363	24,231	21,309	4,418	20,112	0	0	0	0	0	0	
	Total			248.24	28.60	144.39	56.14	18.81			135,370	656,108	262,982	186,134	393,665	218,275	0	0	0	0	0	0	0	0	
	The Duc		N	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	
	District 2	5	T	26.52	4.91	16.16	5.45	0.00	4	6	0.20	0.20	23,023	73,428	25,518	31,656	44,057	21,180	142	454	158	1,363	2,467	1,136	
		6	R	12.33	0.62	11.72	0.00	0.00	12	12	0.00	0.50	2,884	53,251	0	3,966	31,951	0	0	0	0	0	0	0	0
		7	T	27.86	6.91	0.00	14.22	6.73	4	6	0.20	0.20	32,354	0	66,597	44,486	0	55,276	200	0	412	1,916	0	2,965	5,492
		8	R	37.99	2.56	22.13	0.02	13.28	3	4	0.30	0.50	11,991	100,573	82	16,488	60,344	68	80	674	1	752	3,504	4	
		9	R	13.74	1.01	12.73	0.00	0.00	2	2	0.20	0.20	4,739	57,848	0	6,516	34,709	0	29	358	0	281	1,943	0	
		10	R	22.27	2.36	19.92	0.00	0.00	1	1	0.20	0.20	11,035	90,505	0	15,173	54,303	0	68	559	0	653	3,041	0	
	Total			140.72	18.36	82.66	19.68	20.01			86,025	375,605	92,197	118,285	223,363	76,524	2,045	570	4,965	10,954	4,105	23,159	0	0	
	District 9		N	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	
	District 7	24	R	14.65	3.16	11.49	0.00	0.00	6	12	0.30	0.50	14,805	52,195	0	20,357	31,317	0	99	350	0	929	1,818	0	
		25	R	97.14	7.53	88.42	0.00	1.19	2	6	0.20	0.40	35,267	401,770	0	48,492	241,062	0	218	2,483	0	2,088	13,498	0	
		26	T	68.98	18.62	40.54	6.99	2.82	3	4	0.20	0.30	87,219	184,237	32,766	119,926	110,542	27,196	539	1,139	202	5,164	6,189	1,459	
	Total			180.76	29.31	140.45	6.99	4.01			137,291	638,202	32,766	188,775	382,921	27,196	856	3,971	202	8,181	21,505	1,459	36,175	0	
	Binh	21	R	16.20	4.77	9.85	1.58	0.00	24	24	0.30	0.40	31,376	52,930	10,384	43,142	31,758	8,618	210	355	70	1,968	1,844	477	
	Chanh	22	R	1.66	1.29	0.00	0.36	0.00	24	24	0.20	0.30	8,510	0	2,391	11,701	0	1,984	53	0	15	504	0	106	
		23	R	0.53	0.53	0.00	0.00	0.00	1	2	0.20	0.40	3,502	0	0	4,815	0	0	22	0	0	207	0	0	
		77	R	7.03	1.03	0.00	0.00	6.00	4	4	0.20	0.20	6,812	0	0	9,366	0	0	42	0	0	403	0	0	
	Total			25.42	7.63	9.85	1.94	6.00			50,199	52,930	12,774	69,024	31,758	10,603	327	355	84	3,082	1,844	583	6,276	0	
	Nha Be		N	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	

Table L.2.2 Estimation of Damages Due to 10-Year Flood in the Study Area by District

Suburb- an area	72 R	49.14	Share (%) of Residence				Unit Construction Price of Buildings (VNĐ/1,000/m ²)				General Factors				Value of movables (%)				Formulae for calculation of damage rate						
			Residence		Comm- ercial		Residence		Comm- ercial		Building Density (%)		Commer- cial		Resi- dence		Indus./ inst.		Buildings:		Movables(residence)		Indus./ inst.		
			Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	Perm.	Semi.P.	Temp	56.2%	10.0%	22.9%	137.5%	60.0%	83.0%	83.0%	y = -0.0005x ² + 0.0055x - 0.0051	y = 0.0051Ln(x) + 0.0642	y = 0.0042Ln(x) + 0.0604	y = 0.0063Ln(x) + 0.0532			
			34.9%	63.0%	2.1%	1,200	1,500	1,000	500	1,200	1,500	1,000	500	1,200	1,500	1,000	500	1,200	1,500	1,000	500	1,200	1,500	1,000	500
	R	49.14	2.37	46.76	0.00	0.00	0.35	0.35	6.946	176,588	0	9,550	105,953	0	47	1,184	0	436	6,152	0	7,818	0	7,818	0	
	R	49.51	1.55	47.96	0.00	0.00	0.30	0.30	4,531	181,101	0	6,231	108,661	0	30	1,214	0	284	6,309	0	7,838	0	7,838	0	
	R	105.48	7.27	98.19	0.00	0.02	0.20	0.20	21,284	370,797	0	29,266	222,478	0	132	2,292	0	1,260	12,457	0	16,140	0	16,140	0	
	R	26.49	4.74	21.75	0.00	0.00	0.25	0.25	13,874	82,134	0	19,077	49,280	0	86	508	0	821	2,759	0	4,174	0	4,174	0	
	R	45.86	0.67	45.20	0.00	0.00	0.20	0.25	1,957	170,667	0	2,690	102,400	0	12	1,055	0	116	5,734	0	6,916	0	6,916	0	
	R	11.13	2.81	8.32	0.00	0.00	0.40	0.20	8,220	31,429	0	11,302	18,858	0	51	194	0	487	1,056	0	1,788	0	1,788	0	
	R	39.37	3.11	36.27	0.00	0.00	0.30	0.60	9,094	136,946	0	12,504	82,168	0	75	1,126	0	625	5,061	0	6,887	0	6,887	0	
	R-T	0.01	0.00	0.00	0.00	0.01	0.40	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	R-T	820.73	75.30	730.35	6.81	8.27	220,441	2,757,973	19,944	303,107	1,654,784	16,554	1,505	18,292	144	13,841	95,156	936	129,874	0	15,575	0	15,575	0	
Total																									
Bank	T	103.12	3.16	85.48	0.00	14.48	2	4	0.30	0.40	11,042	344,113	0	15,183	206,468	0	80	2,484	0	720	12,290	0	15,575	0	
Thanh	T	54.64	1.82	51.28	0.00	1.54	2	3	0.20	0.40	6,365	206,427	0	8,751	123,856	0	46	1,490	0	415	7,373	0	9,324	0	
	T	20.25	2.52	16.64	0.00	1.09	2	4	0.30	0.50	8,825	66,977	0	12,135	40,186	0	68	517	0	593	2,438	0	3,616	0	
	N	6.77	0.61	6.17	0.00	0.00	0.00	0.00	2,125	24,825	0	2,921	14,895	0	0	0	0	0	0	0	0	0	0	0	
	R-T	5.77	2.18	3.35	0.00	0.24	2	4	0.30	0.60	7,642	13,486	0	10,507	8,092	0	63	111	0	525	498	0	1,197	0	
	T	351.95	31.10	136.53	6.06	178.26	2	6	0.60	0.80	108,819	549,619	21,202	149,626	329,771	17,598	999	5,045	195	7,750	20,796	1,046	35,831	0	
	R-T	23.76	2.68	21.08	0.00	0.00	0.30	0.50	0	111,460	0	12,897	50,913	0	77	698	0	645	3,136	0	4,555	0	4,555	0	
	R	27.84	0.00	27.69	0.00	0.16	2	4	0.30	0.50	0	11,460	0	66,876	0	861	0	0	0	0	4,057	0	4,918	0	
	R	23.75	2.66	21.09	0.00	0.00	0.30	0.50	9,300	84,894	0	12,787	50,936	0	72	656	0	624	3,090	0	4,442	0	4,442	0	
	R	12.08	0.00	12.08	0.00	0.00	0.30	0.30	0	48,639	0	0	29,183	0	326	0	0	0	0	1,694	0	2,020	0		
	R	6.14	0.28	5.86	0.00	0.00	0.35	0.35	994	23,573	0	1,366	14,144	0	7	158	0	62	821	0	1,048	0	1,048	0	
Total																									
Phu	T	1.42	0.00	1.42	0.00	0.00	2	4	0.30	0.50	0	6,544	0	0	3,926	0	51	0	0	238	0	289	0	289	
Nhuan	R	3.21	0.12	3.09	0.00	0.00	3	5	0.30	0.50	581	14,284	0	799	8,571	0	4	110	0	39	520	0	674	0	
	R	13.77	0.00	13.77	0.00	0.00	24	24	0.30	0.30	0	63,572	0	0	38,143	0	426	0	0	2,215	0	2,641	0	2,641	
	R	6.27	6.20	0.01	0.00	0.06	24	24	0.20	0.20	30,097	61	41,383	36	186	0	0	1,782	2	0	1,970	0	1,970	0	
	R	0.85	0.02	0.81	0.00	0.01	5	5	0.50	0.50	91	3,750	0	126	2,250	0	1	29	0	6	136	0	172	0	
	R	3.66	0.72	2.94	0.00	0.00	5	5	0.20	0.20	3,502	13,572	0	4,815	8,143	0	22	84	0	207	456	0	769	0	
	R	1.63	0.00	1.63	0.00	0.00	7	7	0.20	0.20	0	7,548	0	0	4,529	0	47	0	0	254	0	300	0		
	R-T	9.24	0.16	8.97	0.00	0.11	4	6	0.40	0.60	777	41,422	0	1,069	24,853	0	6	340	0	53	1,531	0	1,931	0	
	R-T	2.79	0.00	2.79	0.00	0.00	4	6	0.40	0.60	0	12,863	0	0	7,718	0	106	0	0	475	0	581	0		
	R-T	4.21	1.85	2.36	0.00	0.00	1	2	0.30	0.50	9,001	10,888	0	12,376	6,533	0	70	84	0	604	396	0	1,154	0	
Total																									
District 12	R	47.04	9.07	37.79	0.00	0.18	44,049	174,503	0	60,567	104,702	0	269	1,277	0	2,692	6,223	0	10,482	0	10,482	0	10,482	0	
	R	13.17	4.24	8.89	0.00	0.60	0	0	0.00	0.00	39,555	110,147	0	0	0	0	0	0	0	0	0	0	0	0	
	R	108.37	11.58	50.09	46.70	0.00	0	0	0.00	0.00	19,830	40,377	0	27,266	24,226	0	0	0	0	0	0	0	0	0	
	R	51.56	3.63	43.36	4.27	0.30	0	0	0.00	0.00	17,015	196,937	19,990	23,396	118,162	16,584	0	0	0	0	0	0	0	0	

**Table L.2.3 Unit Damages to Buildings and Movables
Due to Inundation by District**

District	Total inun- dated area(ha)	Damages due to inundation (million VND)		Unit damages by District (million VND/ha)	
		1-year flood	10-year flood	1-year flood	10-year flood
District 1	27.11	4,296	4,505	158	166
District 3	65.72	14,318	15,287	218	233
District 4	18.11	3,627	3,914	200	216
District 5	146.65	39,666	45,293	270	309
District 6	336.21	76,475	81,444	227	242
District 8	204.79	47,547	49,577	232	242
District 10	56.49	12,574	14,087	223	249
District 11	98.77	21,730	24,570	220	249
D. Go Vap	337.73	55,863	56,448	165	167
D. Tan Binh	820.73	129,697	129,874	158	158
D. Binh Thanh	656.65	82,404	86,329	125	131
D. Phu Nhuan	47.04	10,224	10,482	217	223
District 12	248.24	0	0	0	0
D. Thu Duc	0.00	0	0	0	0
District 2	140.72	23,159	26,036	165	185
District 9	0.00	0	0	0	0
District 7	180.76	36,175	38,629	200	214
D. Binh Chanh	25.42	6,276	6,523	247	257
D. Nha Be	0.00	0	0	0	0
Total	3,411.14	564,031	592,998	165	174

Table I.2.4 Damages to Buildings and Movables by Scale of Flood in Each Zone in Present Urbanized Situation

Zone	No.	District	Inundated area (ha)	Unit damages (million VND/ha)		Damages (million VND) due to		
				1-year flood	10-year flood	1-year flood	10-year flood	
C-Zone	C-1	District 3	55.19	218	233	12,032	12,860	
		District 10	50.10	223	249	11,173	12,475	
		Go Vap	77.50	165	167	12,788	12,943	
		Tan Binh	158.52	158	158	25,046	25,046	
		Binh Thanh	87.36	125	131	10,920	11,444	
		Phu Nhuan	52.18	217	223	11,322	11,635	
		Total	480.85	-	-	83,281	86,404	
	C-2	Go Vap	5.43	165	167	896	907	
		Binh Thanh	175.08	125	131	21,885	22,936	
		Total	180.51	-	-	22,781	23,842	
	C-3	District 6	232.65	227	242	52,812	56,302	
		District 11	61.20	220	249	13,464	15,239	
		Tan Binh	135.36	158	158	21,386	21,386	
		Bin Chanh	16.20	247	257	4,002	4,164	
		Total	445.41	-	-	91,664	97,091	
	C-4	District 1	34.31	158	166	5,421	5,695	
		District 3	10.27	218	233	2,239	2,393	
		District 4	30.08	200	216	6,016	6,497	
		District 5	147.32	270	309	39,775	45,520	
		District 6	103.55	227	242	23,506	25,059	
		District 8	201.64	232	242	46,781	48,798	
		District 10	13.20	223	249	2,943	3,287	
		District 11	39.27	220	249	8,639	9,778	
		Tan Binh	38.98	225	226	8,771	8,810	
		Total	618.62	-	-	144,091	155,837	
	C-a	Binh Thanh	372.66	125	131	46,582	48,818	
		Total	372.66	-	-	46,582	48,818	
	C-b	Binh Thanh	22.15	125	131	2,769	2,902	
		Total	22.15	-	-	2,769	2,902	
	Total of C-Zone			2,120.20	-	-	391,169	414,894
	N-Zone	N-2	Go Vap	254.63	165	167	42,014	42,523
			Tan Binh	237.79	158	158	37,571	37,571
			District 12	253.85	0	0	0	0
			FUA*	931.68	165	174	153,727	162,112
		Total of N-Zone	1,677.96	-	-	233,313	242,207	
	W-Zone	W-1	District 6	12.30	227	242	2,793	2,977
			District 8	2.20	232	242	511	533
			Tan Binh	250.20	158	158	39,532	39,532
			Binh Chanh	9.21	219	228	2,016	2,099
		Total of W-Zone	273.92	-	-	44,852	45,142	
	S-Zone	S-3	District 7	145.97	200	214	29,194	31,238
			Total	145.97	-	-	29,194	31,238
		S-5	District 7	6.84	200	214	1,368	1,464
			Total	6.84	-	-	1,368	1,464
		S-b	District 7	27.78	200	214	5,556	5,945
			Total	27.78	-	-	5,556	5,945
		Total of S-Zone	180.59	-	-	36,118	38,647	
SE-Zone	SE-2	District 2	12.30	165	185	2,029	2,275	
		Total	12.30	-	-	2,029	2,275	
	SE-4	District 2	22.33	165	185	3,684	4,130	
		Total	22.33	-	-	3,684	4,130	
	SE-a	District 2	51.77	165	185	8,543	9,578	
		Total	51.77	-	-	8,543	9,578	
	SE-b	District 2	54.18	165	185	8,940	10,024	
		Total	54.18	-	-	8,940	10,024	
	Total of SE-Zone	140.58	-	-	23,197	26,008		
	Grand total			4,393.25	-	-	728,649	766,898

(Note) *: Classified as future urbanized area, but has already been urbanized at present.

Table I.2.5 Distribution of Inundated Area in Future Urbanized Situation

Zone	No.	District	Total inundated area (ha)	Built-up inundated Area		Agricultural inundated area	
				Present (ha)	Future (ha)	Present (ha)	Future (ha)
C-Zone	C-1	District 3		55.19			
		District 10		50.10			
		Go Vap		77.50			
		Tan Binh		158.52			
		Binh Thanh		87.36			
		Phu Nhuan		52.18			
		Total	480.85	480.85			
	C-2	Go Vap		5.43			
		Binh Thanh		175.08			
		Total	180.51	180.51			
	C-3	District 6		232.65			
		District 11		61.20			
		Tan Binh		135.36			
		Bin Chanh		16.20			
		Total	445.41	445.41			
	C-4	District 1		34.31			
		District 3		10.27			
		District 4		30.08			
		District 5		147.32			
		District 6		103.55			
		District 8		201.64			
		District 10		13.20			
		District 11		39.27			
Tan Binh			38.98				
Total		1,540.42	618.62	1,079.52	921.80	460.90	
C-a	Binh Thanh		372.66				
	Total	372.66	372.66				
C-b	Binh Thanh		22.15				
	Total	22.15	22.15				
Total of C-Zone			3,042.00	2,120.20	2,581.10	921.80	460.90
N-Zone	N-2	Go Vap		254.63			
		Tan Binh		237.79			
		District 12		253.85			
	Total of N-Zone	3,851.88	746.28	2,299.08	3,105.60	1,552.80	
W-Zone	W-1	District 6		12.30			
		District 8		2.20			
		Tan Binh		250.20			
		Binh Chanh		9.21			
	Total of W-Zone	3,464.22	273.92	1,869.07	3,190.30	1,595.15	
S-Zone	S-3	District 7		145.97			
		Total		145.97			
	S-5	District 7		6.84			
		Total		6.84			
	S-b	District 7		27.78			
		Total		27.78			
Total of S-Zone	6,048.99	180.59	3,114.79	5,868.40	2,934.20		
NE-Zone			1,637.20	0.00	818.60	1,637.20	818.60
SE-Zone	SE-2	District 2		12.30			
		Total		12.30			
	SE-4	District 2		22.33			
		Total		22.33			
	SE-a	District 2		51.77			
		Total		51.77			
	SE-b	District 2		54.18			
		Total		54.18			
	Total of SE-Zone	8,484.38	140.58	4,312.48	8,343.80	4,171.90	
	Grand total			26,528.67	3,461.57	14,995.12	23,067.10

Table L.2.6 Damages to Buildings and Movables by Scale of Flood in Each Zone in Future Urbanized Situation

Zone	No.	District	Inundated area (ha)	Unit damages (million VND/ha)		(Note) * : Future urbanized area Damages (million VND) due to		
				1-year flood	10-year flood	1-year flood	10-year flood	
C-Zone	C-1	District 3	55.19	218	233	12,032	12,860	
		District 10	50.10	223	249	11,173	12,475	
		Go Vap	77.50	165	167	12,788	12,943	
		Tan Binh	158.52	158	158	25,046	25,046	
		Binh Thanh	87.36	125	131	10,920	11,444	
		Phu Nhuan	52.18	217	223	11,322	11,635	
		Total	480.85	-	-	83,281	86,404	
		C-2	Go Vap	5.43	165	167	896	907
			Binh Thanh	175.08	158	158	27,663	27,663
			Total	180.51	-	-	28,558	28,569
		C-3	District 6	232.65	227	242	52,812	56,302
			District 11	61.20	220	249	13,464	15,239
			Tan Binh	135.36	158	158	21,386	21,386
			Bin Chanh	16.20	247	257	4,002	4,164
			Total	445.41	-	-	91,664	97,091
		C-4	District 1	34.31	158	166	5,421	5,695
			District 3	10.27	218	233	2,239	2,393
			District 4	30.08	200	216	6,016	6,497
			District 5	147.32	270	309	39,775	45,520
			District 6	103.55	227	242	23,506	25,059
			District 8	201.64	232	242	46,781	48,798
			District 10	13.20	223	249	2,943	3,287
			District 11	39.27	220	249	8,639	9,778
			Tan Binh	38.98	158	158	6,159	6,159
			FUA*	460.90	165	174	76,049	80,197
			Total	1,079.52	-	-	217,528	233,383
		C-a	Binh Thanh	372.66	125	131	46,582	48,818
	Total		372.66	-	-	46,582	48,818	
	C-b	Binh Thanh	22.15	125	131	2,769	2,902	
		Total	22.15	-	-	2,769	2,902	
	Total of C-Zone		2,581.10	-	-	470,383	497,167	
N-Zone	N-2	Go Vap	254.63	165	167	42,014	42,523	
		Tan Binh	237.79	158	158	37,571	37,571	
		District 12	253.85	0	0	0	0	
		FUA*	1,552.80	165	174	256,212	270,187	
	Total of N-Zone		2,299.08	-	-	335,797	350,282	
W-Zone	W-1	District 6	12.30	227	242	2,793	2,977	
		District 8	2.20	232	242	511	533	
		Tan Binh	250.20	158	158	39,532	39,532	
		Binh Chanh	9.21	247	257	2,274	2,366	
		FUA*	1,595.15	165	174	263,200	277,556	
	Total of W-Zone		1,869.07	-	-	308,310	322,965	
S-Zone	S-3	District 7	145.97	200	214	29,194	31,238	
		Total	145.97	-	-	29,194	31,238	
	S-5	District 7	6.84	200	214	1,368	1,464	
		Total	6.84	-	-	1,368	1,464	
	S-b	District 7	27.78	200	214	5,556	5,945	
		Total	27.78	-	-	5,556	5,945	
		FUA*	2,934.20	165	174	484,143	510,551	
		Total of S-Zone		3,114.79	-	-	520,261	549,198
NE-Zone	FUA*		818.60	165	174	135,069	142,436	
SE-Zone	SE-2	District 2	12.30	165	185	2,029	2,275	
		Total	12.30	-	-	2,029	2,275	
	SE-4	District 2	22.33	165	185	3,684	4,130	
		Total	22.33	-	-	3,684	4,130	
	SE-a	District 2	51.77	165	185	8,543	9,578	
		Total	51.77	-	-	8,543	9,578	
	SE-b	District 2	54.18	165	185	8,940	10,024	
		Total	54.18	-	-	8,940	10,024	
		FUA*	4,171.90	165	174	688,364	725,911	
		Total of SE-Zone		4,312.48	-	-	711,560	751,919
Grand total			14,995.12	-	-	2,481,381	2,613,966	

(Note) * : Classified as future urbanized area.

Table L.2.7 Average Annual Damages to Buildings and Movables in Each Zone

A. In Present Urbanized Situation

Zone	Return period	Probability of exceedance	Annual probability	Damages in each return period (mil.VND)	Average amount of assumed damages (mil.VND)	Average annual damages (mil.VND)	Cumulative total of average annual damages (mil.VND)
C-Zone	1	1.00000	-	391,169	-	-	-
	10	0.10000	0.90000	414,894	403,032	362,728	362,728
N-Zone	1	1.00000	-	233,313	-	-	-
	10	0.10000	0.90000	242,207	237,760	213,984	213,984
W-Zone	1	1.00000	-	44,852	-	-	-
	10	0.10000	0.90000	45,142	44,997	40,497	40,497
S-Zone	1	1.00000	-	36,118	-	-	-
	10	0.10000	0.90000	38,647	37,383	33,644	33,644
SE-Zone	1	1.00000	-	23,197	-	-	-
	10	0.10000	0.90000	26,008	24,603	22,142	22,142
Total	-	-	-	-	-	-	672,996

B. In Future Urbanized Situation

Zone	Return period	Probability of exceedance	Annual probability	Damages in each return period (mil.VND)	Average amount of assumed damages (mil.VND)	Average annual damages (mil.VND)	Cumulative total of average annual damages (mil.VND)
C-Zone	1	1.00000	-	470,383	-	-	-
	10	0.10000	0.90000	497,167	483,775	435,398	435,398
N-Zone	1	1.00000	-	335,797	-	-	-
	10	0.10000	0.90000	350,282	343,040	308,736	308,736
W-Zone	1	1.00000	-	308,310	-	-	-
	10	0.10000	0.90000	322,965	315,638	284,074	284,074
S-Zone	1	1.00000	-	520,261	-	-	-
	10	0.10000	0.90000	549,198	534,730	481,257	481,257
NE-Zone	1	1.00000	-	135,069	-	-	-
	10	0.10000	0.90000	142,436	138,753	124,877	124,877
SE-Zone	1	1.00000	-	711,560	-	-	-
	10	0.10000	0.90000	751,919	731,740	658,566	658,566
Total	-	-	-	-	-	-	2,292,906

Table L.2.8 Annual Average Damages to Public Facilities

A. In Present Urbanized Situation

Zone	Total inundated area (built-up area) (ha)	Area of inundated public facilities (ha)	Annual average damages (million VNĐ)
C-Zone	2,120.20	928.01	3,248
N-Zone	1,677.96 *	734.44	2,571
W-Zone	273.92	119.89	420
S-Zone	180.59	79.04	277
NE-Zone	0.00	0.00	0
SE-Zone	140.58	61.53	215
Total	4,393.25	1,922.93	6,730
(Remarks) 1.	Building density:	56.2%	
2.	Unit damages:	3,500 (VNĐ1,000/ha)	

(Note) * : Assumed that 30 % of agricultural area is already urbanized.

B. In Future Urbanized Situation

Zone		Total inundated area (built-up area) (ha)	Area of inundated public facilities (ha)	Annual average damages (million VNĐ)
C-Zone	Present	2,120.20	928.01	3,248
	Future	460.90	298.76	1,046
	Total	2,581.10	1,226.77	4,294
N-Zone	Present	746.28	326.65	1,143
	Future	1,552.80	1,006.52	3,523
	Total	2,299.08	1,333.17	4,666
W-Zone	Present	273.92	119.89	420
	Future	1,595.15	1,033.98	3,619
	Total	1,869.07	1,153.87	4,039
S-Zone	Present	180.59	79.04	277
	Future	2,934.20	1,901.95	6,657
	Total	3,114.79	1,980.99	6,933
NE-Zone	Present	0.00	0.00	0
	Future	818.60	530.62	1,857
	Total	818.60	530.62	1,857
SE-Zone	Present	140.58	61.53	215
	Future	4,171.90	2,704.23	9,465
	Total	4,312.48	2,765.76	9,680
Total		14,995.12	8,991.18	31,469
(Remarks) 1.	Building density:		56.2% (at present)	
			35.2% (in future)	
2.	Unit damages:		3,500 (VNĐ1,000/ha)	

Table L.2.9 Cultivated Area, Production, Output, Farm Gate Price of Paddy in Ho Chi Minh City

By District	Cultivated Area (ha) : Total												Annual average growth ratio(%)											
	First crops (Winter-Spring Crops)				Second crops (Summer-Autumn Crops)				Third (the Last) crops (Winter Crops)					Total										
	1994	1995	1996	1997	1994	1995	1996	1997	1994	1995	1996	1997		1994	1995	1996	1997	1998	1999					
District 6 & 8	79	81	85	49	25	50	125	84	102	88	88	78	468	451	410	357	319	593	535	512	445	397	-9.13%	
District 7																								-27.16%
Go Vap District																								49.62%
Tan Binh District																								-6.42%
Binh Thanh District																								-8.48%
Hoc Month District	2,054	1,938	1,915	1,503	1,514	1,377	1,428	1,486	1,005	845	845	845	5,296	5,258	4,913	4,181	4,293	8,727	8,624	8,314	6,089	6,652	-47.18%	
Thu Duc District	1,844	2,046	2,159	431	415	2,797	2,815	3,135	524	497	497	497	6,718	6,533	6,146	7,19	626	11,359	11,394	11,440	1,674	1,538	0.19%	
Binh Chanh District																								-6.84%
Nha Be District	6,820	6,802	7,135	9,721	9,640	5,386	5,674	6,005	7,400	7,939	7,939	21,457	20,938	20,946	26,431	23,720	33,663	33,414	34,086	43,552	41,299	43,552	-8.95%	
Others	10,797	10,867	11,294	11,780	11,594	13,637	13,940	15,145	13,498	13,611	13,611	55,562	54,732	53,888	51,636	48,398	79,996	79,539	80,327	76,914	73,603	73,603	-1.30%	
Total																								-8.03%
Yield (ton)																								-26.41%
District 6 & 8	254	278	255	167	81	155	560	421	534	385	385	288	1,993	2,030	1,850	1,601	1,340	2,553	2,451	2,384	1,986	1,628	22.35%	
District 7																								-10.59%
Go Vap District																								-6.53%
Tan Binh District																								-43.93%
Binh Thanh District	7,019	6,879	7,019	6,316	5,072	4,406	4,529	4,768	3,233	2,501	2,501	16,127	17,489	11,211	12,952	12,464	27,552	28,897	22,998	22,501	20,037	20,037	1.43%	
Hoc Month District	5,472	6,452	6,485	1,245	1,419	9,550	9,563	10,067	1,744	1,746	1,746	15,586	18,039	10,492	2,405	1,941	30,608	34,054	27,044	5,394	5,106	5,106	-8.84%	
Thu Duc District																								9.05%
Binh Chanh District																								-0.35%
Nha Be District	22,631	22,694	26,520	33,584	34,678	17,674	19,178	20,802	23,061	26,184	26,184	62,587	61,932	42,791	76,769	64,591	102,892	103,804	90,113	133,414	125,453	125,453		
Others	35,376	36,303	40,279	41,312	41,250	46,584	49,683	53,863	43,192	45,303	45,303	155,665	161,310	110,617	150,662	130,674	237,625	247,296	204,759	235,166	217,227	217,227		
Total																								
Unit Yield (ton/ha)																								
District 6 & 8	3.22	3.43	3.00	3.41	3.24	3.10	4.48	5.01	5.24	4.38	4.38	3.69	4.26	4.50	4.51	4.48	4.20	4.31	4.58	4.66	4.46	4.10		
District 7																								
Go Vap District																								
Tan Binh District																								
Binh Thanh District	3.42	3.55	3.67	4.20	3.35	3.20	3.41	3.40	3.21	3.33	3.33	3.51	2.82	2.76	1.71	3.34	3.10	2.98	3.30	2.73	3.09	3.03	Overall average	
Hoc Month District	2.97	3.15	3.00	2.89	3.42	3.64	4.08	4.02	3.30	3.30	3.30	3.44	2.57	2.30	1.28	2.41	1.80	2.57	2.30	1.28	2.41	1.80	unit yield	
Thu Duc District																								throughout
Binh Chanh District																								1.80 last 5 years
Nha Be District	3.32	3.34	3.72	3.45	3.60	3.28	3.38	3.46	3.12	3.12	3.30	3.30	2.92	2.96	2.04	2.90	2.72	3.06	3.11	2.64	3.06	3.04	(ton/ha)	
Others	3.23	3.37	3.35	3.49	3.40	3.58	3.62	3.64	3.31	3.31	2.87	2.87	2.98	3.08	2.37	2.97	2.83	3.10	3.18	2.63	3.02	2.61	2.91	
Overall average																								
Output (VN\$ million) in Ho Chi Minh City																								
Farm Gate Price of Paddy (VN\$1,000/ton)																								
Source : Statistical Yearbook 1997, Ho Chi Minh City Service of Culture and Information, January 1998.																								

Table L.2.10 Cultivated Area, Production, Output, Farm Gate Price of Other Agricultural Products in Ho Chi Minh City

By District	Annual situation					Annual average growth ratio(%)
	1994	1995	1996	1997	1998	
Cultivated Area (ha) :						
Vegetables and Beans						
District 6 & 8	191	414	369	314	232	4.98%
Go Vap District	1,720	1,774	1,427	1,242	1,071	-11.17%
Tan Binh District	371	351	351	335	293	-5.73%
Binh Thanh District	8	5	2	3	2	-29.29%
Hoc Monh District	3,489	4,076	3,922	2,041	1,978	-13.23%
Thu Duc District	652	586	685	593	674	0.83%
Binh Chanh District	3,563	2,934	2,715	2,847	2,706	-6.65%
Nha Be District	5	5	5	8	8	12.47%
Others	2,851	3,015	3,034	4,850	4,160	9.91%
Total	12,850	13,160	12,510	12,233	11,124	-3.54%
Industrial crops : Sugar cane						
Binh Chanh District	2,957	3,112	3,240	2,995	3,058	0.84%
Others	2,733	2,602	2,167	1,698	1,411	-15.23%
Total	5,690	5,714	5,407	4,693	4,469	-5.86%
Yield (ton)						
Vegetables and Beans						
District 6 & 8	7,741	11,049	14,870	11,470	6,937	-2.70%
Go Vap District	39,815	38,853	29,090	24,467	21,147	-14.63%
Tan Binh District	7,266	6,804	6,453	5,693	4,966	-9.08%
Binh Thanh District	339	179	80	111	65	-33.83%
Hoc Monh District	64,846	74,643	70,348	39,665	38,400	-12.28%
Thu Duc District	24,000	20,501	22,211	16,808	17,497	-7.60%
Binh Chanh District	103,302	83,348	75,469	64,204	51,526	-15.96%
Nha Be District	175	175	175	160	160	-2.22%
Others	46,077	51,328	50,068	82,367	71,690	11.68%
Total	293,561	286,880	268,764	244,945	212,388	-7.77%
Industrial crops : Sugar cane						
Binh Chanh District	145,145	116,917	87,742	121,979	156,714	1.94%
Others	128,947	155,127	108,113	86,449	73,736	-13.04%
Sub-total	274,092	272,044	195,855	208,428	230,450	-4.24%
Other industrial crops : other districts	14,563	13,579	13,460	11,034	11,833	-5.06%
Total	288,655	285,623	209,315	219,462	242,283	-4.28%
Unit Yield (ton/ha)						
Vegetables and Beans						
District 6 & 8	40.53	26.69	40.30	36.53	29.90	
Go Vap District	23.15	21.90	20.39	19.70	19.75	
Tan Binh District	19.58	19.38	18.38	16.99	16.95	
Binh Thanh District	42.38	35.80	40.00	37.00	32.50	
Hoc Monh District	18.59	18.31	17.94	19.43	19.41	
Thu Duc District	36.81	34.98	32.42	28.34	25.96	
Binh Chanh District	28.99	28.41	27.80	22.55	19.04	
Nha Be District	35.00	35.00	35.00	20.00	20.00	
Others	16.16	17.02	16.50	16.98	17.23	
Average	29.02	26.39	27.64	24.17	22.30	25.90
Industrial crops : Sugar cane						
Binh Chanh District	49.09	37.57	27.08	40.73	51.25	
Others	47.18	59.62	49.89	50.91	52.26	
Total	48.13	48.59	38.49	45.82	51.75	46.56
Output (VND million) in Ho Chi Minh City						
Vegetables and beans:	263,332	261,863	275,151	248,804	219,528	-4.45%
Industrial crops(sugar cane & others):	181,942	184,212	168,444	155,765	147,868	-5.05%
Farm Gate Price of Other Agricultural Products (VND1,000/ton)						
Vegetables and beans:	897	913	1,024	1,016	1,034	3.61%
Sugar cane:	630	645	805	710	610	-0.80%

Source : Statistical Yearbook 1997/1998, Ho Chi Minh City Service of Culture and Information, January 1998/1999.

**Table L.2.11 Percentage of Decrease in Yield of Paddy
Due to Inundation by Growing Stage**

		(%)			
Flooding condition		Tillering stage	Booting stage	Heading time	Ripening stage
Overhead flooding	1 - 2 days	10	70	30	5
	3 - 4 days	20	80	80	20
	5 - 6 days	30	85	90	30
	Over 7 days	35	95	100	30
Inundation up to 75 % of plant height	1 - 2 days	6	40	10	4
	3 - 4 days	9	46	23	15
	5 - 6 days	14	49	26	23
	Over 7 days	16	55	30	23
Inundation up to 50 % of plant height	1 - 2 days	4	37	8	2
	3 - 4 days	9	42	22	4
	5 - 6 days	13	45	25	6
	Over 7 days	15	50	28	6

Source : Results of experiments made by Dr. S. Matsushima in Malaysia in 1968.

Table L.2.12 Damages to Paddy by Scale of Flood in Each Zone in Present Urbanized Situation

Zone	No.	Inundat- ed area (Agri. land) (ha)	Inundation depth		Duration		% of decrease in paddy		Damages (million VND) due to:	
			1-year flood (cm)	10-year flood (cm)	1-year flood (day)	10-year flood (day)	1-year flood	10-year flood	1-year flood	10-year flood
C-Zone	C.4	921.80	28.0	52.0	Less than 1	1	0%	37%	0	1,142
N-Zone	N.1	162.05 *	50.0	80.0	More than 7	More than 7	55%	95%	299	516
	N.2	1,472.38 *	26.0	26.0	Less than 1	Less than 1	0%	0%	0	0
	N.a	539.49 *	50.0	80.0	More than 7	More than 7	55%	95%	994	1,717
	Total	2,173.92							1,292	2,232
W-Zone	W.1	3,190.30	22.0	23.0	Less than 1	Less than 1	0%	0%	0	0
S-Zone	S.1	1,128.50	50.0	80.0	3 - 4	3 - 4	46%	80%	1,739	3,024
	S.2	1,053.40	50.0	80.0	3 - 4	3 - 4	46%	80%	1,623	2,823
	S.3	2,730.00	21.0	30.0	Less than 1	Less than 1	0%	0%	0	0
	S.5	91.20	20.0	25.0	Less than 1	Less than 1	0%	0%	0	0
	S.b	340.00	20.0	25.0	Less than 1	Less than 1	0%	0%	0	0
	S.c	525.30	50.0	80.0	3 - 4	3 - 4	46%	80%	809	1,408
	Total	5,868.40							4,171	7,254
NE-Zone	NE.1	326.20	50.0	80.0	More than 7	More than 7	55%	95%	601	1,038
	NE.2	637.50	50.0	80.0	More than 7	More than 7	55%	95%	1,174	2,029
	NE.5	279.80	50.0	80.0	More than 7	More than 7	55%	95%	515	890
	NE.a	368.00	50.0	80.0	More than 7	More than 7	55%	95%	678	1,171
	NE.b	25.70	50.0	80.0	More than 7	More than 7	55%	95%	47	82
	Total	1,637.20							3,016	5,210
SE-Zone	SE.1	155.70	50.0	80.0	More than 7	More than 7	55%	95%	287	495
	SE.2	85.60	20.0	35.0	1	1	37%	37%	106	106
	SE.4	515.40	20.0	20.0	Less than 1	Less than 1	0%	0%	0	0
	SE.5	281.00	50.0	80.0	More than 7	More than 7	55%	95%	518	894
	SE.6	324.70	50.0	80.0	More than 7	More than 7	55%	95%	598	1,033
	SE.7	818.40	50.0	80.0	More than 7	More than 7	55%	95%	1,508	2,604
	SE.8	889.60	50.0	80.0	More than 7	More than 7	55%	95%	1,639	2,831
	SE.9	1,582.20	50.0	80.0	More than 7	More than 7	55%	95%	2,915	5,035
	SE.10	2,201.80	50.0	80.0	More than 7	More than 7	55%	95%	4,056	7,006
	SE.b	241.70	20.0	30.0	Less than 1	Less than 1	0%	0%	0	0
	SE.c	123.60	50.0	80.0	More than 7	More than 7	55%	95%	228	393
	SE.d	20.10	50.0	80.0	More than 7	More than 7	55%	95%	37	64
	SE.e	262.40	50.0	80.0	More than 7	More than 7	55%	95%	483	835
SE.f	841.60	50.0	80.0	More than 7	More than 7	55%	95%	1,550	2,678	
	Total	8,343.80							13,925	23,975
Grand total									22,404	39,813
Remarks : Farm gate price of paddy as of 1998 -					1,673 (VND1,000/ton)					
Unit yield of paddy -					2.91 (ton/ha, average yield since 1994)					
Damaged rate of total paddy production -					68.80% (The third crops = winter crops are damaged during the flooding season. Average percentage since 1994)					

(Note) * Assumed that 30 % of agricultural area is already urbanized, so deducted.

Table L.2.13 Damages to Paddy by Scale of Flood in Each Zone in Future Urbanized Situation

Zone	No.	Inundat- ed area (Agri. land (ha))	Inundation depth		Duration		% of decrease in paddy		Damages (million VND) due to:	
			1-year flood (cm)	10-year flood (cm)	1-year flood (day)	10-year flood (day)	1-year flood	10-year flood	1-year flood	10-year flood
C-Zone	C.4	460.90	28.0	52.0	Less than 1	1	0%	37%	0	571
N-Zone	N.1	115.75	50.0	80.0	More than 7	More than 7	55%	95%	213	368
	N.2	1,051.70	26.0	26.0	Less than 1	Less than 1	0%	0%	0	0
	N.a	385.35	50.0	80.0	More than 7	More than 7	55%	95%	710	1,226
	Total	1,552.80							923	1,595
W-Zone	W.1	1,595.15	22.0	23.0	Less than 1	Less than 1	0%	0%	0	0
S-Zone	S.1	564.25	50.0	80.0	3 - 4	3 - 4	46%	80%	869	1,512
	S.2	526.70	50.0	80.0	3 - 4	3 - 4	46%	80%	812	1,411
	S.3	1,365.00	21.0	30.0	Less than 1	Less than 1	0%	0%	0	0
	S.5	45.60	20.0	25.0	Less than 1	Less than 1	0%	0%	0	0
	S.b	170.00	20.0	25.0	Less than 1	Less than 1	0%	0%	0	0
	S.c	262.65	50.0	80.0	3 - 4	3 - 4	46%	80%	405	704
	Total	2,934.20							2,086	3,627
NE-Zone	NE.1	163.10	50.0	80.0	More than 7	More than 7	55%	95%	300	519
	NE.2	318.75	50.0	80.0	More than 7	More than 7	55%	95%	587	1,014
	NE.5	139.90	50.0	80.0	More than 7	More than 7	55%	95%	258	445
	NE.a	184.00	50.0	80.0	More than 7	More than 7	55%	95%	339	585
	NE.b	12.85	50.0	80.0	More than 7	More than 7	55%	95%	24	41
	Total	818.60							1,508	2,605
SE-Zone	SE.1	77.85	50.0	80.0	More than 7	More than 7	55%	95%	143	248
	SE.2	42.80	20.0	35.0	1	1	37%	37%	53	53
	SE.4	257.70	20.0	20.0	Less than 1	Less than 1	0%	0%	0	0
	SE.5	140.50	50.0	80.0	More than 7	More than 7	55%	95%	259	447
	SE.6	162.35	50.0	80.0	More than 7	More than 7	55%	95%	299	517
	SE.7	409.20	50.0	80.0	More than 7	More than 7	55%	95%	754	1,302
	SE.8	444.80	50.0	80.0	More than 7	More than 7	55%	95%	819	1,415
	SE.9	791.10	50.0	80.0	More than 7	More than 7	55%	95%	1,457	2,517
	SE.10	1,100.90	50.0	80.0	More than 7	More than 7	55%	95%	2,028	3,503
	SE.b	120.85	20.0	30.0	Less than 1	Less than 1	0%	0%	0	0
	SE.c	61.80	50.0	80.0	More than 7	More than 7	55%	95%	114	197
	SE.d	10.05	50.0	80.0	More than 7	More than 7	55%	95%	19	32
	SE.e	131.20	50.0	80.0	More than 7	More than 7	55%	95%	242	417
SE.f	420.80	50.0	80.0	More than 7	More than 7	55%	95%	775	1,339	
	Total	4,171.90							6,962	11,987
Grand total									11,479	20,385
Remarks : Farm gate price of paddy as of 1998 -					1,673 (VND1,000/ton)					
Unit yield of paddy -					2.91 (ton/ha, average yield since 1994)					
Damaged rate of total paddy production -					68.80% (The third crops = winter crops are damaged during the flooding season. Average percentage since 1994)					

Table L.2.14 Average Annual Damages to Paddy in Each Zone

A. In Present Urbanized Situation

Zone	Return period	Probability of exceedance	Annual probability	Damages in each return period	Average amount of assumed damages	Average annual damages	Cumulative total of average annual damages
				(mil.VND)	(mil.VND)	(mil.VND)	(mil.VND)
C-Zone	1	1.00000	-	0	-	-	-
	10	0.10000	0.90000	1,142	571	514	514
N-Zone	1	1.00000	-	1,292	-	-	-
	10	0.10000	0.90000	2,232	1,762	1,586	1,586
W-Zone	1	1.00000	-	0	-	-	-
	10	0.10000	0.90000	0	0	0	0
S-Zone	1	1.00000	-	4,171	-	-	-
	10	0.10000	0.90000	7,254	5,713	5,141	5,141
NE-Zone	1	1.00000	-	3,016	-	-	-
	10	0.10000	0.90000	5,210	4,113	3,702	3,702
SE-Zone	1	1.00000	-	13,925	-	-	-
	10	0.10000	0.90000	23,975	18,950	17,055	17,055
Total	-	-	-	-	-	-	27,998

B. In Future Urbanized Situation

Zone	Return period	Probability of exceedance	Annual probability	Damages in each return period	Average amount of assumed damages	Average annual damages	Cumulative total of average annual damages
				(mil.VND)	(mil.VND)	(mil.VND)	(mil.VND)
C-Zone	1	1.00000	-	0	-	-	-
	10	0.10000	0.90000	571	286	257	257
N-Zone	1	1.00000	-	923	-	-	-
	10	0.10000	0.90000	1,595	1,259	1,133	1,133
W-Zone	1	1.00000	-	0	-	-	-
	10	0.10000	0.90000	0	0	0	0
S-Zone	1	1.00000	-	2,086	-	-	-
	10	0.10000	0.90000	3,627	2,857	2,571	2,571
NE-Zone	1	1.00000	-	1,508	-	-	-
	10	0.10000	0.90000	2,605	2,057	1,851	1,851
SE-Zone	1	1.00000	-	6,962	-	-	-
	10	0.10000	0.90000	11,987	9,475	8,527	8,527
Total	-	-	-	-	-	-	14,339

Table L.2.15 Summary of Average Annual Direct Damages

Zone	Kind of direct damages	In Vietnamese Dong (million VND)			
		At present	In future(full)	In future(by Project)	
C-Zone	Buildings and movables	362,728	435,398	435,398	
	Public facilities	3,248	4,294	4,294	
	Agricultural crops (paddy)	514	257	257	
	Total	366,490	439,949	439,949	
N-Zone	Buildings and movables	213,984	308,736	268,463	
	Public facilities	2,571	4,666	3,776	
	Agricultural crops (paddy)	1,586	1,133	1,133	
	Total	218,141	314,535	273,371	
W-Zone	Buildings and movables	40,497	284,074	115,990	
	Public facilities	420	4,039	1,542	
	Agricultural crops (paddy)	0	0	0	
	Total	40,917	288,113	117,531	
S-Zone	Buildings and movables	33,644	481,257	113,877	
	Public facilities	277	6,933	1,470	
	Agricultural crops (paddy)	5,141	2,571	2,571	
	Total	39,062	490,761	117,918	
NE-Zone	Buildings and movables	0	124,877	61,899	
	Public facilities	0	1,857	920	
	Agricultural crops (paddy)	3,702	1,851	1,851	
	Total	3,702	128,585	64,670	
SE-Zone	Buildings and movables	22,142	658,566	117,306	
	Public facilities	215	9,680	1,630	
	Agricultural crops (paddy)	17,055	8,527	8,527	
	Total	39,412	676,773	127,463	
Whole study area	Buildings and movables	672,995	2,292,908	1,112,933	
	Public facilities	6,731	31,469	13,632	
	Agricultural crops (paddy)	27,998	14,339	14,339	
	Total	707,724	2,338,716	1,140,904	
(Note)	Cost share rate in future	Drainage	City planning		Total
	C-Zone	3,856.4 100%	0.0 0%	3,856.4 100%	
	N-Zone	2,649.2 57%	1,958.4 43%	4,607.6 100%	
	W-Zone	1,243.7 31%	2,769.1 69%	4,012.8 100%	
	S-Zone	883.4 18%	4,045.0 82%	4,928.4 100%	
	NE-Zone	1,559.7 50%	1,586.9 50%	3,146.6 100%	
	SE-Zone	1,031.2 15%	5,865.1 85%	6,896.3 100%	
	Total	11,223.7 41%	16,224.5 59%	27,448.2 100%	

Table I.2.16 Income by Source and Share Rate of Trading and Services in the Study Area

District	Item	Income by income sources							Total	Share rate(%) of trading services	
		Small industries	Handicraft	Trading	Service (hairdress, car bike garage)	Government officials	Police, armies	Agriculture			Others
District 1	No. of samples	0	7	13	9	18	0	0	47	46.81%	
	Income in total (1,000VND)	0	19,700	42,400	28,800	58,100	0	0			
	Average monthly income (1,000VND/III)	0	2,814	3,262	3,200	3,228	0	0			
District 3	No. of samples	2	2	25	11	19	3	1	4	67	66.00%
	Double count	(-2)	(-2)	(-1)	(-2)	(-9)	(-3)	(-1)			
	Income in total (1,000VND)	0	0	36,900	16,900	19,830	0	0	6,000		
	Average monthly income (1,000VND/III)	0	0	1,538	1,878	1,983	0	0	1,500		
District 4	No. of samples	1	1	29	14	7	0	0	52	82.35%	
	Double count		(-1)		(-1)						
	Income in total (1,000VND)	400	0	67,500	34,000	10,000	0	0	0		
	Average monthly income (1,000VND/III)	400	0	2,328	2,615	1,429	0	0	0		
District 5	No. of samples	1	0	29	6	16	1	0	53	66.67%	
	Double count				(-1)	(-1)	(-1)				
	Income in total (1,000VND)	500	0	39,650	3,500	19,100	0	0	0		
	Average monthly income (1,000VND/III)	500	0	1,367	700	1,273	0	0	0		
District 6	No. of samples	1	6	25	2	20	1	0	55	48.15%	
	Double count				(-1)	(-1)					
	Income in total (1,000VND)	5,000	5,050	40,400	800	94,100	0	0	0		
	Average monthly income (1,000VND/III)	5,000	842	1,616	800	4,705	0	0	0		
District 8	No. of samples	1	3	31	4	31	1	0	71	59.32%	
	Double count					(-12)					
	Income in total (1,000VND)	6,000	7,000	72,000	12,500	47,900	500	0	0		
	Average monthly income (1,000VND/III)	6,000	2,333	2,323	3,125	2,521	500	0	0		
District 10	No. of samples	0	3	18	10	31	2	0	2	66	44.26%
	Double count				(-1)	(-5)					
	Income in total (1,000VND)	0	4,600	29,200	14,450	47,200	2,000	0	5,000		
	Average monthly income (1,000VND/III)	0	1,533	1,622	1,606	1,815	1,000	0	2,500		
District 11	No. of samples	4	7	26	5	15	4	1	62	58.82%	
	Double count	(-3)	(-1)		(-1)	(-5)	(-1)	(-1)			
	Income in total (1,000VND)	1,500	14,500	83,100	13,000	29,100	3,500	0	0		
	Average monthly income (1,000VND/III)	1,500	2,417	3,196	3,250	2,910	1,167	0	0		
Go Vap	No. of samples	2	8	18	5	23	3	0	1	60	41.51%
	Double count		(-3)		(-1)	(-2)	(-2)				
	Income in total (1,000VND)	2,500	5,300	32,900	4,500	35,220	2,000	0	600		
	Average monthly income (1,000VND/III)	1,250	1,060	1,828	1,125	1,677	2,000	0	600		
Fan Binh	No. of samples	2	10	26	6	24	5	0	1	74	46.77%
	Double count		(-3)		(-3)	(-6)	(-3)				
	Income in total (1,000VND)	3,300	10,700	64,400	2,700	36,600	3,000	0	500		
	Average monthly income (1,000VND/III)	1,650	1,529	2,477	900	2,033	1,500	0	500		
Binh Thanh	No. of samples	0	0	35	13	15	2	1	1	67	68.75%
	Double count				(-4)	(-3)					
	Income in total (1,000VND)	0	0	53,400	14,600	18,900	3,900	2,000	900		
	Average monthly income (1,000VND)	0	0	1,526	1,622	1,575	1,950	2,000	900		
Thu Nguan	No. of samples	2	4	17	6	35	1	0	0	65	42.31%
	Double count	(-1)	(-2)		(-1)	(-9)	(-1)				
	Income in total (1,000VND)	1,000	1,300	26,100	7,200	41,200	0	0	0		
	Average monthly income (1,000VND/III)	1,000	650	1,535	1,440	1,585	0	0	0		
District 12	No. of samples	7	4	19	3	11	0	33	0	77	40.38%
	Double count		(-2)		(-1)	(-6)		(-19)			
	Income in total (1,000VND)	7,500	4,900	25,050	3,000	6,600	0	9,310	0		
	Average monthly income (1,000VND/III)	1,071	2,450	1,318	1,500	1,320	0	665	0		
Thu Duc	No. of samples	0	4	11	9	24	2	10	0	60	38.00%
	Double count				(-1)	(-6)	(-1)	(-3)			
	Income in total (1,000VND)	0	11,500	36,500	20,500	56,000	1,000	16,500	0		
	Average monthly income (1,000VND/III)	0	2,875	3,318	2,563	3,111	1,000	2,357	0		
District 2	No. of samples	4	4	12	3	25	0	2	7	57	26.42%
	Double count		(-1)		(-1)	(-4)					
	Income in total (1,000VND)	1,500	5,500	25,530	4,500	45,200	0	4,000	4,220		
	Average monthly income (1,000VND/III)	375	1,833	2,128	2,250	2,152	0	2,000	603		
District 9	No. of samples	0	0	14	3	6	0	32	0	55	33.33%
	Double count							(-4)			
	Income in total (1,000VND)	0	0	9,100	2,800	4,300	0	13,100	0		
	Average monthly income (1,000VND/III)	0	0	650	933	717	0	468	0		
District 7	No. of samples	1	3	7	16	20	4	5	1	57	46.00%
	Double count					(-5)	(-2)				
	Income in total (1,000VND)	2,000	1,800	12,900	45,700	20,500	2,500	8,200	1,000		
	Average monthly income (1,000VND/III)	2,000	600	1,843	2,856	1,367	1,250	1,640	1,000		
Binh Chuanh	No. of samples	1	5	25	13	19	2	2	0	67	55.56%
	Double count				(-3)	(-3)	(-1)				
	Income in total (1,000VND)	2,000	8,500	59,300	21,000	37,500	1,500	3,000	0		
	Average monthly income (1,000VND/III)	2,000	1,700	2,372	2,100	2,344	1,500	1,500	0		
Nha Be	No. of samples	0	0	7	4	16	1	34	0	62	23.26%
	Double count				(-1)	(-3)		(-16)			
	Income in total (1,000VND)	0	0	9,200	2,000	10,000	500	11,500	0		
	Average monthly income (1,000VND/III)	0	0	1,314	667	769	500	639	0		
Average									49.19%		

Source: Flood Damages Survey made by JICA Study Team, 1998.

Table L.2.17 Number of Households Engaging in Trading and Services in Each Zone

Zone	No.	District	Inundated area (ha)	Flood vulnerable population			Total number of households (HH)			Share rate (%)	Number of HHs engaging in trading & services		
				1997	2010	2020	1997	2010	2020		1997	2010	2020
C-Zone	C-1	District 3	55.19	36,913	36,155	35,584	6,465	6,332	6,232	66%	4,267	4,179	4,113
		District 10	50.10	18,581	18,549	18,524	3,254	3,249	3,244	44%	1,440	1,438	1,436
		Go Vap	77.50	18,796	23,256	27,395	3,292	4,073	4,798	42%	1,366	1,691	1,992
		Tan Binh	158.52	60,622	64,114	67,012	10,617	11,228	11,736	47%	4,966	5,252	5,489
		Binh Thanh	87.36	34,725	38,361	41,513	6,081	6,718	7,270	69%	4,181	4,619	4,998
		Phu Nhuan	52.18	24,383	25,942	27,215	4,270	4,543	4,766	42%	1,807	1,922	2,017
		Total	480.85	194,020	206,377	217,243	33,979	36,143	38,046		18,027	19,100	20,044
	C-2	Go Vap	5.43	1,531	1,906	2,256	268	334	395	42%	111	139	164
		Binh Thanh	175.08	30,573	36,441	42,500	5,354	6,382	7,443	69%	3,681	4,388	5,117
		Total	180.51	32,104	38,347	44,756	5,622	6,716	7,838		3,792	4,526	5,281
	C-3	District 6	232.65	87,913	93,070	97,686	15,396	16,299	17,108	48%	7,413	7,848	8,237
		District 11	61.20	36,587	35,870	35,367	6,407	6,282	6,194	59%	3,769	3,695	3,643
		Tan Binh	135.36	32,345	33,932	35,226	5,665	5,943	6,169	47%	2,649	2,779	2,885
		Bin Chanh	16.20	666	1,416	2,598	117	248	455	56%	65	138	253
		Total	445.41	157,510	164,287	170,878	27,585	28,772	29,926		13,896	14,460	15,019
	C-4	District 1	34.31	24,423	23,556	22,915	4,277	4,125	4,013	47%	2,002	1,931	1,879
		District 3	10.27	9,610	9,286	9,045	1,683	1,626	1,584	66%	1,111	1,073	1,045
		District 4	30.08	19,659	19,432	19,265	3,443	3,403	3,374	82%	2,835	2,802	2,778
		District 5	147.32	86,072	79,962	75,672	15,074	14,004	13,253	67%	10,050	9,336	8,835
		District 6	103.55	66,927	65,968	65,310	11,721	11,553	11,438	48%	5,644	5,563	5,507
		District 8	201.64	77,393	68,441	62,973	13,554	11,986	11,029	59%	8,040	7,110	6,542
		District 10	13.20	6,750	6,731	6,717	1,182	1,179	1,176	44%	523	522	521
		District 11	39.27	33,607	33,077	32,675	5,886	5,793	5,722	59%	3,462	3,407	3,366
		Tan Binh	38.98	19,098	19,787	20,335	3,345	3,465	3,561	47%	1,564	1,621	1,666
	Total	618.62	343,539	326,241	314,907	60,164	57,135	55,150		35,231	33,366	32,140	
	C-a	Binh Thanh	372.66	9,828	13,794	18,934	1,721	2,416	3,316	69%	1,183	1,661	2,280
		Total	372.66	9,828	13,794	18,934	1,721	2,416	3,316		1,183	1,661	2,280
C-b	Binh Thanh	22.15	2,880	3,382	3,828	504	592	670	69%	347	407	461	
	Total	22.15	2,880	3,382	3,828	504	592	670		347	407	461	
Total of C-Zone			2,120.20	739,881	752,429	770,546	129,576	131,774	134,947		72,477	73,521	75,224
N-Zone	N-2	Go Vap	254.63	33,206	46,061	59,941	5,815	8,067	10,498	42%	2,414	3,349	4,358
		Tan Binh	237.79	9,568	11,881	14,044	1,676	2,081	2,460	47%	784	973	1,150
		District 12	253.85	11,384	23,060	40,029	1,994	4,039	7,010	40%	805	1,631	2,831
	Total of N-Zone	746.28	54,158	81,002	114,015	9,485	14,186	19,968		4,003	5,952	8,339	
W-Zone	W-1	District 6	12.30	3,310	3,878	4,381	580	679	767	48%	279	327	369
		District 8	2.20	59	129	233	10	23	41	59%	6	13	24
		Tan Binh	250.20	31,482	35,315	38,651	5,514	6,185	6,769	47%	2,579	2,893	3,166
		Binh Chanh	9.21	380	807	1,477	67	141	259	56%	37	78	144
	Total of W-Zone	273.92	35,231	40,129	44,743	6,170	7,028	7,836		2,901	3,312	3,703	
S-Zone	S-3	District 7	145.97	15,381	23,617	37,412	2,694	4,136	6,552	46%	1,239	1,903	3,014
		Total	145.97	15,381	23,617	37,412	2,694	4,136	6,552		1,239	1,903	3,014
	S-5	District 7	6.84	84	187	348	15	33	61	46%	7	15	28
		Total	6.84	84	187	348	15	33	61		7	15	28
	S-b	District 7	27.78	320	871	1,904	56	153	333	46%	26	70	153
		Total	27.78	320	871	1,904	56	153	333		26	70	153
Total of S-Zone	180.59	15,785	24,676	39,663	2,764	4,322	6,946		1,272	1,988	3,195		
SE-Zone	SE-2	District 2	12.30	590	1,910	4,715	103	335	826	26%	27	88	218
		Total	12.30	590	1,910	4,715	103	335	826		27	88	218
	SE-4	District 2	22.33	1,106	2,111	3,470	194	370	608	26%	51	98	161
		Total	22.33	1,106	2,111	3,470	194	370	608		51	98	161
	SE-a	District 2	51.77	798	3,403	10,381	140	596	1,818	26%	37	157	480
		Total	51.77	798	3,403	10,381	140	596	1,818		37	157	480
	SE-b	District 2	54.18	4,238	9,175	17,073	742	1,607	2,990	26%	196	425	790
		Total	54.18	4,238	9,175	17,073	742	1,607	2,990		196	425	790
	Total of SE-Zone	140.58	6,733	16,600	35,639	1,179	2,907	6,242		312	768	1,649	
	Grand total			3,461.57	851,788	914,835	1,004,606	149,175	160,216	175,938		80,963	85,541

(Note) Average family size : 5.71 (persons/HH)

Table L.2.18 Business Suspension Losses in Each Zone

Zone	No.	Number of households engaging in trading and services			Increasing ratio (% per annum)		Average flood suspension duration (hours)		Business suspension days (days)		Annual average damages due to business suspension (million VND)				Annual average damages due to business suspension (equivalent to 1,000 US\$)				
		1997		2010		From 1997 to 2010		2010		2010		1997		2010		1997		2010	
		1997	2010	2010	2020	to 2010	to 2020	hours	days	1997	1998	2010	2020	1997	1998	2010	2020		
C-Zone	C.1	18,027	19,100	20,044		0.45%	0.48%	7.0	1.0	16,696	16,770	17,690	18,564	1,196	1,202	1,268	1,330		
	C.2	3,792	4,526	5,281		1.37%	1.55%	3.0	1.0	3,512	3,560	4,192	4,891	252	255	300	350		
	C.3	13,896	14,460	15,019		0.31%	0.38%	11.2	1.5	19,305	19,364	20,089	20,865	1,383	1,388	1,439	1,495		
	C.4	35,231	33,366	32,140		-0.42%	-0.37%	6.1	1.0	32,630	32,493	30,902	29,767	2,338	2,328	2,214	2,133		
	C.a	1,183	1,661	2,280		2.64%	3.22%	4.0	1.0	1,096	1,125	1,538	2,112	79	81	110	151		
	C.b	347	407	461		1.23%	1.25%	3.1	1.0	321	325	377	427	23	23	27	31		
Total	72,476	73,520	75,225		0.11%	0.23%			73,560	73,638	74,788	76,626	5,271	5,276	5,359	5,491			
N-Zone	N.2	4,003	5,952	8,339		3.10%	3.43%	4.3	1.0	3,707	3,822	5,513	7,723	266	274	395	553		
	Total	4,003	5,952	8,339		3.10%	3.43%			3,707	3,822	5,513	7,723	266	274	395	553		
W-Zone	W.1	2,901	3,312	3,703		1.02%	1.12%	10.9	1.5	4,030	4,071	4,601	5,144	289	292	330	369		
	Total	2,901	3,312	3,703		1.02%	1.12%			4,030	4,071	4,601	5,144	289	292	330	369		
S-Zone	S.3	1,239	1,903	3,014		3.36%	4.71%	4.4	1.0	1,148	1,186	1,762	2,791	82	85	126	200		
	S.5	7	15	28		6.04%	6.44%	3.5	1.0	6	7	14	26	0	0	1	2		
	S.b	26	70	153		7.92%	8.13%	3.5	1.0	24	26	65	142	2	2	5	10		
	Total	1,272	1,988	3,195		3.49%	4.86%			1,178	1,219	1,841	2,959	84	87	132	212		
SE-Zone	SE.2	27	88	218		9.51%	9.50%	12.0	1.5	38	41	122	303	3	3	9	22		
	SE.4	51	98	161		5.15%	5.09%	1.0	1.0	47	50	91	149	3	4	7	11		
	SE.a	37	157	480		11.76%	11.82%	3.1	1.0	34	38	145	445	2	3	10	32		
	SE.b	196	425	790		6.13%	6.40%	5.0	1.0	182	193	394	732	13	14	28	52		
	Total	311	768	1,649		7.20%	7.94%			301	322	752	1,628	22	23	54	117		
Grand total	80,963	85,540	92,111		0.42%	0.74%			82,776	83,073	87,495	94,081	5,931	5,952	6,269	6,741			

Remarks : Unit losses = 926,165 (VND/HH.day as of 1998). Based on the statistical data shown in Table K.1.1.1.

Exchange rate : US\$1.00 = VND13,956 (mid-rate as of the end of July, 1998).

Table L.2.19 Present Situation of Family Economy

District	Classified by group* Number of samples	Family size (persons working per HH)	Nos. of persons working per HH	Total amount of wages/salaries per month per person	Expenditure											Total	Balance (amount to be able to save)	
					Amount of													
					(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)			(L)
District 3 (1)	A	43	6.49	3.65	2,376,744	650,955	894,496	41,279	174	112,403	2,442	251,027	127,481	2,171	1,431,473	945,271		
District 3 (2)	B	50	5.12	1.90	1,580,120	831,642	553,150	53,333	253,067	328,307	0	187,067	83,067	71,667	1,529,657	50,463		
D. Tan Binh (3)	B	68	5.21	1.96	1,467,206	750,150	666,471	114,093	316,299	199,105	22,618	225,876	136,826	75,404	1,756,692	-289,487		
D. Binh Thanh (4)	B	32	6.00	2.03	1,549,888	762,923	879,948	13,802	287,240	130,573	2,326	127,630	34,063	10,677	1,486,258	63,430		
D. Phu Nhuan (5)	B	48	5.04	2.29	2,732,292	1,192,273	845,833	28,299	149,306	249,601	43,403	163,542	109,826	30,122	1,619,931	1,112,361		
District 1 (6)	C	48	5.48	1.81	1,656,875	914,138	741,146	52,431	49,665	48,227	17,396	110,503	45,868	26,215	1,091,451	565,424		
District 3 (7)	C	71	5.87	2.04	1,845,803	903,807	749,448	40,728	7,207	137,185	1,027	117,160	117,700	14,202	1,184,656	661,147		
District 4 (8)	C	47	6.38	1.85	2,456,383	1,327,011	1,115,691	74,645	3,191	187,500	28,154	233,014	162,801	22,163	1,827,161	629,222		
District 6 (9)	C	141	6.28	2.35	2,414,220	1,028,414	720,263	89,196	17,940	241,469	6,538	101,876	81,028	44,495	1,302,807	1,111,413		
District 8 (10)	C	360	5.41	2.06	1,551,889	751,925	711,316	66,487	4,308	130,247	11,205	89,662	77,712	24,418	1,115,356	436,533		
D. Phu Nhuan (11)	C	50	5.84	2.04	2,293,000	1,124,020	956,658	101,000	8,273	134,133	10,620	236,448	117,617	15,333	1,580,083	712,917		
District 12 (12)	C	40	5.38	1.40	1,450,500	1,036,071	832,750	176,875	0	131,021	68,744	190,521	114,375	54,021	1,568,306	-117,806		
Overall average		998	5.71	2.12	1,947,893	939,444	805,598	71,014	91,389	169,148	17,873	169,527	100,697	32,574	1,457,819	490,074		
Structure of family economy (%)					100.00%		41.36%	3.65%	4.69%	8.68%	0.92%	8.70%	5.17%	1.67%	74.84%	25.16%		

FINDINGS : Estimation of daily income per person.

(1) Daily Income per Person = Monthly Average Income (H_{avg})/25 days = VND939,444/25 days = VND37,578/day/person.

(2) If they can not come their working place caused by inundation, they suffer losses of this amount of income per day.

(3) Also, if they can not come to their working place since they should go to a hospital because of getting some disease, the same amount will become a loss for them.

Source : Result of Interview Survey on "Social Survey of Relocation/Resettlement" made by JICA Study Team, 1998.

(Note) * : Class A is for the inhabitants who are expected to be relocated in future but no concrete plan yet.

Class B is for the inhabitants who have already agreed with relocation and waiting for new place.

Class C is for the inhabitants who have already relocated to the new relocation site, on-/off-site).

Table I.2.20 Income Losses in Each Zone

Zone	Catchment area No	Flood Vulnerable Population					Total		Suspension days		Annual average income losses				
		Built-up Area		Increasing ratio (%)	Agricultural Land		Increasing ratio (%)	1997	2020	Tranding/ services	Agri- culture	Built-up area(mil VND)		Agricultural area(mil VND)	
		1997	2020		1997	2020						1998	2020	1998	2020
C-Zone	C.1	195,629	219,281	0.50%	0	0	195,629	219,281	1.0		2,943	3,283			
	C.2	33,081	46,084	1.45%	0	0	33,081	46,084	1.0		502	690			
	C.3	157,552	171,003	0.36%	0	0	157,552	171,003	1.5		3,550	3,840			
	C.4	341,210	315,553	-0.38%	19,723	67,070	363,933	382,623	1.0	1.0	5,133	4,724	212	682	
	C.a	9,839	18,947	2.89%	0	0	9,839	18,947	1.0		152	281			
	C.b	2,880	3,826	1.24%	0	0	2,880	3,826	1.0		44	57			
	Total	743,191	774,694	0.18%	19,723	67,070	5.47%	762,914	841,764			12,325	12,877	212	682
N-Zone	N.1	0	0		2,728	18,612	8.71%	2,728	18,612		7.0			211	1,326
	N.2	54,758	115,567	3.30%	69,565	216,250	5.05%	124,323	331,817	1.0	1.0	847	1,730	744	2,200
	N.a	0	0		10,181	58,030	7.86%	10,181	58,030		7.0			782	4,133
	Total	54,758	115,567	3.30%	82,474	292,892	5.66%	137,232	408,459			847	1,730	1,737	7,659
W-Zone	W.1	35,236	44,773	1.05%	38,989	243,813	8.30%	74,225	288,586	1.5	2.0	800	1,005	859	4,962
	Total	35,236	44,773	1.05%	38,989	243,813	8.30%	74,225	288,586			800	1,005	859	4,962
S-Zone	S.1	0	0		9,458	72,952	9.29%	9,458	72,952		3.5			368	2,598
	S.2	0	0		11,995	46,364	6.05%	11,995	46,364		3.5			453	1,651
	S.3	15,567	39,076	4.08%	26,754	116,257	6.60%	42,321	155,333	1.0	1.0	243	585	290	1,183
	S.5	84	348	6.37%	1,115	4,503	6.26%	1,199	4,851	1.0	1.0	1	5	12	46
	S.b	320	1,909	8.07%	3,947	21,044	7.55%	4,267	22,953	1.0	1.0	5	29	43	214
	S.c	0	0		9,717	15,479	2.05%	9,717	15,479		3.5			353	551
	Total	15,971	41,333	4.22%	62,986	276,599	6.64%	78,957	317,932			249	619	1,520	6,243
NE-Zone	NE.1	0	0		7,814	30,295	6.07%	7,814	30,295		7.0			590	2,158
	NE.2	0	0		24,057	81,682	5.46%	24,057	81,682		7.0			1,807	5,818
	NE.5	0	0		2,855	6,437	3.60%	2,855	6,437		7.0			211	458
	NE.a	0	0		7,141	29,702	6.39%	7,141	29,702		7.0			541	2,116
	NE.b	0	0		681	2,560	5.93%	681	2,560		7.0			51	182
	Total	0	0		42,548	150,676	5.65%	42,548	150,676			0	0	3,200	10,732
SE-Zone	SE.1	0	0		6,156	35,327	7.89%	6,156	35,327		7.0			473	2,516
	SE.2	590	4,729	9.47%	2,316	12,596	7.64%	2,906	17,325	1.5	2.0	15	106	51	256
	SE.4	1,106	3,462	5.09%	8,088	51,565	8.39%	9,194	55,027	1.0	1.0	17	52	89	525
	SE.5	0	0		2,078	26,296	11.67%	2,078	26,296		7.0			165	1,873
	SE.6	0	0		2,522	22,091	9.89%	2,522	22,091		7.0			197	1,573
	SE.7	0	0		14,386	55,571	6.05%	14,386	55,571		7.0			1,087	3,958
	SE.8	0	0		8,470	27,788	5.30%	8,470	27,788		7.0			635	1,979
	SE.9	0	0		11,178	55,350	7.20%	11,178	55,350		7.0			853	3,942
	SE.10	0	0		10,235	55,681	7.64%	10,235	55,681		7.0			785	3,966
	SE.a	805	10,452	11.79%	0	0	805	10,452	1.0	1.0	13	156			
	SE.b	4,242	17,154	6.26%	7,240	59,788	9.61%	11,482	76,942	1.0	7.0	67	257	565	4,258
	SE.c	0	0		884	11,526	11.81%	884	11,526		7.0			70	821
	SE.d	0	0		174	657	5.95%	174	657		7.0			13	47
	SE.e	0	0		931	9,471	10.61%	931	9,471		7.0			73	675
	SE.f	0	0		2,150	8,781	6.31%	2,150	8,781		7.0			163	625
	Total	6,743	35,797	7.53%	76,808	432,488	7.80%	83,551	468,285			113	571	5,221	27,015
Grand total		855,899	1,012,164	0.73%	323,528	1,463,538	6.78%	1,179,427	2,475,702			14,333	16,803	12,749	57,293

Remarks: 1. Daily income per person for workers: 40,320 (VND/day person as of 1998. Based on the data shown in Table K.1.11)
 2. Daily income per person for farmers: 27,405 (VND/day person as of 1998, see below)

Calculation:	Item	Gross output (tri. VND)	Nos. of farmers (persons)	Daily income (VND/day)
	1994	1,281	248,164	17,213
	1995	1,620	238,893	22,607
	1996	1,738	254,725	22,741
	1997	1,863	246,797	25,163
	1998	1,989	241,981	27,405

Source: Statistical Yearbook of Ho Chi Minh City, 1998.

3. Average family size: 5.71 (persons/III, see Table K.2.19)
 4. Number of working persons per III: 2.12 (persons/III, see Table K.2.19)

Source: See Table E.5.3 for "Flood Vulnerable Population".

Table L.2.21 Basic Data and Information on Medical Affairs

A. Basic Data on Patients

Item	1994	1995	1996	1997	Average
Inpatients	490,817	522,025	554,447	586,992	538,570
Outpatients	361,873	471,660	620,817	741,123	548,868
Staying days in hospitals (days)	8.09	7.92	7.83	7.96	7.95
Visiting days to hospitals (days)	13.70	13.50	13.50	12.41	13.28
Total number of patients	11,318,412	12,479,597	13,707,635	14,597,596	13,025,810
Average number of patients per day	33,289	36,705	40,317	42,934	38,311

B. Medical Cost

(As of 1998)

Kind of cost	Amount (mil. VND)
Medical subsidies from Ho Chi Minh City to hospitals :	293,150
Medical cost collected from patients :	21,000
Medical cost paid from medical insurance :	50,000
Total	364,150

C. Rate of Water Borne Diseases

(As of 1997)

Name of disease	Water borne disease	Faecal disposal related disease	Housing and crowding related disease	Others	Total
Hepatitis		1,032			1,032
Mumps			1,053		1,053
Measles			1,302		1,302
Whooping cough			319		319
Chicken pox			225		225
Diarhea	40,827				40,827
Trachoma	264				264
Pneumonia and influenza			17,862		17,862
Mal of poisoning			1,718		1,718
Shigellosis		468			468
Meningitis viral			57		57
Typhoid	674				674
Certain infectious and parasitic disease				82,175	82,175
Total	41,765	1,500	22,536	82,175	147,976
Share rate (%)	28.22%	1.01%	15.23%	55.53%	100.00%

Source : Department of Health, Ho Chi Minh City.

Table L.2.22 Saving Amount of Medical Fees in Built-Up Area in Each Zone

Zone	Catchment area	Flood Vulnerable Population				Number of total patients suffered by water borne disease		Amount of medical fees for total patients suffered by water borne d		Number of outpatients suffered by water borne disease		Amount of income to be received during visiting days to hospitals		Number of inpatients suffered by water borne disease		Amount of income to be received during staying days in hospitals	
		Built-up area			Increasing ratio (%)	(persons)		(million VND)		(persons)		(million VND)		(persons)		(million VND)	
		No.	1997	1998		2020	1998	2020	1998	2020	1998	2020	1998	2020	1998	2020	1998
C	C.1	195,629	196,602	219,281	0.50%	3,627	4,046	1,215	1,355	1,831	2,042	980	1,093	1,797	2,004	576	642
	C.2	33,081	33,561	46,084	1.45%	619	850	207	285	313	429	167	230	307	421	98	135
	C.3	157,552	158,114	171,003	0.36%	2,917	3,155	977	1,057	1,472	1,592	788	853	1,445	1,563	463	501
	C.4	344,210	342,912	315,553	-0.38%	6,327	5,822	2,119	1,950	3,193	2,939	1,710	1,573	3,133	2,883	1,004	924
	C.a	9,839	10,123	18,947	2.89%	187	350	63	117	94	176	50	94	93	173	30	55
	C.b	2,880	2,916	3,826	1.24%	51	71	18	24	27	36	15	19	27	35	9	11
	Total	743,191	744,228	774,694	0.18%	13,731	14,293	4,598	4,786	6,931	7,214	3,711	3,863	6,801	7,079	2,180	2,269
N	N.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	N.2	54,758	56,565	115,567	3.30%	1,044	2,132	349	714	527	1,076	282	576	517	1,056	166	339
	N.a	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	Total	54,758	56,565	115,567	3.30%	1,044	2,132	349	714	527	1,076	282	576	517	1,056	166	339
W	W.1	35,236	35,605	41,773	1.05%	657	826	220	277	332	417	178	223	325	409	104	131
	Total	35,236	35,605	41,773	1.05%	657	826	220	277	332	417	178	223	325	409	104	131
S	S.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	S.2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	S.3	15,567	16,203	39,076	4.08%	299	721	100	241	151	364	81	195	148	357	47	114
	S.5	84	89	348	6.37%	2	6	1	2	1	3	0	2	1	3	0	1
	S.b	320	346	1,909	8.07%	6	35	2	12	3	18	2	10	3	17	1	6
	S.c	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	Total	15,971	16,638	41,333	4.22%	307	763	103	255	155	385	83	206	152	378	49	121
NE	NE.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	NE.2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	NE.5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	NE.a	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	NE.b	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
SE	SE.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.2	590	646	4,729	9.47%	12	87	4	29	6	44	3	24	6	43	2	14
	SE.4	1,106	1,162	3,462	5.69%	21	64	7	21	11	32	6	17	11	32	3	10
	SE.5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.6	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.7	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.9	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.a	805	900	10,452	11.79%	17	193	6	65	8	97	4	52	8	96	3	31
	SE.b	4,242	4,508	17,154	6.26%	83	316	28	106	42	160	22	86	41	157	13	50
	SE.c	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.d	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.e	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
SE.f	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	
Total	6,743	7,216	35,797	7.53%	133	660	45	221	67	333	36	178	66	327	21	105	
Grand total		855,899	860,252	1,012,164	0.73%	15,872	18,675	5,315	6,254	8,011	9,426	4,290	5,047	7,861	9,249	2,520	2,965

Note: Total population in HCMC: 4,989,703 (As of 1997, Statistical Yearbook of Ho Chi Minh City, 1998)

- Annual average outpatients: 548,868 (See Table K 2 21)
- Annual average inpatients: 538,570 (See Table K 2 21)
- Total patients: 1,087,438
- Share rate of water borne diseases: 28.22% (See Table K 2 21)
- Total medical cost: 364,150 (million VND, see Table K 2 21)
- Medical cost per patient: 334,870 (VND/patient)
- Average daily income for workers: 40,320 (VND/patient, see Table K 2 20)
- Average daily income for farmers: 27,405 (VND/patient, see Table K 2 20)
- Average days staying in hospital: 7.95 (days/inpatient, see Table K 2 21)
- Average days to visit to hospital: 13.28 (days/outpatient, see Table K 2 21)
- Estimation of impact of the Project: 30% (Assumed)

Table L.2.23 Saving Amount of Medical Fees in Agricultural Area in Each Zone

Zone	Catchment area	Flood Vulnerable Population				Number of total patients suffered by water borne disease		Amount of medical fees for total patients suffered by water borne d.		Number of outpatients suffered by water borne disease		Amount of income to be received during visiting days to hospitals		Number of inpatients suffered by water borne disease		Amount of income to be received during staying days in hospitals	
		Built-up area			Increasing ratio (%)	(persons)		(million VND)		(persons)		(million VND)		(persons)		(million VND)	
		No.	1997	1998		2020	1998	2020	1998	2020	1998	2020	1998	2020	1998	2020	1998
C	C.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	C.2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	C.3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	C.4	19,723	20,801	67,070	5.47%	384	1,237	129	414	194	625	70	227	190	613	41	134
	C.a	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	C.b	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	Total	19,723	20,801	67,070	5.47%	384	1,237	129	414	194	625	70	227	190	613	41	134
N	N.1	2,728	2,966	18,612	8.71%	55	343	18	115	28	173	10	63	27	170	6	37
	N.2	69,565	73,081	216,250	5.05%	1,348	3,990	452	1,336	681	2,014	248	733	668	1,976	145	431
	N.a	10,181	10,981	58,030	7.86%	203	1,071	68	359	102	540	37	197	100	530	22	116
	Total	82,474	87,028	292,892	5.66%	1,606	5,404	538	1,810	810	2,728	295	993	795	2,676	173	583
W	W.1	38,989	42,224	243,813	8.30%	779	4,498	261	1,506	393	2,271	143	826	386	2,228	84	485
	Total	38,989	42,224	243,813	8.30%	779	4,498	261	1,506	393	2,271	143	826	386	2,228	84	485
S	S.1	9,458	10,337	72,952	9.29%	191	1,345	64	451	96	679	35	247	94	667	21	145
	S.2	11,995	12,721	46,364	6.05%	235	855	79	286	118	432	43	157	116	424	25	92
	S.3	26,754	28,519	116,257	6.60%	526	2,145	176	718	266	1,083	97	394	261	1,062	57	231
	S.5	1,115	1,185	4,503	6.26%	22	83	7	28	11	42	4	15	11	41	2	9
	S.b	3,947	4,245	21,044	7.55%	78	388	26	130	40	196	14	71	39	192	8	42
	S.c	9,717	9,916	15,479	2.05%	183	286	61	96	92	144	34	52	91	141	20	31
	Total	62,986	66,923	276,599	6.64%	1,235	5,103	413	1,709	623	2,576	227	937	612	2,528	133	551
NE	NE.1	7,814	8,288	30,295	6.07%	153	559	51	187	77	282	28	103	76	277	17	60
	NE.2	24,057	25,370	81,682	5.46%	468	1,507	157	505	236	761	86	277	232	746	51	163
	NE.5	2,855	2,958	6,437	3.60%	55	119	18	40	28	60	10	22	27	59	6	13
	NE.a	7,141	7,598	29,702	6.39%	140	548	47	184	71	277	26	101	69	271	15	59
	NE.b	681	721	2,560	5.93%	13	47	4	16	7	24	2	9	7	23	1	5
	Total	42,548	44,935	150,676	5.65%	829	2,780	278	931	418	1,403	152	511	411	1,377	89	300
SE	SE.1	6,156	6,642	35,327	7.89%	123	652	41	218	62	329	23	120	61	323	13	70
	SE.2	2,316	2,493	12,596	7.64%	46	232	15	78	23	117	8	43	23	115	5	25
	SE.4	8,088	8,756	51,565	8.39%	162	951	54	319	82	480	30	175	80	471	17	103
	SE.5	2,078	2,320	26,296	11.67%	43	485	14	162	22	245	8	89	21	240	5	52
	SE.6	2,522	2,772	22,091	9.89%	51	408	17	136	26	206	9	75	25	202	6	44
	SE.7	14,386	15,257	55,571	6.05%	281	1,025	94	343	142	518	52	188	139	508	30	111
	SE.8	8,470	8,919	27,788	5.30%	165	513	55	172	83	259	30	94	82	254	18	55
	SE.9	11,178	11,983	55,350	7.20%	221	1,021	74	342	112	515	41	188	109	506	24	110
	SE.10	10,235	11,017	55,681	7.64%	203	1,027	68	344	103	519	37	189	101	509	22	111
	SE.a	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
	SE.b	7,240	7,936	59,788	9.61%	146	1,103	49	369	74	557	27	203	73	546	16	119
	SE.c	884	988	11,526	11.81%	18	213	6	71	9	107	3	39	9	105	2	23
	SE.d	174	184	657	5.95%	3	12	1	4	2	6	1	2	2	6	0	1
	SE.e	931	1,030	9,471	10.61%	19	175	6	59	10	88	3	32	9	87	2	19
SE.f	2,150	2,286	8,781	6.31%	42	162	14	54	21	82	8	30	21	80	5	17	
	Total	76,808	82,593	432,488	7.80%	1,524	7,980	510	2,672	769	4,028	280	1,466	755	3,952	161	861
Grand total		323,528	344,504	1,463,538	6.78%	6,356	27,003	2,129	9,042	3,208	13,629	1,168	4,960	3,148	13,374	686	2,914

Note: Total population in HCMC : 4,989,793 (As of 1997, Statistical Yearbook of Ho Chi Minh City, 1998)
 Annual average outpatients : 548,868 (See Table K.2.21)
 Annual average inpatients : 538,570 (See Table K.2.21)
 Total patients : 1,087,438
 Share rate of water borne diseases : 28.22% (See Table K.2.21)
 Total medical cost : 364,150 (million VND, see Table K.2.21)
 Medical cost per patient : 334,870 (VND/patient)
 Average daily income for workers : 40,320 (VND/patient, see Table K.2.20)
 Average daily income for farmers : 27,405 (VND/patient, see Table K.2.20)
 Average days staying in hospital : 7.95 (days/inpatient, see Table K.2.21)
 Average days to visit to hospital : 13.28 (days/outpatient, see Table K.2.21)
 Estimation of impact of the Project : 30% (Assumed)

Table L.2.24 Estimation of Navigation Benefit in C-Zone

Items/estimation factors	Amount/figures	
Gross output of inland waterway transportation¹⁾	(million VNĐ)	1994 562,150
		1995 702,181
		1996 922,901
		1997 1,015,964
		1998 1,232,992
Estimation of per hour inland waterway transportation charge at present situation		
Working days per year (days/annum) ²⁾	(days/annum)	365
Working hours per day (hours/day) ²⁾	(hours/day)	12
Per hour waterway transportation charge	(million VNĐ/hour)	282
Estimation of navigation benefit at present situation		
Registered ships/boats in whole Ho Chi Minh City	ships	3,000
Registered ships/boats along the Tau Hu - Be Nghe C.	ships	300
Share rate of Tau Hu - Be Nghe Canal ³⁾	(%)	10.00%
Existing harboring rate ⁴⁾	(%)	75.00%
Improved harboring rate by excavation ⁴⁾	(%)	90.00%
Benefited harboring rate	(%)	15.00%
Benefited waiting time per day ⁴⁾	(hours/day)	7.00
Amount of benefit at present (as of 1998)	(million VNĐ/annum)	10,789
Estimation of navigation benefit at future situation		
Population in whole HCMC at present (as of 1997)	(persons)	4,415,147
Population in whole HCMC in future (as of 2020)	(persons)	7,608,615
Increasing ratio of population	(%)	2.39%
Amount of benefit in future (as of 2020)	(million VNĐ/annum)	18,157

(Note)

1) See Table K.1.12.

2) Assumed.

3) Based on an information of UNDP.

4) Based on an information of "Pre-Feasibility Study on Improvement, Construction & Rehabilitation of Tau Hu - Doi - Te Canals" studied by HCMC Transportation and Public Works together with the Construction Consulting Company, 1998.

Table I.2.25 Summary of Indirect Benefit

A. Summary of Annual Income Losses due to Inundation

Zone	In million VND						Equivalent to 1,000 US\$	
	Built-up area		Agricultural area		Total		1998	2020
	1998	2020	1998	2020	1998	2020		
C-Zone	12,325	12,877	212	682	12,537	13,559	898	972
N-Zone	847	1,730	1,737	7,659	2,584	9,389	185	673
W-Zone	800	1,005	859	4,962	1,659	5,967	119	428
S-Zone	249	619	1,520	6,243	1,769	6,862	127	492
NE-Zone	0	0	3,200	10,732	3,200	10,732	229	769
SE-Zone	113	571	5,221	27,015	5,334	27,586	382	1,977
Total	14,334	16,802	12,749	57,293	27,083	74,095	1,941	5,309

Note : Exchange rate applied 13,956 (VND/US\$, mid-rate as of the end July, 1999)

B. Annual Saving Amount of Medical Fees and Amount of Income to be Received Suspended by Medical Treatment

Zone	In million VND						Equivalent to 1,000 US\$	
	Built-up area		Agricultural area		Total		1998	2020
	1998	2020	1998	2020	1998	2020		
C-Zone	10,489	10,918	240	775	10,729	11,693	769	838
Saving amount of medical fees	4,598	4,786	129	414	4,727	5,200		
Income losses for outpatients	3,711	3,863	70	227	3,781	4,090		
Income losses for inpatients	2,180	2,269	41	134	2,221	2,403		
N-Zone	797	1,629	1,006	3,386	1,803	5,015	129	359
Saving amount of medical fees	349	714	538	1,810	887	2,524		
Income losses for outpatients	282	576	295	993	577	1,569		
Income losses for inpatients	166	339	173	583	339	922		
W-Zone	502	631	488	2,817	990	3,448	71	247
Saving amount of medical fees	220	277	261	1,506	481	1,783		
Income losses for outpatients	178	223	143	826	321	1,049		
Income losses for inpatients	104	131	84	485	188	616		
S-Zone	235	582	773	3,197	1,008	3,779	72	271
Saving amount of medical fees	103	255	413	1,709	516	1,964		
Income losses for outpatients	83	206	227	937	310	1,143		
Income losses for inpatients	49	121	133	551	182	672		
NE-Zone	0	0	519	1,742	519	1,742	37	125
Saving amount of medical fees	0	0	278	931	278	931		
Income losses for outpatients	0	0	152	511	152	511		
Income losses for inpatients	0	0	89	300	89	300		
SE-Zone	102	504	954	4,999	1,056	5,503	76	394
Saving amount of medical fees	45	221	510	2,672	555	2,893		
Income losses for outpatients	36	178	280	1,466	316	1,644		
Income losses for inpatients	21	105	164	861	185	966		
Total	12,125	14,264	3,980	16,916	16,105	31,180	1,154	2,234

C. Annual Average Navigation Benefit in C-Zone

Item	In million VND		Equivalent to 1,000 US\$	
	1998	2020	1998	2020
Annual average saving amount of inland waterway transportation charge	10,789	18,157	773	1,301

Note : Exchange rate applied 13,956 (VND/US\$, mid-rate as of the end of July, 1999)

Table L.2.26 Estimation of Standard Conversion Factor

(Note)
Equation for calculation of standard conversion factor (SCF):

$$\text{SCF} = \frac{\text{Import amount} + \text{Export amount}}{(\text{Import amount} + \text{Import customs}) + (\text{Export amount} - \text{Export tax} + \text{Excise duties})}$$

Year	(1,000 US\$)				
	Import amount	Export amount	Import customs	Export taxes	Excise duties
1994	1,976,785	1,694,375	413,954	0	0
1995	2,378,096	2,367,665	599,296	0	0
1996	3,179,976	3,473,175	681,109	0	0
1997	3,066,488	3,295,808	673,154	0	0
1998	2,713,357	3,072,301	591,393	0	0
Total	13,314,702	13,903,524	2,958,906	0	0
				SCF=	0.90195

(Note) Refer to Table K.1.3.

Table L.2.27 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in C-Zone

(billion VNĐ)

Cost item	Distribution												Total							
	2000			2001			2002			2003			2004			2005		Total		
	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Total		
Construction works	231.4	539.9	771.3	231.4	539.9	771.3	231.4	539.9	771.3	231.4	539.9	771.3	231.4	539.9	771.3	1,157.0	2,699.5	3,856.5		
Engineering cost	94.5	40.5	135.0	18.9	8.1	27.0	18.9	8.1	27.0	18.9	8.1	27.0	18.9	8.1	27.0	189.0	81.0	270.0		
Compensation cost	0.0	1,386.2	1,386.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,386.2		
Sub total	94.5	1,426.7	1,521.2	250.3	548.0	798.3	250.3	548.0	798.3	250.3	548.0	798.3	250.3	548.0	798.3	1,346.0	4,166.7	5,512.7		
Administration	0.0	0.0	0.0	0.0	31.5	31.5	0.0	31.5	31.5	0.0	31.5	31.5	0.0	31.5	31.5	0.0	157.3	157.3		
Sub-total	94.5	1,426.7	1,521.2	250.3	579.5	829.8	250.3	579.5	829.8	250.3	579.5	829.8	250.3	579.5	829.8	1,251.5	2,897.3	4,148.8		
Physical conit.	0.0	0.0	0.0	23.1	54.0	77.1	23.1	54.0	77.1	23.1	54.0	77.1	23.1	54.0	77.1	115.5	270.0	385.5		
Financial cost	94.5	1,426.7	1,521.2	273.4	633.5	906.9	273.4	633.5	906.9	273.4	633.5	906.9	273.4	633.5	906.9	1,461.5	4,594.0	6,055.5		
Economic cost	85.1	1,411.3	1,496.4	246.1	460.4	706.5	246.1	460.4	706.5	246.1	460.4	706.5	246.1	460.4	706.5	1,315.4	3,713.4	5,028.7		
Remarks:	8. Operation/maintenance and replacement cost:																			
1. Price share rates of construction:	Annualized work item																			
- Labour				0%			0%			0%			0%			15%			Improvement of canal:	
- Equipment and Material				100%			100%			100%			100%			85%			Drainage pumping station:	
2. Tax : 10 % for construction and engineering services.				10%			10%			10%			10%			10%			Installation of drainage pipe:	
3. Contractor's overhead & profit:				0.9020			0.9020			0.9020			0.9020			0.9020			(Refer to Table K.2.26)	
4. Standard conversion factor:				70%			70%			70%			70%			70%			Construction of drainage ditch:	
5. Shadow wage rate (economic wage rate):				70%			70%			70%			70%			70%			Administration:	
6. Price : As of October 1997.																			Financial cost	
7. Conversion rate : US\$=1.00 = VNĐ13,956 and US\$1.00= VNĐ113.39.																			Economic cost	
																			9. Replacement cost (F.cost:108.8):	
																			104.5 (billion VNĐ)	

Table L.2.28 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in N-Zone

(billion VNĐ)

Cost item	Distribution												Total					
	2000			2001-2			2003-4			2005-6			2007-8			2009-10		
	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Total
Construction works	79.5	185.4	264.9	79.5	185.4	264.9	79.5	185.4	264.9	79.5	185.4	264.9	79.5	185.4	264.9	795.0	1,854.0	2,649.0
Engineering cost	64.9	27.8	92.7	6.5	2.8	9.3	6.5	2.8	9.3	6.5	2.8	9.3	6.5	2.8	9.3	129.9	55.8	185.7
Compensation cost	0.0	631.3	631.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	631.3
Sub total	64.9	659.1	724.0	6.5	188.2	194.7	6.5	188.2	194.7	6.5	188.2	194.7	6.5	188.2	194.7	129.9	558.8	724.0
Administration	0.0	0.0	0.0	0.0	9.8	9.8	0.0	9.8	9.8	0.0	9.8	9.8	0.0	9.8	9.8	0.0	9.8	98.4
Sub-total	64.9	659.1	724.0	6.5	198.0	204.5	6.5	198.0	204.5	6.5	198.0	204.5	6.5	198.0	204.5	129.9	568.6	822.4
Physical cont.	0.0	0.0	0.0	7.9	18.5	26.4	7.9	18.5	26.4	7.9	18.5	26.4	7.9	18.5	26.4	79.0	185.0	264.0
Financial cost	64.9	659.1	724.0	93.9	216.5	310.4	93.9	216.5	310.4	93.9	216.5	310.4	93.9	216.5	310.4	1,003.9	2,824.5	3,828.4
Economic cost	58.4	648.5	706.9	84.5	157.1	241.6	84.5	157.1	241.6	84.5	157.1	241.6	84.5	157.1	241.6	903.5	2,219.7	3,123.2

Remarks:

- Price share rates of construction:
 - Labour: 0% 15%
 - Equipment and Material: 100% 85%
- Tax: 10% for construction and engineering services.
- Contractor's overhead & profit: 10%
- Standard conversion factor: 0.9020 (Refer to Table K.2.26)
- Shadow wage rate (economic wage rate): 70%
- Price: As of October 1997.
- Conversion rate: US\$ 1.00 = VNĐ13,956 and US\$1.00 = ¥113.39

8. Operation/maintenance and replacement cost:

Annualized work item	F.C.	L.C.	Total
15% Improvement of canal	0%	15%	
85% Drainage pumping station	100%	85%	
Installation of drainage pipe			
Construction of drainage ditch			
Administration			7.9
Financial cost			6.4
Economic cost			6.4

Table L.2.29 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in W-Zone

Cost item	Distribution												Total																																																																																																																																																													
	2000			2001			2002			2003			2004			2005		Total																																																																																																																																																								
	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Total																																																																																																																																																								
Construction works	74.6	174.1	248.7	74.6	174.1	248.7	74.6	174.1	248.7	74.6	174.1	248.7	74.6	174.1	248.7	373.0	870.5	1,243.5																																																																																																																																																								
Engineering cost	30.5	13.1	43.6	6.1	2.6	8.7	6.1	2.6	8.7	6.1	2.6	8.7	6.1	2.6	8.7	61.0	26.1	87.1																																																																																																																																																								
Compensation cost	0.0	250.5	250.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	250.5	250.5																																																																																																																																																								
Sub total	30.5	263.6	294.1	80.7	176.7	257.4	80.7	176.7	257.4	80.7	176.7	257.4	80.7	176.7	257.4	434.0	1,147.1	1,581.1																																																																																																																																																								
Administration	0.0	0.0	0.0	0.0	9.0	9.0	0.0	9.0	9.0	0.0	9.0	9.0	0.0	9.0	9.0	0.0	44.8	44.8																																																																																																																																																								
Sub-total	30.5	263.6	294.1	80.7	185.7	266.4	80.7	185.7	266.4	80.7	185.7	266.4	80.7	185.7	266.4	403.5	928.3	1,331.8																																																																																																																																																								
Physical conti.	0.0	0.0	0.0	7.5	17.4	24.9	7.5	17.4	24.9	7.5	17.4	24.9	7.5	17.4	24.9	37.5	87.0	124.5																																																																																																																																																								
Financial cost	30.5	263.6	294.1	88.2	203.1	291.3	88.2	203.1	291.3	88.2	203.1	291.3	88.2	203.1	291.3	471.5	1,278.9	1,750.4																																																																																																																																																								
Economic cost	27.5	258.6	286.1	79.4	147.3	226.6	79.4	147.3	226.6	79.4	147.3	226.6	79.4	147.3	226.6	424.4	995.0	1,419.3																																																																																																																																																								
Remarks:	1. Price share rates of construction: <table border="0" style="width: 100%;"> <tr> <td>- Labour</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> </tr> <tr> <td>- Equipment and Material</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> </tr> </table> 2. Tax: 10% for construction and engineering services. 3. Contractor's overhead & profit: 10% 4. Standard conversion factor: 0.9020 (Refer to Table K.2.26) 5. Shadow wage rate (economic wage rate): 70% 6. Price: As of October 1997. 7. Conversion rate: US\$ 1.00 = VND 13,956 and US\$ 1.00 = ¥ 113.59																		- Labour	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	- Equipment and Material	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%																																																																																																																		
- Labour	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%																																																																																																																																																								
- Equipment and Material	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%																																																																																																																																																								
	8. Operation/maintenance and replacement cost: <table border="0" style="width: 100%;"> <tr> <td>Annualized work item</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Improvement of canal:</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> <td>0%</td> <td>15%</td> </tr> <tr> <td>Drainage pumping station:</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> </tr> <tr> <td>Installation of drainage pipe:</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> </tr> <tr> <td>Construction of drainage ditch:</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> <td>100%</td> <td>85%</td> </tr> <tr> <td>Administration:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Financial cost:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Economic cost:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																		Annualized work item																			Improvement of canal:	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	Drainage pumping station:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	Installation of drainage pipe:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	Construction of drainage ditch:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	Administration:																			Financial cost:																			Economic cost:																		
Annualized work item																																																																																																																																																																										
Improvement of canal:	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%	0%	15%																																																																																																																																																								
Drainage pumping station:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%																																																																																																																																																								
Installation of drainage pipe:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%																																																																																																																																																								
Construction of drainage ditch:	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%	100%	85%																																																																																																																																																								
Administration:																																																																																																																																																																										
Financial cost:																																																																																																																																																																										
Economic cost:																																																																																																																																																																										

Table L.2.30 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in S-Zone

(billion VND)

Cost item	Distribution												Total					
	2000			2001			2002			2003			2004			2005		Total
	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	L.C.	
Construction works	53.0	123.7	176.7	53.0	123.7	176.7	53.0	123.7	176.7	53.0	123.7	176.7	53.0	123.7	176.7	265.0	618.5	883.5
Engineering cost	21.6	9.3	30.9	4.3	1.9	6.2	4.3	1.9	6.2	4.3	1.9	6.2	4.3	1.9	6.2	43.1	18.8	61.9
Compensation cost	0.0	183.6	183.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	183.6	183.6
Sub total	21.6	192.9	214.5	57.3	125.6	182.9	57.3	125.6	182.9	57.3	125.6	182.9	57.3	125.6	182.9	308.1	820.9	1,129.0
Administration	0.0	0.0	0.0	0.0	6.4	6.4	0.0	6.4	6.4	0.0	6.4	6.4	0.0	6.4	6.4	0.0	32.0	32.0
Sub-total	21.6	192.9	214.5	57.3	132.0	189.3	57.3	132.0	189.3	57.3	132.0	189.3	57.3	132.0	189.3	286.5	660.0	946.5
Physical conti.	0.0	0.0	0.0	5.3	12.4	17.7	5.3	12.4	17.7	5.3	12.4	17.7	5.3	12.4	17.7	26.5	62.0	88.5
Financial cost	21.6	192.9	214.5	62.6	144.4	207.0	62.6	144.4	207.0	62.6	144.4	207.0	62.6	144.4	207.0	334.6	914.9	1,249.5
Economic cost	19.4	189.4	208.8	56.3	104.7	161.1	56.3	104.7	161.1	56.3	104.7	161.1	56.3	104.7	161.1	301.1	713.0	1,014.2

Remarks:

- Price share rates of construction:
 - Labour: 0% 15%
 - Equipment and Material: 100% 85%
- Tax: 10% for construction and engineering services.
- Contractor's overhead & profit: 10%
- Standard conversion factor: 0.9020 (Refer to Table K.2.26)
- Shadow wage rate (economic wage rate): 70%
- Price: As of October 1997.
- Conversion rate: US\$ 1.00 = VND13,956 and US\$1.00 = ¥113.39.

8. Operation/maintenance and replacement cost:

Annualized work item	F.C.	L.C.	Total
Improvement of canal:	0%	15%	
Drainage pumping station:	100%	85%	
Installation of drainage pipe:			
Construction of drainage ditch:			
Administration:			
Financial cost:			2.7
Economic cost:			2.2

Table L.2.31 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in NE-Zone

Cost item	Distribution												Total								
	2000			2001			2002			2003				2004			2005				
	FC	L.C	Sub-total	FC	L.C	Sub-total	FC	L.C	Sub-total	FC	L.C	Sub-total		FC	L.C	Sub-total	FC	L.C	Sub-total		
Construction works	93.6	218.4	312.0	93.6	218.4	312.0	93.6	218.4	312.0	93.6	218.4	312.0	93.6	218.4	312.0	468.0	1,092.0	1,560.0			
Engineering cost	38.2	16.4	54.6	7.6	3.3	10.9	7.6	3.3	10.9	7.6	3.3	10.9	7.6	3.3	10.9	7.6	3.3	10.9	76.2	32.9	109.1
Compensation cost	0.0	235.6	235.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	235.6	235.6
Sub total	38.2	252.0	290.2	101.2	221.7	322.9	101.2	221.7	322.9	101.2	221.7	322.9	101.2	221.7	322.9	544.2	1,360.5	1,904.7			
Administration	0.0	0.0	0.0	0.0	10.8	10.8	0.0	10.8	10.8	0.0	10.8	10.8	0.0	10.8	10.8	0.0	53.9	53.9			
Sub-total	38.2	252.0	290.2	101.2	232.5	333.7	101.2	232.5	333.7	101.2	232.5	333.7	101.2	232.5	333.7	506.0	1,162.4	1,668.4			
Physical conti.	0.0	0.0	0.0	9.4	21.8	31.2	9.4	21.8	31.2	9.4	21.8	31.2	9.4	21.8	31.2	47.0	109.0	156.0			
Financial cost	38.2	252.0	290.2	110.6	254.3	364.9	110.6	254.3	364.9	110.6	254.3	364.9	110.6	254.3	364.9	591.2	1,523.4	2,114.6			
Economic cost	34.4	245.8	280.1	99.5	184.3	283.8	99.5	184.3	283.8	99.5	184.3	283.8	99.5	184.3	283.8	532.1	1,167.1	1,699.2			
Remarks:	1. Price share rates of construction: - Labour 0% 15% - Equipment and Material 100% 85% 2. Tax : 10 % for construction and engineering services. 3. Contractor's overhead & profit: 10% 4. Standard conversion factor: 0.9020 (Refer to Table K.2.26) 5. Shadow wage rate (economic wage rate): 70% 6. Price : As of October 1997. 7. Conversion rate : US\$ 1.00 = VND13,956 and US\$1.00= Y113.39																				
	8. Operation/maintenance and replacement cost: Annualized work item - Improvement of canal: 0% 15% - Drainage pumping station: 100% 85% - Installation of drainage pipe: - Construction of drainage ditch: - Administration: - Financial cost 4.7 - Economic cost 3.8																				

Table L.2.32 Annual Disbursement of Construction Cost and Estimation of Its Economic Cost in SE-Zone

(billion VND)

Cost item	Distribution														Total			
	2000		2001-2		2003-4		2005-6		2007-8		2009-10		Total		L.C.	Total		
	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC	Sub-total	FC	LC				
Construction works																		
Engineering cost	25.3	10.8	36.1	2.5	1.1	3.6	2.5	1.1	3.6	2.5	1.1	3.6	2.5	1.1	3.6	50.3	21.8	72.1
Compensation cost	0.0	181.7	181.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	181.7	181.7
Sub total	25.3	192.5	217.8	33.4	73.3	106.7	33.4	73.3	106.7	33.4	73.3	106.7	33.4	73.3	106.7	359.3	925.5	1,284.8
Administration	0.0	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6	0.0	36.4	36.4
Sub-total	25.3	192.5	217.8	33.4	76.9	110.3	33.4	76.9	110.3	33.4	76.9	110.3	33.4	76.9	110.3	167.0	384.7	551.7
Physical cont.	0.0	0.0	0.0	3.1	7.2	10.3	3.1	7.2	10.3	3.1	7.2	10.3	3.1	7.2	10.3	31.0	72.0	103.0
Financial cost	25.3	192.5	217.8	36.5	84.1	120.6	36.5	84.1	120.6	36.5	84.1	120.6	36.5	84.1	120.6	390.3	1,033.9	1,424.2
Economic cost	22.8	188.4	211.2	32.9	61.0	93.8	32.9	61.0	93.8	32.9	61.0	93.8	32.9	61.0	93.8	351.3	798.3	1,149.6
Remarks:																		
1. Price share rates of construction:																		
- Labour																		
- Equipment and Material																		
2. Tax : 10 % for construction and engineering services.																		
3. Contractor's overhead & profit: 10%																		
4. Standard conversion factor: 0.9020 (Refer to Table K.2.26)																		
5. Shadow wage rate (economic wage rate): 70%																		
6. Price : As of October 1997.																		
7. Conversion rate : US\$ 1.00 = VND13.956 and US\$1.00= ¥113.39																		
8. Operation/maintenance and replacement cost:																		
Annualized work item																		
- Improvement of canal:																		
- Installation of drainage pipe:																		
- Construction of drainage ditch:																		
- Administration:																		
- Financial cost																		
- Economic cost																		
F.C.																		
L.C.																		
Total																		

Table L.2.34 Calculation of Economic Internal Rate of Return for the Works of C-Zone

Year in order	Year	Cost				Benefit					Cash balance	
		Construction		OM & R	Total	Direct benefit	Indirect benefit			Total		
		F/C	L/C				Business	Income	Medical			Navigation
(Base year)						366.5	73.6	12.5	10.7	10.8		
1	1999	0.0	0.0	0.0	0.0						0.0	0.0
2	2000	85.1	1,411.3	0.0	1,496.4						0.0	-1,496.4
3	2001	123.1	230.3	0.0	353.4						0.0	-353.4
4	2002	123.1	230.3	0.0	353.4	371.0	73.8	12.6	10.8	11.2	479.4	126.0
5	2003	123.1	230.3	0.0	353.4	373.3	73.8	12.6	10.8	11.4	482.0	128.6
6	2004	123.1	230.3	0.0	353.4	376.0	73.9	12.7	10.9	11.6	485.1	131.7
7	2005	123.1	230.3	0.0	353.4	379.2	74.0	12.7	10.9	11.9	488.7	135.3
8	2006	123.1	230.3	0.0	353.4	382.8	74.1	12.8	11.0	12.2	492.9	139.5
9	2007	123.1	230.3	0.0	353.4	386.9	74.3	12.8	11.0	12.6	497.7	144.3
10	2008	123.1	230.3	0.0	353.4	391.5	74.4	12.9	11.1	13.1	503.0	149.6
11	2009	123.1	230.3	0.0	353.4	396.6	74.5	13.0	11.1	13.5	508.8	155.4
12	2010	123.1	230.3	0.0	353.4	402.2	74.8	13.0	11.2	14.1	515.3	161.9
13	2011			10.0	10.0	408.3	75.0	13.1	11.3	14.7	522.3	512.3
14	2012			10.0	10.0	411.7	75.2	13.2	11.3	15.0	526.4	516.4
15	2013			10.0	10.0	415.1	75.3	13.2	11.4	15.4	530.4	520.4
16	2014			10.0	10.0	418.6	75.5	13.3	11.4	15.8	534.5	524.5
17	2015			10.0	10.0	422.1	75.7	13.3	11.5	16.1	538.7	528.7
18	2016			10.0	10.0	425.6	75.9	13.4	11.5	16.5	542.9	532.9
19	2017			10.0	10.0	429.1	76.1	13.4	11.6	16.9	547.1	537.1
20	2018			10.0	10.0	432.7	76.3	13.5	11.6	17.3	551.3	541.3
21	2019			10.0	10.0	436.3	76.4	13.5	11.6	17.7	555.6	545.6
22	2020			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
23	2021			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
24	2022			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
25	2023			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
26	2024			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
27	2025			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
28	2026			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
29	2027			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
30	2028			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
31	2029			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
32	2030			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
33	2031			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
34	2032			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
35	2033			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
36	2034			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
37	2035			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
38	2036			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
39	2037			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
40	2038			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
41	2039			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
42	2040			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
43	2041			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
44	2042			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
45	2043			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
46	2044			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
47	2045			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
48	2046			30.9	30.9	439.9	76.6	13.6	11.7	18.2	560.0	529.1
49	2047			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
50	2048			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
51	2049			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
52	2050			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
53	2051			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
54	2052			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
55	2053			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
56	2054			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
57	2055			10.0	10.0	439.9	76.6	13.6	11.7	18.2	560.0	550.0
Total		1,316.1	3,714.3	659.0	5,689.4						29,461.5	23,772.1

In the condition of discount rate at 10 %:

Net Present value (NPV): 3,072.9

Internal rate of return (EIRR):

B/C

3,844.9

13.07%

1.25

Table 1.2.35 Calculation of Economic Internal Rate of Return for the Works of N-Zone

		(billion VND)									
Year in order	Year	Cost				Benefit				Cash balance	
		Construction		OM & R	Total	Direct benefit	Indirect benefit				Total
		F/C	I/C				Business	Income	Medical		
	(Base year)					218.1	3.8	2.6	1.8		
1	1999	0.0	0.0	0.0	0.0					0.0	0.0
2	2000	58.4	648.5	0.0	706.9					0.0	-706.9
3	2001	84.5	157.1	0.0	241.6					0.0	-241.6
4	2002	84.5	157.1	0.0	241.6	220.9	4.0	2.8	1.9	229.6	-12.0
5	2003	84.5	157.1	0.0	241.6	222.5	4.1	2.9	2.0	231.5	-10.1
6	2004	84.5	157.1	0.0	241.6	224.5	4.2	3.1	2.1	233.8	-7.8
7	2005	84.5	157.1	0.0	241.6	226.8	4.3	3.3	2.2	236.6	-5.0
8	2006	84.5	157.1	0.0	241.6	229.6	4.5	3.5	2.3	239.9	-1.7
9	2007	84.5	157.1	0.0	241.6	232.7	4.7	3.8	2.5	243.6	2.0
10	2008	84.5	157.1	0.0	241.6	236.2	4.9	4.2	2.6	247.9	6.3
11	2009	84.5	157.1	0.0	241.6	240.2	5.1	4.6	2.8	252.7	11.1
12	2010	84.5	157.1	0.0	241.6	244.5	5.5	5.0	3.0	258.1	16.5
13	2011			6.4	6.4	249.3	5.7	5.5	3.3	263.8	257.4
14	2012			6.4	6.4	251.8	5.9	5.9	3.5	267.1	260.7
15	2013			6.4	6.4	254.4	6.1	6.2	3.6	270.4	264.0
16	2014			6.4	6.4	257.1	6.3	6.6	3.8	273.8	267.4
17	2015			6.4	6.4	259.7	6.5	7.0	4.0	277.2	270.8
18	2016			6.4	6.4	262.4	6.7	7.4	4.2	280.7	274.3
19	2017			6.4	6.4	265.1	7.0	7.9	4.4	284.3	277.9
20	2018			6.4	6.4	267.8	7.2	8.3	4.6	288.0	281.6
21	2019			6.4	6.4	270.6	7.5	8.9	4.8	291.7	285.3
22	2020			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
23	2021			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
24	2022			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
25	2023			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
26	2024			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
27	2025			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
28	2026			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
29	2027			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
30	2028			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
31	2029			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
32	2030			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
33	2031			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
34	2032			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
35	2033			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
36	2034			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
37	2035			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
38	2036			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
39	2037			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
40	2038			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
41	2039			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
42	2040			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
43	2041			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
44	2042			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
45	2043			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
46	2044			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
47	2045			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
48	2046			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
49	2047			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
50	2048			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
51	2049			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
52	2050			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
53	2051			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
54	2052			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
55	2053			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
56	2054			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
57	2055			6.4	6.4	273.4	7.7	9.4	5.0	295.5	289.1
Total		903.4	2,219.5	288.0	3,410.9					15,308.5	11,897.6

In the condition of discount rate at 10 %:

Net Present value (NPV): 1,831.2 1,927.0 95.8
 Internal rate of return (EIRR): 10.63%

B/C 1.05

Table L.2.36 Calculation of Economic Internal Rate of Return for the Works of W-Zone

		(billion VND)									
Year in order	Year	Cost				Benefit				Cash balance	
		Construction		OM & R	Total	Direct benefit	Indirect benefit				
		F/C	L/C				Business	Income	Medical		
(Base year)						40.9	4.1	1.7	1.0		
1	1999	0.0	0.0	0.0	0.0					0.0	0.0
2	2000	27.5	258.6	0.0	286.1					0.0	-286.1
3	2001	79.4	147.3	0.0	226.7					0.0	-226.7
4	2002	79.4	147.3	0.0	226.7	44.0	4.1	1.8	1.1	51.1	-175.6
5	2003	79.4	147.3	0.0	226.7	46.7	4.2	2.0	1.2	54.0	-172.7
6	2004	79.4	147.3	0.0	226.7	50.2	4.2	2.1	1.3	57.8	-168.9
7	2005	79.4	147.3	0.0	226.7	54.6	4.3	2.4	1.4	62.7	-164.0
8	2006			3.0	3.0	60.1	4.4	2.6	1.6	68.7	65.7
9	2007			3.0	3.0	63.0	4.5	2.8	1.6	71.9	68.9
10	2008			3.0	3.0	66.1	4.5	3.0	1.7	75.3	72.3
11	2009			3.0	3.0	69.3	4.6	3.1	1.8	78.9	75.9
12	2010			3.0	3.0	72.8	4.6	3.3	2.0	82.6	79.6
13	2011			3.0	3.0	76.3	4.7	3.5	2.1	86.6	83.6
14	2012			3.0	3.0	80.1	4.7	3.7	2.2	90.7	87.7
15	2013			3.0	3.0	84.0	4.8	4.0	2.3	95.1	92.1
16	2014			3.0	3.0	88.1	4.8	4.2	2.5	99.6	96.6
17	2015			3.0	3.0	92.5	4.9	4.5	2.6	104.4	101.4
18	2016			3.0	3.0	97.0	4.9	4.7	2.7	109.4	106.4
19	2017			3.0	3.0	101.8	5.0	5.0	2.9	114.7	111.7
20	2018			3.0	3.0	106.8	5.0	5.3	3.1	120.2	117.2
21	2019			3.0	3.0	112.0	5.1	5.6	3.3	126.0	123.0
22	2020			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
23	2021			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
24	2022			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
25	2023			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
26	2024			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
27	2025			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
28	2026			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
29	2027			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
30	2028			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
31	2029			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
32	2030			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
33	2031			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
34	2032			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
35	2033			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
36	2034			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
37	2035			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
38	2036			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
39	2037			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
40	2038			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
41	2039			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
42	2040			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
43	2041			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
44	2042			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
45	2043			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
46	2044			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
47	2045			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
48	2046			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
49	2047			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
50	2048			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
51	2049			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
52	2050			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
53	2051			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
54	2052			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
55	2053			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
56	2054			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
57	2055			3.0	3.0	117.5	5.1	6.0	3.4	132.1	129.1
Total		424.5	995.1	150.0	1,569.6					6,305.0	4,735.4

In the condition of discount rate at 10 %:

Net Present value (NPV): 961.9 638.9 -323.0
 Internal rate of return (EIRR): 6.83%
 B/C 0.66

Table L.2.37 Calculation of Economic Internal Rate of Return for the Works of S-Zone

		(billion VND)									
Year in order	Year	Cost				Benefit				Cash balance	
		Construction		OM & R	Total	Direct benefit	Indirect benefit				
		F/C	I/C				Business	Income	Medical		
(Base year)						39.1	1.2	1.8	1.0		
1	1999	0.0	0.0	0.0	0.0					0.0	0.0
2	2000	19.4	189.4	0.0	208.8					0.0	-208.8
3	2001	56.3	104.7	0.0	161.0					0.0	-161.0
4	2002	56.3	104.7	0.0	161.0					0.0	-161.0
5	2003	56.3	104.7	0.0	161.0	44.9	1.3	2.1	1.2	49.5	-111.5
6	2004	56.3	104.7	0.0	161.0	48.4	1.4	2.3	1.3	53.5	-107.5
7	2005	56.3	104.7	0.0	161.0	52.9	1.5	2.6	1.5	58.4	-102.6
8	2006			2.2	2.2	58.4	1.6	2.9	1.6	64.5	62.3
9	2007			2.2	2.2	61.4	1.7	3.1	1.7	67.9	65.7
10	2008			2.2	2.2	64.5	1.7	3.3	1.8	71.4	69.2
11	2009			2.2	2.2	67.9	1.8	3.5	2.0	75.1	72.9
12	2010			2.2	2.2	71.4	1.8	3.7	2.1	79.0	76.8
13	2011			2.2	2.2	75.0	1.9	3.9	2.2	83.1	80.9
14	2012			2.2	2.2	78.9	2.0	4.2	2.3	87.5	85.3
15	2013			2.2	2.2	83.0	2.1	4.5	2.5	92.0	89.8
16	2014			2.2	2.2	87.2	2.2	4.7	2.6	96.8	94.6
17	2015			2.2	2.2	91.7	2.3	5.0	2.8	101.9	99.7
18	2016			2.2	2.2	96.5	2.4	5.4	3.0	107.2	105.0
19	2017			2.2	2.2	101.4	2.6	5.7	3.2	112.9	110.7
20	2018			2.2	2.2	106.6	2.7	6.1	3.4	118.8	116.6
21	2019			2.2	2.2	112.1	2.8	6.5	3.6	125.0	122.8
22	2020			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
23	2021			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
24	2022			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
25	2023			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
26	2024			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
27	2025			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
28	2026			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
29	2027			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
30	2028			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
31	2029			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
32	2030			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
33	2031			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
34	2032			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
35	2033			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
36	2034			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
37	2035			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
38	2036			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
39	2037			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
40	2038			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
41	2039			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
42	2040			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
43	2041			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
44	2042			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
45	2043			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
46	2044			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
47	2045			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
48	2046			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
49	2047			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
50	2048			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
51	2049			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
52	2050			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
53	2051			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
54	2052			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
55	2053			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
56	2054			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
57	2055			2.2	2.2	117.9	3.0	6.9	3.8	131.5	129.3
Total		300.9	712.9	110.0	1,123.8					6,179.0	5,055.2

In the condition of discount rate at 10%:

Net Present value (NPV): 688.1 583.4 -104.7

Internal rate of return (EIRR): 8.70%

B/C 0.85

Table L.2.38 Calculation of Economic Internal Rate of Return for the Works of NE-Zone

		(billion VND)									
Year in order	Year	Cost				Benefit				Total	Cash balance
		Construction		OM & R	Total	Direct benefit	Indirect benefit				
		F/C	I/C				Business	Income	Medcal		
	(Base year)					3.7	0.0	3.2	0.5		
1	1999	0.0	0.0	0.0	0.0					0.0	0.0
2	2000	34.4	245.8	0.0	280.2					0.0	-280.2
3	2001	62.2	115.2	0.0	177.4					0.0	-177.4
4	2002	62.2	115.2	0.0	177.4					0.0	-177.4
5	2003	62.2	115.2	0.0	177.4	5.0	0.0	3.6	0.6	9.1	-168.3
6	2004	62.2	115.2	0.0	177.4	5.8	0.0	3.8	0.6	10.2	-167.2
7	2005	62.2	115.2	0.0	177.4	6.9	0.0	4.1	0.7	11.6	-165.8
8	2006	62.2	115.2	0.0	177.4	8.4	0.0	4.4	0.7	13.5	-163.9
9	2007	62.2	115.2	0.0	177.4	10.2	0.0	4.8	0.8	15.8	-161.6
10	2008	62.2	115.2	0.0	177.4	12.6	0.0	5.3	0.9	18.7	-158.7
11	2009			3.8	3.8	15.5	0.0	5.9	1.0	22.3	18.5
12	2010			3.8	3.8	17.6	0.0	6.2	1.0	24.8	21.0
13	2011			3.8	3.8	20.1	0.0	6.5	1.1	27.7	23.9
14	2012			3.8	3.8	22.9	0.0	6.9	1.1	30.9	27.1
15	2013			3.8	3.8	26.0	0.0	7.3	1.2	34.5	30.7
16	2014			3.8	3.8	29.6	0.0	7.7	1.3	38.6	34.8
17	2015			3.8	3.8	33.8	0.0	8.2	1.3	43.2	39.4
18	2016			3.8	3.8	38.4	0.0	8.6	1.4	48.5	44.7
19	2017			3.8	3.8	43.8	0.0	9.1	1.5	54.4	50.6
20	2018			3.8	3.8	49.9	0.0	9.6	1.6	61.0	57.2
21	2019			3.8	3.8	56.8	0.0	10.2	1.6	68.6	64.8
22	2020			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
23	2021			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
24	2022			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
25	2023			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
26	2024			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
27	2025			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
28	2026			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
29	2027			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
30	2028			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
31	2029			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
32	2030			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
33	2031			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
34	2032			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
35	2033			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
36	2034			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
37	2035			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
38	2036			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
39	2037			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
40	2038			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
41	2039			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
42	2040			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
43	2041			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
44	2042			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
45	2043			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
46	2044			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
47	2045			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
48	2046			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
49	2047			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
50	2048			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
51	2049			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
52	2050			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
53	2051			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
54	2052			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
55	2053			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
56	2054			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
57	2055			3.8	3.8	64.7	0.0	10.7	1.7	77.1	73.3
Total		532.0	1,167.4	178.6	1,878.0					3,310.6	1,432.6

In the condition of discount rate at 10 %:

Net Present value (NPV): 1,028.2 231.5 -796.7
 Internal rate of return (EIRR): 2.19%
 B/C 0.23

Table L.2.39 Calculation of Economic Internal Rate of Return for the Works of SE-Zone

		(billion VND)									
Year in order	Year	Cost				Benefit				Total	Cash balance
		Construction		OM & R	Total	Direct benefit	Indirect benefit				
		F/C	I/C				Business	Income	Medcal		
(Base year)						39.4	0.3	5.3	1.1		
1	1999	0.0	0.0	0.0	0.0					0.0	0.0
2	2000	22.8	188.4	0.0	211.2					0.0	-211.2
3	2001	32.9	61.0	0.0	93.9					0.0	-93.9
4	2002	32.9	61.0	0.0	93.9					0.0	-93.9
5	2003	32.9	61.0	0.0	93.9					0.0	-93.9
6	2004	32.9	61.0	0.0	93.9					0.0	-93.9
7	2005	32.9	61.0	0.0	93.9	48.5	0.4	7.2	1.4	57.6	-36.3
8	2006	32.9	61.0	0.0	93.9	51.8	0.5	7.9	1.6	61.8	-32.1
9	2007	32.9	61.0	0.0	93.9	55.8	0.5	8.8	1.7	66.8	-27.1
10	2008	32.9	61.0	0.0	93.9	60.4	0.6	9.8	1.9	72.7	-21.2
11	2009	32.9	61.0	0.0	93.9	65.7	0.6	11.0	2.2	79.6	-14.3
12	2010	32.9	61.0	0.0	93.9	71.9	0.8	12.4	2.5	87.5	-6.4
13	2011			2.5	2.5	78.9	0.8	14.1	2.8	96.6	94.1
14	2012			2.5	2.5	83.2	0.9	15.2	3.0	102.3	99.8
15	2013			2.5	2.5	87.7	0.9	16.4	3.3	108.3	105.8
16	2014			2.5	2.5	92.5	1.0	17.6	3.5	114.7	112.2
17	2015			2.5	2.5	97.6	1.1	19.0	3.8	121.5	119.0
18	2016			2.5	2.5	103.0	1.2	20.5	4.1	128.7	126.2
19	2017			2.5	2.5	108.6	1.3	22.0	4.4	136.3	133.8
20	2018			2.5	2.5	114.6	1.4	23.8	4.7	144.5	142.0
21	2019			2.5	2.5	120.8	1.5	25.6	5.1	153.1	150.6
22	2020			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
23	2021			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
24	2022			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
25	2023			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
26	2024			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
27	2025			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
28	2026			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
29	2027			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
30	2028			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
31	2029			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
32	2030			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
33	2031			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
34	2032			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
35	2033			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
36	2034			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
37	2035			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
38	2036			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
39	2037			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
40	2038			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
41	2039			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
42	2040			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
43	2041			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
44	2042			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
45	2043			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
46	2044			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
47	2045			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
48	2046			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
49	2047			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
50	2048			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
51	2049			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
52	2050			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
53	2051			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
54	2052			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
55	2053			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
56	2054			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
57	2055			2.5	2.5	127.5	1.6	27.6	5.5	162.2	159.7
Total		351.8	798.4	112.5	1,262.7					7,370.3	6,107.6

In the condition of discount rate at 10 %:

Net Present value (NPV): 659.2 600.0 -59.2

Internal rate of return (EIRR): 9.28%

B/C 0.91

Table L.2.40 Calculation of Economic Internal Rate of Return for the Works of Whole Study Area

		(billion VND)														
Year in order	Year	Cost (Construction cost + OMR cost)						Total	Benefit (Direct and indirect benefit)						Total	Cash balance
		C-Zone	N-Zone	W-Zone	S-Zone	NE-Zone	SE-Zone		C-Zone	N-Zone	W-Zone	S-Zone	NE-Zone	SE-Zone		
(Base year)																
1	1999	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	2000	1,496.4	0.0	0.0	0.0	0.0	0.0	1,496.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1,496.4
3	2001	353.4	0.0	0.0	0.0	0.0	0.0	353.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-353.4
4	2002	353.4	0.0	0.0	0.0	0.0	0.0	353.4	479.4	0.0	0.0	0.0	0.0	0.0	479.4	126.0
5	2003	353.4	0.0	286.1	0.0	0.0	0.0	639.5	481.9	0.0	0.0	0.0	0.0	0.0	481.9	-157.6
6	2004	353.4	0.0	226.7	0.0	0.0	0.0	580.1	485.0	0.0	0.0	0.0	0.0	0.0	485.0	-95.1
7	2005	353.4	706.9	226.7	0.0	0.0	211.2	1,498.2	488.6	0.0	54.1	0.0	0.0	0.0	512.7	-955.5
8	2006	353.4	241.6	226.7	0.0	0.0	93.9	915.6	492.7	0.0	58.6	0.0	0.0	0.0	551.3	-364.3
9	2007	353.4	241.6	226.7	0.0	0.0	93.9	915.6	497.4	234.0	64.2	0.0	0.0	0.0	795.6	-120.0
10	2008	353.4	241.6	226.7	208.8	0.0	93.9	1,124.4	502.5	237.2	70.9	0.0	0.0	0.0	810.6	-313.8
11	2009	353.4	241.6	3.0	161.0	0.0	93.9	852.9	508.3	240.8	78.9	0.0	0.0	0.0	828.0	-24.9
12	2010	353.4	241.6	3.0	161.0	280.2	93.9	1,133.1	515.3	245.5	82.6	0.0	0.0	69.3	912.8	-220.3
13	2011	10.0	241.6	3.0	161.0	177.4	93.9	686.9	522.3	250.0	86.6	64.3	0.0	76.1	999.4	312.5
14	2012	10.0	241.6	3.0	161.0	177.4	93.9	686.9	526.4	255.0	90.7	73.6	0.0	84.0	1,029.7	342.8
15	2013	10.0	241.6	3.0	161.0	177.4	93.9	686.9	530.4	260.6	95.1	84.4	17.5	93.1	1,081.1	394.2
16	2014	10.0	241.6	3.0	2.2	177.4	93.9	528.1	534.5	266.7	99.6	96.8	22.3	103.5	1,123.5	595.4
17	2015	10.0	241.6	3.0	2.2	177.4	93.9	528.1	538.7	273.4	104.4	101.9	28.3	115.2	1,161.9	633.8
18	2016	10.0	6.4	3.0	2.2	177.4	2.5	201.5	542.9	280.7	109.4	107.2	35.6	128.7	1,204.5	1,003.0
19	2017	10.0	6.4	3.0	2.2	177.4	2.5	201.5	547.1	284.3	114.7	112.9	44.6	136.3	1,239.8	1,038.3
20	2018	10.0	6.4	3.0	2.2	177.4	2.5	201.5	551.3	288.0	120.2	118.8	55.4	144.5	1,278.1	1,076.6
21	2019	10.0	6.4	3.0	2.2	3.8	2.5	27.9	555.6	291.7	126.0	125.0	68.6	153.1	1,320.0	1,292.1
22	2020	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
23	2021	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
24	2022	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
25	2023	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
26	2024	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
27	2025	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
28	2026	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
29	2027	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
30	2028	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
31	2029	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
32	2030	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
33	2031	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
34	2032	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
35	2033	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
36	2034	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
37	2035	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
38	2036	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
39	2037	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
40	2038	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
41	2039	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
42	2040	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
43	2041	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
44	2042	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
45	2043	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
46	2044	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
47	2045	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
48	2046	30.9	6.4	3.0	2.2	3.8	2.5	48.8	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,309.6
49	2047	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
50	2048	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
51	2049	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
52	2050	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
53	2051	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
54	2052	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
55	2053	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
56	2054	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
57	2055	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
58	2056	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
59	2057	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
60	2058	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
61	2059	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
62	2060	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
63	2061	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
64	2062	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
65	2063	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
66	2064	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
67	2065	10.0	6.4	3.0	2.2	3.8	2.5	27.9	560.0	295.5	132.1	131.5	77.1	162.2	1,358.4	1,330.5
Total		5,789.4	3,412.9	1,590.6	1,128.2	1,878.0	1,275.2	15,104.3	35,059.7	17,000.7	7,432.1	6,934.6	3,821.0	8,564.2	78,812.3	63,708.0

In the condition of discount rate at 10 %:

Net Present value (NPV):	6,059.9	6,561.4	501.5
Internal rate of return (I-IRR):			10.97%

B C

Table L.2.41 Willingness of People to Pay (WTP) for Sewerage and Waste Water Treatment Services

A-1. WTP as a Result of Environmental Survey

District	WTP (VNĐ/HH)										Total of WTP in each district (VNĐ/HH)	Total of (VNĐ/HH) samples
	1-2,500	2,500-5,000	5,000-7,500	7,500-10,000	10,000-12,500	12,500-15,000	15,000-17,500	17,500-20,000	20,000-22,500	22,500-25,000		
Mid-amount	3	4	6	16	4	18	19	0	0	0	70	7,900
District 1	0	0	0	4	18	10	0	0	0	0	70	6,429
District 3	0	0	3	3,314	5,26	1,66	65,121	1,281	1,000	1,000	1,000	1,000
District 4	0	0	2	20	8	13	12	10	0	0	70	6,450
District 5	1	2	9	7	18	27	6	0	0	0	70	7,071
District 6	0	2	7	21	27	11	2	0	0	0	70	7,800
District 8	0	0	0	10	6	14	35	5	0	0	70	3,993
District 10	5	1	2	14	17	23	9	0	0	0	71	7,521
D. Go Vap	0	0	0	12	5	28	5	0	0	0	50	5,580
D. Tan Binh	1	0	0	3	6	35	2	0	0	0	50	3,750
D. Binh Thanh	0	0	0	3	6	7	5	27	2	0	50	4,570
D. Phu Nhuan	0	0	0	13	7	10	19	1	0	0	50	5,100
District 12	0	0	0	2	11	27	7	1	0	0	40	3,250
D. Thu Duc	0	2	2	7	9	12	7	1	0	0	40	6,375
District 2	2	0	1	6	8	8	11	4	0	0	40	5,838
District 9	1	1	1	1	8	11	15	2	0	0	40	5,113
District 7	3	1	1	6	11	14	3	1	0	0	40	7,588
D. Binh Chanh	1	1	1	5	3	5	4	0	0	0	20	7,675
D. Nha Be	0	0	0	1	3	7	3	4	2	0	20	5,450
Total	19	17	43	169	171	252	294	36	1,001	100%	1,001	100%
Percentage (%)	1.90%	1.70%	4.30%	16.88%	17.08%	25.17%	29.37%	3.60%	3.60%	100%	100%	100%
Weighted mean (mid-amount x %)	484	306	558	1,519	1,110	1,133	794	0	5,845	(per HH)	5,845	5.845

Source: Result of Interview Survey on Sewerage and Environmental Sanitation in Ho Chi Minh City made by JICA Study Team, 1998.

A-2. For Reference of ATP as a Result of Environmental Survey

District	Family size (person)		Water volume used (m ³ /day)		Water volume used (m ³ /month)		Payment for water (VNĐ/HH)	Actual water charge (VNĐ/HH)	Amount of monthly income (VNĐ/HH)
	General	Year	General	Year	General	Year			
Mid-amount	5.53	1.16	35.13	1,837	63,030	1,837	1,291	1,291	
District 1	6.53	1.96	59.70	64,508	1,128	1,128	1,769		
District 3	5.26	1.66	50.36	65,121	1,281	1,281	1,000		
District 4	5.23	1.82	55.45	60,800	1,180	1,180	1,795		
District 5	3.71	2.03	61.79	69,214	1,151	1,151	2,475		
District 6	5.23	1.66	50.56	50,954	1,268	1,268	2,584		
District 8	5.54	1.66	50.56	50,954	1,268	1,268	1,533		
District 10	5.52	1.03	31.42	53,924	2,453	2,453	1,046		
D. Go Vap	5.34	1.11	33.67	40,000	1,680	1,680	967		
D. Tan Binh	5.08	1.21	36.87	37,179	1,370	1,370	1,173		
D. Binh Thanh	4.78	0.94	28.65	34,486	1,297	1,297	1,788		
D. Phu Nhuan	3.93	1.80	54.75	15,325	313	313	1,273		
District 12	4.98	1.63	49.50	52,029	1,002	1,002	1,238		
D. Thu Duc	5.95	0.95	28.78	18,000	915	915	1,134		
District 2	5.43	1.31	39.94	46,450	1,018	1,018	1,229		
District 9	5.15	1.99	60.45	67,474	1,168	1,168	1,373		
District 7	5.65	2.04	62.19	38,333	1,643	1,643	2,240		
D. Binh Chanh	6.15	1.28	38.78	43,500	950	950	1,410		
D. Nha Be	5.15	1.41	43.54	46,955	1,327	1,327	1,505		
Average	5.15	1.41	43.54	46,955	1,327	1,327	1,505		

B-1. WTP as a Result of Flood Damage Survey

District	WTP (VNĐ/HH)										Total of WTP in each district (VNĐ/HH)	Total of (VNĐ/HH) samples
	1-10,000	10,000-20,000	20,000-30,000	30,000-40,000	40,000-50,000	50,000-60,000	60,000-70,000	70,000-80,000	80,000-90,000	90,000-100,000		
Mid-amount	16	4	4	1	2	15	10	0	0	0	47	7,940
District 1	17	4	4	1	2	15	10	0	0	0	53	11,038
District 3	23	0	0	0	0	0	0	0	0	0	50	4,600
District 4	47	2	0	0	1	0	0	0	0	0	50	10,300
District 5	21	8	2	1	2	15	4	0	0	0	53	12,170
District 6	37	11	2	0	1	8	0	0	0	0	59	12,542
District 8	30	11	2	0	2	11	4	0	0	0	60	12,250
District 10	35	8	6	0	1	4	0	0	0	0	50	14,800
District 11	27	9	2	0	3	16	1	0	0	0	52	21,246
D. Go Vap	13	20	9	1	5	4	0	0	0	0	58	12,759
D. Tan Binh	60	0	0	0	0	0	0	0	0	0	60	10,000
D. Binh Thanh	31	7	5	1	3	3	7	0	0	0	57	14,123
D. Phu Nhuan	32	14	2	0	0	1	0	0	0	0	49	13,571
District 12	40	5	1	0	0	0	0	0	0	0	49	11,122
D. Thu Duc	15	5	1	0	1	10	20	0	0	0	52	7,308
District 2	36	1	0	0	0	13	0	0	0	0	50	8,900
District 9	15	9	10	1	1	14	0	0	0	0	50	15,800
District 7	38	11	0	4	1	6	0	0	0	0	60	14,000
D. Binh Chanh	7	1	0	0	5	22	8	0	0	0	43	10,465
D. Nha Be	540	130	46	9	27	163	87	1,002	1,002	1,002	1,002	1,002
Percentage (%)	53.8%	12.97%	4.59%	0.90%	2.6%	16.27%	8.68%	100%	100%	100%	100%	100%
Weighted mean (Amount x %)	5,389	2,595	1,377	359	1,347	813	0	0	0	0	11,881	11,881
(VNĐ/HH)	5,389	2,595	1,377	359	1,347	813	0	0	0	0	11,881	11,881

Source: Result of Interview Survey on Flood Damages in Ho Chi Minh City made by JICA Study Team, 1998.

Table L.2.42 Affordability of People to Pay (ATP) for Sewerage and Waste Water Treatment Services

District	Classified group* by samples	Family size (persons working per HH)	Nos. of persons working per HH	Total amount of income per month	Amount of wages/salaries per person	Expenditure												Balance (amount to be able to save)						
						(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)		(M)	(N)	(O)	(P)	(Q)	(R)
						Food		Cloths		Housing		Utilities		Tax		Education			Transport		Health		Total	
District 3	(1) A	43	6.49	2,576,744	650,955	894,496	41,279	174	112,403	2,442	251,027	127,481	2,171	1,431,473	945,271									
District 3	(2) B	50	5.12	1,580,120	831,642	553,150	33,333	253,067	328,507	0	187,067	83,067	71,667	1,529,657	50,463									
D. Tan Binh	(3) B	68	5.21	1,467,206	750,150	666,471	114,093	316,299	199,105	22,618	225,876	136,826	75,404	1,756,692	-289,487									
D. Binh Thanh	(4) B	32	6.00	1,549,688	762,923	879,948	13,802	287,240	130,573	2,326	127,630	34,063	10,677	1,486,258	63,430									
D. Phu Nhuan	(5) B	48	5.04	2,732,292	1,192,273	845,833	28,299	149,306	249,601	43,403	163,542	109,826	30,122	1,619,931	1,112,561									
District 1	(6) C	48	5.48	1,656,875	914,138	741,146	52,431	49,665	48,227	17,396	110,503	45,868	26,215	1,091,451	565,424									
District 3	(7) C	71	5.87	1,845,803	903,807	749,448	40,728	7,207	137,185	1,027	117,160	117,700	14,202	1,184,656	661,147									
District 4	(8) C	47	6.38	2,456,383	1,327,011	1,115,691	74,645	3,191	187,500	28,154	233,014	162,801	22,163	1,827,161	629,222									
District 6	(9) C	141	6.28	2,414,220	1,028,414	720,263	89,196	17,940	241,469	6,538	101,876	81,028	44,495	1,302,807	1,111,413									
District 8	(10) C	360	5.41	1,551,889	751,925	711,316	66,487	4,308	130,247	11,205	89,662	77,712	24,418	1,115,356	456,533									
D. Phu Nhuan	(11) C	50	5.84	2,293,000	1,124,020	956,658	101,000	8,273	134,133	10,620	236,448	117,617	15,353	1,580,083	712,917									
District 12	(12) C	40	5.38	1,450,500	1,036,071	832,750	176,875	0	131,021	68,744	190,521	114,375	54,021	1,568,306	-117,806									
Overall average		998	5.71	1,947,893	939,444	805,598	71,014	91,389	169,148	17,873	169,527	100,697	32,574	1,457,819	490,074									
Structure of family economy (%)				100.00%	41.36%	3.65%	4.69%	8.68%	0.92%	8.70%	5.17%	1.67%	74.84%	25.16%										

FINDINGS: Estimation of affordable amount to be paid by people for sewerage and waste water treatment services:

- (1) A cost for utilities consists of payments for potable, electricity and garbage or rubbish cost.
- (2) According to the tariff system of the Water Supply Co. of Ho Chi Minh City, people can use water up to 4 m³ with rate of VND1,300/m³ per person in a family. Therefore, the cost for potable water to be paid can be estimated as: VND1,300/m³ x 4 m³ x 5.71 persons = VND29,692/family per month in average.
- (3) On the other hand, the cost proportion for electricity and garbage/rubbish is 2:1 according some answer sheets for "Social Survey" presented below.
- (4) Therefore, actual costs for water and electricity may be estimated at VND122,663 (= 29,692 + (169,148-29,692)/3 x 2) per family which is 6.30% to the total family income in share rate. This share rate is rather high comparing the standard rate (usually, 5% in maximum in developing countries).
- (5) As shown in the result of "Social Survey" above, average families have a capability to pay more because they have a saved money amounting to VND490,074 with a share rate of around 25% of their total income.
- (6) Usually, charge for sewerage and waste water treatment services should not be more than the charge for potable water, but sometimes there may be almost the same amount with that for potable water.
- (7) In case that the maximum charge for sewerage and waste water treatment services, for example VND30,000/HH as almost the same amount of potable water used, is applied, the share rate of the costs for water and electricity including the said charge will become at 7.85% to their total family income, and this amount has an affordability if considered their family economy.
- (8) As a result, an affordable amount of service charge for sewerage and waste water treatment services will be within VND30,000/HH per month for lowest income family. Practically, the rate of charge for the services will be estimated based on the construction cost and cost for operation/maintenance but should be taken into account of this situation.

Source: Result of Interview Survey on "Social Survey of Relocation/Resettlement" made by JICA Study Team, 1998.

(Note) *: Class A is for the inhabitants who are expected to be relocated in future but no concrete plan yet.

Class B is for the inhabitants who have already agreed with relocation and waiting for new place.

Class C is for the inhabitants who have already relocated to the new relocation site, on/off-site.

Table L.2.43 Estimation of Revenue of Sewerage Treatment Services

A. Revenue Sources

Kind of revenue sources	1997	1998	2020
Population in the service area	3,906,102	3,973,066	5,774,748
Domestic subscribers for potable water (HHs) ¹⁾ in total	684,081	695,808	1,011,339
Actual domestic subscribers for services (HH)	347,582	353,540	513,862
Commercial subscribers for potable water ²⁾	336,499	342,268	497,478
Industrial subscribers for potable water ³⁾	19,244	18,634	21,915

(Note 1) Average family size: 5.71 (persons/family)

(Note 2) Based on Interview Survey by JICA Study Team. See Table K 2.16.

(Note 3) Estimated based on Statistical Yearbook applying the increasing rate of population.

B. Revenue in Case of VND9,000/HH.month as Service Charge (million VND/annum)

Kind of revenue sources	1998	2020
Domestic subscribers for potable water	38,182	55,497
Commercial subscribers for potable water	151,146	219,686
Industrial subscribers for potable water	3,667	4,313
Total	192,995	279,496

(Note) Unit service charge (VND/annum.water subscriber):

108,000 (from domestic water subscribers, VND9,000/month.HH)

441,600 (from commercial water subscribers, VND36,800/month.shop)

196,800 (from industrial water subscribers, VND16,400/month.factory)

C. Revenue in Case of VND20,000/HH.month as Service Charge (million VND/annum)

Kind of revenue sources	1998	2020
Domestic subscribers for potable water	84,850	123,327
Commercial subscribers for potable water	335,970	488,324
Industrial subscribers for potable water	8,162	9,599
Total	428,982	621,250

(Note) Unit service charge (VND/annum.water subscriber):

240,000 (from domestic water subscribers, VND20,000/month.HH)

981,600 (from commercial water subscribers, VND81,800/month.shop)

438,000 (from industrial water subscribers, VND36,500/month.factory)

D. Revenue in Case of VND30,000/HH.month as Service Charge (million VND/annum)

Kind of revenue sources	1998	2020
Domestic subscribers for potable water	127,274	184,990
Commercial subscribers for potable water	503,750	732,188
Industrial subscribers for potable water	12,231	14,385
Total	643,256	931,563

(Note) Unit service charge (VND/annum.water subscriber):

360,000 (from domestic water subscribers, VND30,000/month.HH)

1,471,800 (from commercial water subscribers, VND122,650/month.shop)

656,400 (from industrial water subscribers, VND54,700/month.factory)

Table L.2.44 Annual Disbursement of Financial Construction Cost by Zone

Year	(VND million)										
	TLBC	NLTN	THLG	THBNDT	SS	SE	SN-1	SN-2	SW	Total	
2000				125,011						125,011	
2001				735,427						735,427	
2002				735,427						735,427	
2003		126,613		735,427						862,040	
2004		751,739		735,427						1,487,166	
2005	38,978	751,739	74,156	735,427						1,600,300	
2006	244,975	751,739	439,754							1,436,468	
2007	244,975	751,739	439,754							1,436,468	
2008	244,975	751,739	439,754							684,729	
2009	244,975		439,754						78,723	855,814	
2010	244,975		439,754		92,362				451,948	1,050,765	
2011					598,817				451,948	1,050,765	
2012					598,817				451,948	1,050,765	
2013					598,817				451,948	1,050,765	
2014					598,817				451,948	1,050,765	
2015					598,817	69,790	96,823	51,984	451,948	1,269,362	
2016					450,249	450,249	631,083	336,819		1,418,151	
2017					450,249	450,249	631,083	336,819		1,418,151	
2018					450,249	450,249	631,083	336,819		1,418,151	
2019					450,249	450,249	631,083	336,819		1,418,151	
2020					450,249	450,249	631,083	336,819		1,418,151	
Total	1,263,853	3,885,308	2,272,926	3,802,146	2,321,035	3,086,447	3,252,238	1,736,079	2,338,463	23,958,495	

Table L.2.49 Suitability Analysis of Service Charge in Case of VND20,000/Month of Charge for Sewerage Treatment Services

Year in order	Year	Cost (OM Cost + Reservation for Replacement Cost)																(billion VND)						
		H1EC		NL1N		H1LG		H1B		SS		SE		SN-1		SN-2		SW		Cost in total	Benefit (Revenue)	Cash balance		
		R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost							
(Base year)																						0.0	0.0	0.0
1	1999																			0.0	0.0	0.0		
2	2000																			0.0	0.0	0.0		
3	2001																			0.0	0.0	0.0		
4	2002																			0.0	0.0	0.0		
5	2003																			0.0	0.0	0.0		
6	2004																			0.0	0.0	0.0		
7	2005																			0.0	0.0	0.0		
8	2006							26.0	57.5											83.5	155.2	31.7		
9	2007							26.0	57.5											83.5	154.8	31.3		
10	2008							26.0	57.5											83.5	154.5	31.0		
11	2009		31.6	79.3				26.0	57.5											194.4	293.4	99.0		
12	2010		31.6	79.3				26.0	57.5											194.4	293.7	99.3		
13	2011	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5											283.2	389.4	106.2		
14	2012	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5											283.2	391.1	107.9		
15	2013	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5											283.2	392.9	109.7		
16	2014	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5											283.2	394.6	111.4		
17	2015	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5											283.2	396.8	113.6		
18	2016	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5						8.0	19.9	319.6	479.3	126.8			
19	2017	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5						8.0	19.9	319.6	481.7	128.2			
20	2018	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5						8.0	19.9	319.6	493.7	131.2			
21	2019	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5						8.0	19.9	319.6	503.4	133.8			
22	2020	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5						8.0	19.9	319.6	513.8	141.2			
23	2021	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
24	2022	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
25	2023	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
26	2024	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
27	2025	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
28	2026	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
29	2027	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
30	2028	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
31	2029	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
32	2030	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
33	2031	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
34	2032	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
35	2033	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
36	2034	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
37	2035	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
38	2036	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
39	2037	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
40	2038	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
41	2039	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
42	2040	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
43	2041	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
44	2042	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
45	2043	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
46	2044	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
47	2045	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
48	2046	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
49	2047	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
50	2048	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
51	2049	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
52	2050	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
53	2051	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
54	2052	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
55	2053	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
56	2054	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
57	2055	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
58	2056	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
59	2057	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
60	2058	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
61	2059	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
62	2060	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
63	2061	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	623.5	158.0		
64	2062	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0						

Table L.2.50 Suitability Analysis of Service Charge in Case of VND13,532/Month of Charge for Sewerage Treatment Services

Year or code	Year	Cost (OM Cost + Reservation for Replacement Cost)														Benefit						
		TI BC	MLTN	TI LG	TI UB	SS	SE	SN-1	SN-2	SW	Cost in total	(Revenue) in total	Cash balance									
		R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost	R. cost								
1	1999															0.0	0.0	0.0				
2	2000															0.0	0.0	0.0				
3	2001															0.0	0.0	0.0				
4	2002															0.0	0.0	0.0				
5	2003															0.0	0.0	0.0				
6	2004															0.0	0.0	0.0				
7	2005															0.0	0.0	0.0				
8	2006						26.0	57.5								83.5	104.8	21.3				
9	2007						26.0	57.5								83.5	104.6	21.1				
10	2008						26.0	57.5								83.5	104.3	20.8				
11	2009			31.6	79.3		26.0	57.5								194.4	198.1	3.7				
12	2010			31.6	79.3		26.0	57.5								194.4	198.3	3.9				
13	2011	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5							283.2	263.0	-20.2				
14	2012	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5							283.2	264.1	-19.1				
15	2013	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5							283.2	265.3	-17.9				
16	2014	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5							283.2	266.5	-16.7				
17	2015	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5							283.2	265.0	-11.8				
18	2016	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5				8.0	19.9	319.6	321.6	-27.9			
19	2017	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5				8.0	19.9	319.6	327.3	-22.2			
20	2018	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5				8.0	19.9	319.6	332.4	-16.2			
21	2019	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5				8.0	19.9	319.6	339.9	-9.6			
22	2020	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	10.9	27.5				8.0	19.9	319.6	346.9	-2.6			
23	2021	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
24	2022	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
25	2023	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
26	2024	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
27	2025	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
28	2026	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
29	2027	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
30	2028	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
31	2029	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
32	2030	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
33	2031	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
34	2032	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
35	2033	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
36	2034	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
37	2035	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
38	2036	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
39	2037	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
40	2038	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
41	2039	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
42	2040	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
43	2041	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
44	2042	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
45	2043	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
46	2044	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
47	2045	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
48	2046	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
49	2047	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
50	2048	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
51	2049	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
52	2050	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
53	2051	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
54	2052	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
55	2053	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
56	2054	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
57	2055	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
58	2056	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
59	2057	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
60	2058	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
61	2059	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
62	2060	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
63	2061	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
64	2062	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	421.0	-4.5
65	2063	9.0	22.0	31.6	79.3	16.1	41.7	26.0	57.5	6.9	17.9	10.9	27.5	9.6								

Table L.2.51 Suitability Analysis of Proposed Service Charge of VND15,000/Month of Charge for Sewerage Treatment Services

Year or order	Year	Cost (OM Cost + Reservation for Replacement Cost)																(billion VND)					
		T1EC		SLTN		T1IG		T1TB		SS		SE		SN-1		SN-2		SW		Cost in total	Benefit (Revenue) in total	Cash balance	
		R cost		R cost		R cost		R cost		R cost		R cost		R cost		R cost							
(Base year)																							
1	1999																			0.0	0.0	0.0	
2	2000																			0.0	0.0	0.0	
3	2001																			0.0	0.0	0.0	
4	2002																			0.0	0.0	0.0	
5	2003																			0.0	0.0	0.0	
6	2004																			0.0	0.0	0.0	
7	2005																			0.0	0.0	0.0	
8	2006								26.0	57.5										83.5	116.4	32.9	
9	2007								26.0	57.5										33.5	116.1	32.6	
10	2008								26.0	57.5										33.5	115.8	32.3	
11	2009			31.6	79.3				26.0	57.5										194.4	220.0	25.6	
12	2010			31.6	79.3				26.0	57.5										194.4	220.2	25.8	
13	2011	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5										243.2	292.0	48.8	
14	2012	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5										283.2	293.3	10.1	
15	2013	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5										283.2	294.6	11.4	
16	2014	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5										283.2	295.9	12.7	
17	2015	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5										283.2	327.5	44.3	
18	2016	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5		10.9	27.5				8.0	19.9	349.6	337.1	7.6		
19	2017	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5		10.9	27.5				8.0	19.9	349.6	363.4	13.8		
20	2018	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5		10.9	27.5				8.0	19.9	349.6	370.2	20.6		
21	2019	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5		10.9	27.5				8.0	19.9	349.6	377.4	27.8		
22	2020	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5		10.9	27.5				8.0	19.9	349.6	385.2	35.6		
23	2021	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
24	2022	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
25	2023	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
26	2024	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
27	2025	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
28	2026	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
29	2027	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
30	2028	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
31	2029	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
32	2030	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
33	2031	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
34	2032	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
35	2033	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
36	2034	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
37	2035	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
38	2036	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
39	2037	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
40	2038	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
41	2039	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
42	2040	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
43	2041	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
44	2042	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
45	2043	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
46	2044	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
47	2045	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
48	2046	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
49	2047	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
50	2048	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
51	2049	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
52	2050	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	2.0	19.9	425.5	467.5	41.9
53	2051	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
54	2052	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
55	2053	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
56	2054	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
57	2055	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
58	2056	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
59	2057	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
60	2058	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
61	2059	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
62	2060	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
63	2061	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10.9	27.5	9.6	24.2	4.9	12.5	8.0	19.9	425.5	467.5	41.9
64	2062	9.0	22.0	31.6	79.3	16.1	41.7		26.0	57.5	6.9	17.9	10										

Table I.2.52 Repayability Analysis for Sewerage System Improvement Works in Ho Chi Minh City in Case of OECF Loan

Reference:

Supporting Capital Expenditure of the Government

Year in order	Year	Construction cost	(billion VND)					(billion VND)				Total capital expenditure of the Government (5% growth/yr)	Subsidy to HICMC in total (10%)	Amount to be spent for sewerage (15%)		
			Outflow		In flow			In flow in total	Cash balance	Revenue in case of increasing by 2.5%/yr	Payable amount of revenue					
			Foreign borrow	Total	Foreign borrow	Local finance	Total (Total revenue)									
1	1998	0.0	0.0	0.0	0.0	0	0	0.0				0.0	0.0	18,254.3	1,825.4	273.8
2	1999	0.0	0.0	0.0	0.0	0	0	0.0				0.0	0.0	19,167.0	1,916.7	287.5
3	2000	125.0	0.0	0.0	125.0	110.5	14.6	0.0				125.0	0.0	20,125.3	2,012.5	301.9
4	2001	755.4	2.0	0.0	737.4	725.1	10.3	0.0				735.4	-2.0	21,131.6	2,113.2	317.0
5	2002	735.4	15.0	0.0	750.5	725.1	10.3	0.0				735.4	-15.0	22,188.2	2,218.8	332.8
6	2003	862.0	28.1	0.0	890.1	838.0	24.0	0.0				862.0	-28.1	23,297.6	2,329.8	349.5
7	2004	1,487.2	43.2	0.0	1,530.3	1,464.8	22.4	0.0				1,487.2	-43.2	24,462.4	2,446.2	366.9
8	2005	1,600.3	69.5	0.0	1,669.8	1,567.6	32.7	0.0				1,600.3	-69.5	25,685.6	2,568.6	385.3
9	2006	1,436.5	97.8	0.0	1,534.2	1,415.0	21.5	116.4	141.8	25.4	1,461.9	-72.3	26,969.8	2,697.0	404.5	
10	2007	1,436.5	123.2	0.0	1,559.7	1,415.0	21.5	116.1	145.0	28.9	1,465.4	-91.3	28,318.3	2,831.8	424.8	
11	2008	1,436.5	148.7	0.0	1,585.2	1,415.0	21.5	115.8	148.2	32.4	1,468.9	-116.3	29,734.2	2,973.4	446.0	
12	2009	684.7	174.2	0.0	858.9	675.3	9.5	220.0	288.7	68.7	753.4	-105.5	31,221.0	3,122.1	468.3	
13	2010	855.8	186.3	156.8	1,199.0	833.1	22.7	220.2	296.1	75.9	931.8	-267.2	32,782.0	3,278.2	491.7	
14	2011	1,050.8	198.5	159.7	1,408.9	1,037.2	13.6	292.0	402.5	110.5	1,161.3	-247.6	34,421.1	3,442.1	516.3	
15	2012	1,050.8	214.3	162.5	1,427.6	1,037.2	13.6	293.3	414.4	121.1	1,171.9	-255.7	36,142.2	3,614.2	542.1	
16	2013	1,050.8	230.0	325.5	1,606.3	1,037.2	13.6	294.6	426.7	132.1	1,182.8	-423.4	37,949.3	3,794.9	569.2	
17	2014	1,050.8	242.8	331.3	1,625.0	1,037.2	13.6	295.9	439.3	143.4	1,194.1	-430.8	39,846.7	3,984.7	597.7	
18	2015	1,269.4	255.6	483.4	2,008.3	1,250.2	19.1	327.5	498.3	170.8	1,440.2	-568.1	41,839.1	4,183.9	627.6	
19	2016	1,418.2	269.4	492.1	2,179.6	1,399.9	18.3	357.1	557.0	199.9	1,618.0	-561.6	43,931.0	4,393.1	659.0	
20	2017	1,418.2	285.7	500.9	2,204.8	1,399.9	18.3	363.4	580.9	217.5	1,635.7	-569.1	46,127.6	4,612.8	691.9	
21	2018	1,418.2	301.9	509.9	2,230.0	1,399.9	18.3	370.2	606.6	236.4	1,654.6	-575.4	48,434.0	4,843.4	726.5	
22	2019	1,418.2	317.9	519.1	2,255.2	1,399.9	18.3	377.4	633.9	256.5	1,674.6	-580.5	50,855.7	5,085.6	762.8	
23	2020	1,418.2	333.7	528.8	2,504.7	1,399.9	18.3	385.2	663.1	277.9	1,696.1	-588.6	53,398.4	5,339.8	801.0	
24	2021		345.4	766.4	1,111.8			467.5	825.0	357.5	357.5	-754.3	56,068.4	5,606.8	841.0	
25	2022		331.6	780.2	1,111.8			467.5	845.6	378.1	378.1	-733.7	58,871.8	5,887.2	883.1	
26	2023		317.6	794.2	1,111.8			467.5	866.7	399.2	399.2	-712.5	61,815.4	6,181.5	927.2	
27	2024		303.3	808.5	1,111.8			467.5	888.4	420.9	420.9	-690.9	64,906.1	6,490.6	973.6	
28	2025		288.7	1,125.8	1,414.6			467.5	910.6	443.1	443.1	-971.5	68,151.4	6,815.1	1,022.3	
29	2026		268.4	1,146.1	1,414.6			467.5	933.4	465.9	465.9	-948.7	71,559.0	7,155.9	1,073.4	
30	2027		247.8	1,166.7	1,414.6			467.5	956.7	489.2	489.2	-925.4	75,137.0	7,513.7	1,127.1	
31	2028		226.8	1,187.7	1,414.6			467.5	980.6	513.1	513.1	-901.4	78,893.8	7,889.4	1,183.4	
32	2029		205.4	1,209.1	1,414.6			467.5	1,005.1	537.6	537.6	-876.9	82,838.5	8,283.9	1,242.6	
33	2030		183.7	1,006.8	1,190.5			467.5	1,030.3	562.8	562.8	-627.7	86,980.4	8,698.0	1,304.7	
34	2031		165.5	1,024.9	1,190.5			467.5	1,056.0	588.5	588.5	-601.9	91,329.5	9,132.9	1,369.9	
35	2032		147.1	1,043.4	1,190.5			467.5	1,082.4	614.9	614.9	-575.5	95,895.9	9,589.6	1,438.4	
36	2033		128.3	833.5	961.8			467.5	1,109.5	642.0	642.0	-549.9	100,690.7	10,069.1	1,510.4	
37	2034		113.3	848.5	961.8			467.5	1,137.2	669.7	669.7	-529.1	105,725.3	10,572.5	1,585.9	
38	2035		98.0	655.1	753.2			467.5	1,165.6	698.1	698.1	-508.0	111,011.5	11,101.2	1,665.2	
39	2036		86.2	666.9	753.2			467.5	1,194.8	727.3	727.3	-487.2	116,562.1	11,656.2	1,748.4	
40	2037		74.2	678.9	753.2			467.5	1,224.7	757.2	757.2	-467.2	122,390.2	12,239.0	1,835.9	
41	2038		62.0	691.1	753.2			467.5	1,255.3	787.8	787.8	-447.2	128,509.7	12,851.0	1,927.6	
42	2039		49.6	703.6	753.2			467.5	1,286.6	819.1	819.1	-427.1	134,935.2	13,493.5	2,024.0	
43	2040		36.9	395.7	432.6			467.5	1,318.8	851.3	851.3	-407.0	141,682.0	14,168.2	2,125.2	
44	2041		29.8	402.8	432.6			467.5	1,351.8	884.3	884.3	-386.9	148,766.1	14,876.6	2,231.5	
45	2042		22.5	410.1	432.6			467.5	1,385.6	918.1	918.1	-366.8	156,204.4	15,620.4	2,343.1	
46	2043		15.2	417.5	432.6			467.5	1,420.2	952.7	952.7	-346.7	164,014.6	16,401.5	2,460.2	
47	2044		7.6	425.0	432.6			467.5	1,455.7	988.2	988.2	-326.6	172,215.3	17,221.5	2,583.2	
48	2045							467.5	1,492.1	1,024.6	1,024.6	-306.5	180,826.1	18,082.6	2,712.4	
Total		23,958			23,583	376										

(Note)

- (1) Interest rate of foreign loan: 1.80%
- (2) Equal annual repayment amount of capital for foreign loan (million VND):
- | | | |
|---------------|-----------------|---------------|
| HLBC: 74,698 | HHBNDT: 224,093 | SN-1: 192,518 |
| NLTN: 228,618 | SS: 137,347 | SN-2: 102,749 |
| THLG: 133,994 | SE: 182,674 | SW: 137,862 |

(Base)

17,385
(as of 1997)