

Annex B.1 Cost and Volume of Water collected from Alternative Sources, Nonconnected Households

Source	no.	Consumption			Avg. cons. per source		Total water	Coll. time	Avg. collecting time per source			Value coll. time	Cash Expenditures		Investment	Life-time	Investment CRF		Total cost
		l/ day	day/ mo.	mo./ yr	l/ day	m ³ / mo.			hrs/ day	hrs/ day	hrs/ mo.		hrs/ m ³	VND/ m ³			VND/ mo.	VND/ mn	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Rain	35	65	12.7	4.4	10	0.3	11	0.39	0.06	-	6.0	18,000							18,000
Neighbor	93	124	24.8	11.3	95	2.9	269	0.32	0.25	7.5	2.6	7,742	30,000	10,360					18,102
Well-electric	10	918	30.0	12.0	905	27.5	275	0.58	0.57	17.4	0.6	1,895	23,000	835	1.30	15	15,906	578	3,308
Well-hand	4	500	30.0	12.0	493	15.0	60	0.83	0.82	24.9	1.7	4,980			1.00	15	12,235	816	5,796
Open well	122	527	29.0	11.8	494	15.0	1,833	0.51	0.48	14.5	1.0	2,903			0.40	15	4,894	326	3,229
Tube well	2	101	25.0	12.0	83	2.5	5	0.54	0.44	13.5	5.3	16,040			0.75	15	9,177	3,634	19,674
Tanker	2	70	30.0	6.0	35	1.1	2	0.21	0.10	3.2	3.0	9,000			0.25	15	3,059	2,913	11,913
Vendor	68	134	25.8	10.4	99	3.0	204	0.23	0.17	5.1	1.7	5,149	40,000	13,350					18,499
Shallow gr. water	10	154	28.2	12.0	143	4.3	43	1.90	1.76	53.6	12.3	37,013							37,013
Total (200 HH)	346						2,703		122.47										
Avg. per HH	1.73						13.5		0.61										

Column A: description of source

Column B: number of sources according to survey

Column C: consumption per source (liter/day) if source is used

Column D: average days in month that source is used

Column E: average month per year that source is used

Column F: average consumption per source (liter/day) = (C x D x E) / 365

Column G: average consumption per source (m³/month) = (C x D x E) / 12

Column H: total water per month per type of source

Column I: collecting time (hour/day) if water is collected from source

Column J: average collecting time (hour/day) = (I x D x E) / 365

Column K: average collecting time (hour/month) = J x 365 / 12

Column L: average collecting time (hour/m³) = G / K

Column M: value of collecting time per m³. The minimum wage rate for unskilled labor is VND 3,000 per hour. The formula is M = L x 3,000

Column N: direct cash expenditures, other than investments, per month, for water obtained from neighbors, vendors and for electricity for pumps

Column O: direct cash expenditures per m³ = N / G

Column P: investment per type of source

Column Q: lifetime of source

Column R: cost of investment per month, based on cost recovery factor with interest of 12%

Column S: investment per m³ = R / G

Column T: total cost of water per m³ without the project = S + O + M.

Annex B.2 Complete Flows of Project Water, Costs, Revenues and Benefits

Lines	72	107	106	108
	Project Water Sold	Project Financial Costs	Project Revenues	Net Cash Flow
year/unit	'000 m ³	VND mn	VND mn	VND mn
1996	0	21,083	0	-21,083
1997	532	30,495	2,179	-28,315
1998	835	12,974	3,130	-9,843
1999	1,158	6,091	4,176	-1,915
2000	1,543	2,389	5,550	3,161
2001	1,735	2,449	5,775	3,326
2002	1,937	2,512	6,537	4,025
2003	2,149	2,577	7,360	4,783
2004	2,372	2,647	8,251	5,604
2005	2,607	2,719	9,211	6,492
2006	2,607	2,719	8,722	6,004
2007	2,607	2,719	8,722	6,004
2008	2,607	2,719	8,722	6,004
2009	2,607	2,719	8,722	6,004
2010	2,607	2,719	8,722	6,004
2011	2,607	2,719	8,722	6,004
2012	2,607	2,719	8,722	6,004
2013	2,607	2,719	8,722	6,004
2014	2,607	2,719	8,722	6,004
2015	2,607	2,719	8,722	6,004
2016	2,607	2,719	8,722	6,004
2017	2,607	2,719	8,722	6,004
2018	2,607	2,719	8,722	6,004
2019	2,607	2,719	8,722	6,004
2020	2,607	2,719	8,722	6,004
2021	2,607	2,719	8,722	6,004
2022	2,607	2,719	8,722	6,004
2023	2,607	2,719	8,722	6,004
2024	2,607	2,719	8,722	6,004
2025	2,607	2,719	8,722	6,004
2026	2,607	2,719	8,722	6,004
NPV @ 7%	23,717	85,773	81,020	-4,753
VND/m ³		3,617	3,416	-200
FIRR				6.26%

lines	164	171	170	172	106
	Project Water Consumed	Project Economic Costs	Project Benefits	Net Cash Flow	Project Revenues
year/unit	'000 m ³	VND mn	VND mn	VND mn	VND mn
1996	0	21,636	0	-21,636	0
1997	603	31,026	2,481	-28,545	2,179
1998	939	13,505	4,329	-9,176	3,130
1999	1,296	6,502	6,329	-173	4,176
2000	1,720	2,872	8,757	5,885	5,550
2001	1,938	2,983	10,071	7,088	5,775
2002	2,167	3,100	11,482	8,382	6,537
2003	2,407	3,222	12,995	9,773	7,360
2004	2,660	3,350	14,616	11,266	8,251
2005	2,926	3,485	16,354	12,869	9,211
2006	2,926	3,485	16,354	12,869	8,722
2007	2,926	3,485	16,354	12,869	8,722
2008	2,926	3,485	16,354	12,869	8,722
2009	2,926	3,485	16,354	12,869	8,722
2010	2,926	3,485	16,354	12,869	8,722
2011	2,926	3,485	16,354	12,869	8,722
2012	2,926	3,485	16,354	12,869	8,722
2013	2,926	3,485	16,354	12,869	8,722
2014	2,926	3,485	16,354	12,869	8,722
2015	2,926	3,485	16,354	12,869	8,722
2016	2,926	3,485	16,354	12,869	8,722
2017	2,926	3,485	16,354	12,869	8,722
2018	2,926	3,485	16,354	12,869	8,722
2019	2,926	3,485	16,354	12,869	8,722
2020	2,926	3,485	16,354	12,869	8,722
2021	2,926	3,485	16,354	12,869	8,722
2022	2,926	3,485	16,354	12,869	8,722
2023	2,926	3,485	16,354	12,869	8,722
2024	2,926	3,485	16,354	12,869	8,722
2025	2,926	3,485	16,354	12,869	8,722
2026	2,926	3,485	16,354	12,869	8,722
NPV @ 12%	14,907	74,455	79,948	5,493	45,802
VND/m ³		4,995	5,363	368	3,073
EIRR				13.07%	

Annex B.3 Distribution Analysis and Poverty Impact Reduction

Table B.3.1 Financial benefits and costs at 12 percent discount rate												
[1996 VND mn]												
	PV											2006-
	@ 12%	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2026
Project revenues												
Revenues project water sold	42,908	0	1,519	2,434	3,442	4,678	5,364	6,108	6,912	7,782	8,722	8,722
Revenues connection fees	2,894	0	661	697	734	872	411	429	448	468	489	0
Total project revenues	45,802	0	2,179	3,130	4,176	5,550	5,775	6,537	7,360	8,251	9,211	8,722
Project costs												
Project investment												
Traded element	29,523	12,875	15,671	6,256	1,701	0	0	0	0	0	0	0
Unskilled labor	6,884	2,506	4,150	1,411	525	0	0	0	0	0	0	0
Non-traded equipment	8,755	5,702		3,199	1,565	0	0	0	0	0	0	0
Total investment	44,769	21,083	19,822	10,867	3,791	0	0	0	0	0	0	0
Operation and maintenance												
Labor		0	256	319	348	356	365	374	384	393	403	403
Electricity	4,498	0	499	608	645	645	645	645	645	645	645	645
Chemicals	3,149	0	349	425	452	452	452	452	452	452	452	452
Other O&M	4,048	0	449	547	581	581	581	581	581	581	581	581
Total O&M	14,311	0	1,553	1,899	2,026	2,034	2,043	2,052	2,062	2,071	2,081	2,081
Project raw water tax	3,224	0	142	208	275	354	405	459	516	575	638	638
Total project costs	62,304	21,083	21,516	12,974	6,091	2,389	2,449	2,512	2,577	2,647	2,719	2,719
Net cash flow	-16,502	-21,083	-19,337	-9,843	-1,915	3,161	3,326	4,025	4,783	5,604	6,492	6,004

Table B.3.2 Economic Benefits and Costs at 12 percent discount rate

[1996 VND mn]

	PV											2006-
	@ 12%	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2026
Project benefits												
Value nonincremental water	58,037	0	1,892	3,226	4,675	6,435	7,364	8,359	9,424	10,564	11,783	11,783
Value incremental water	13,268	0	297	624	982	1,421	1,654	1,906	2,178	2,472	2,788	2,788
Value of non-technical losses	8,643	0	292	479	672	902	1,054	1,217	1,392	1,581	1,783	1,783
Total project benefits	79,948	0	2,481	4,329	6,329	8,757	10,071	11,482	12,995	14,616	16,354	16,354
Project costs												
Project investment												
Traded element	32,803	14,306	17,412	6,951	1,890	0	0	0	0	0	0	0
Unskilled labor	4,475	1,629	2,698	917	341	0	0	0	0	0	0	0
Non-traded equipment	8,363	5,702	0	3,199	1,565	0	0	0	0	0	0	0
Total investment	45,640	21,636	20,110	11,068	3,796	0	0	0	0	0	0	0
Operation and maintenance												
Labor	2,524	0	247	308	335	344	352	361	370	379	389	389
Electricity	4,948	0	549	668	710	710	710	710	710	710	710	710
Chemicals	3,463	0	384	468	497	497	497	497	497	497	497	497
Other O&M	4,273	0	474	577	613	613	613	613	613	613	613	613
Total O&M	15,209	0	1,653	2,021	2,155	2,164	2,172	2,181	2,190	2,199	2,209	2,209
Opportunity cost of water	6,448	0	283	416	550	709	811	918	1,032	1,151	1,276	1,276
Total project costs	67,297	21,636	22,047	13,505	6,502	2,872	2,983	3,100	3,222	3,350	3,485	3,485
Net cash flow	12,651	-21,636	-19,566	-9,176	-173	5,885	7,088	8,382	9,773	11,266	12,869	12,869

Annex B.4 Economic Benefit-Cost Analysis

Annex B.4 page 1/8

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
1	Population and coverage											
2	Population growth	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
3	Population in service area	100,000	103,000	106,090	109,273	112,551	115,928	119,406	122,988	126,678	130,478	130,478
4	Coverage (present/target)	45	51	57	63	70	72	74	76	78	80	80
5	Population served with project	45,000	52,530	60,471	68,842	78,786	83,468	88,360	93,471	98,809	104,382	104,382
6	WITHOUT-PROJECT											
7	Existing consumers											
8	Number of connections	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
9	Person per connection	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
10	Persons served	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
11	Increase in per capita demand	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
12	Total per capita demand	100	101	101	102	102	103	103	104	104	105	105
13	Per capita piped water consumption	85	85	85	85	85	85	85	85	85	85	85
14	Per capita water consumption other source	15	16	16	17	17	18	18	19	19	20	20
15	Total piped water consumption	1,396	1,396	1,396	1,396	1,396	1,396	1,396	1,396	1,396	1,396	1,396
16	Total water consumption other source	246	255	263	271	279	288	296	305	313	322	322
17	Total water demand	1,643	1,651	1,659	1,667	1,676	1,684	1,692	1,701	1,709	1,718	1,718
18												
19	Consumers of water from other sources											
20	Number of persons	0	7,530	15,471	23,842	33,786	38,468	43,360	48,471	53,809	59,382	59,382
21	Increase in per capita demand		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
22	Per capita demand other sources	78	78	79	79	80	80	80	81	81	82	82
23	Total water demand other sources	0	215	445	689	981	1,123	1,272	1,429	1,594	1,768	1,768

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
24	WITH-PROJECT											
25	Per capita consumption											
26	Tariff increase	%	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
27	Tariff	VND/m ³	2,800	2,856	2,913	2,971	3,031	3,091	3,153	3,216	3,281	3,346
28	Price elasticity		-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35
29	Price effect on demand	%	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	0.00
30	Income elasticity		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
31	Per capita income increase	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
32	Income effect on demand	%	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	0.00
33	Total effect	%	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.00
34	Per capita piped water demand	lcd	100	101	101	102	102	103	103	104	104	105
35												
36	Existing consumers											
37	Number of connections	no	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
38	Person per connection	person	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
39	Persons served	peson	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
40	Per capita piped water demand	lcd	85	101	101	102	102	103	103	104	104	105
41	Total piped water demand	'000 m ³	1,396	1,652	1,661	1,670	1,679	1,688	1,697	1,707	1,716	1,726
42												
43	New consumers											
44	Persons to be served	person	0	7,530	15,471	23,842	33,786	38,468	43,360	48,471	53,809	59,382
45	Person per connection	person	na	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70
46	Number of connections	no	na	1,321	2,714	4,183	5,927	6,749	7,607	8,504	9,440	10,418
47	Per capita piped water demand	lcd	na	101	101	102	102	103	103	104	104	105
48	Total piped water demand	'000 m ³	na	276	571	885	1,261	1,443	1,636	1,838	2,052	2,277
49												
50	Total											
51	Total piped water demand	'000 m ³	1,396	1,928	2,232	2,554	2,939	3,131	3,333	3,545	3,768	4,003
52	Unaccounted for water	%	35.0	32.5	30.0	27.5	25.0	25.0	25.0	25.0	25.0	25.0
53	Total piped water production	'000 m ³	2,148	2,856	3,188	3,523	3,919	4,175	4,444	4,727	5,024	5,337
54	Peak factor		1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
55	Required capacity	'000 m ³	2,470	3,285	3,666	4,052	4,507	4,801	5,111	5,436	5,778	6,138
56	PROJECT WATER SUPPLY											
57	Project water sold	'000 m ³	0	532	835	1,158	1,543	1,735	1,937	2,149	2,372	2,607
58	Project water produced	'000 m ³	0	708	1,040	1,375	1,771	2,027	2,296	2,579	2,877	3,189
59	Existing supply capacity	'000 m ³	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
60	Required project supply capacity	'000 m ³	0	785	1,166	1,552	2,007	2,301	2,611	2,936	3,278	3,638

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
61	PROJECT WATER CONSUMPTION											
62	Existing consumers											
63	Nonincremental water	'000 m ³	255	263	271	279	288	296	305	313	322	322
64	Incremental water	'000 m ³	1	2	2	3	4	5	6	7	8	8
65	Project water sold	'000 m ³	255	264	274	283	292	301	311	320	329	329
66												
67	New consumers											
68	Nonincremental water	'000 m ³	215	445	689	981	1,123	1,272	1,429	1,594	1,768	1,768
69	Incremental water	'000 m ³	61	126	196	279	320	364	409	458	509	509
70	Project water sold	'000 m ³	276	571	885	1,261	1,443	1,636	1,838	2,052	2,277	2,277

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
71	Project water sold											
72	Project water sold	'000 m ³	0	532	835	1,158	1,543	1,735	1,937	2,149	2,372	2,607
73	Tariff	VND/m ³	2,800	2,856	2,913	2,971	3,031	3,091	3,153	3,216	3,281	3,346
74	Project revenues	VND mn	0	1,519	2,434	3,442	4,678	5,364	6,108	6,912	7,782	8,722
75	Connection fees											
76	Incremental connections in year	no.	0	1,321	1,393	1,469	1,745	821	858	897	936	978
77	Connection fee	VND mn	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
78	Project revenues	VND mn	0	661	697	734	872	411	429	448	468	489
79	Total project revenues	VND mn	0	2,179	3,130	4,176	5,550	5,775	6,537	7,360	8,251	9,211

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
80	Investments											
81	Source development	VND mn	7,200	7,200	3,600	0	0	0	0	0	0	0
82	Water treatment	VND mn	990	743	743	0	0	0	0	0	0	0
83	Ground storage	VND mn	72	180	108	0	0	0	0	0	0	0
84	Elevated storage	VND mn	324	810	486	0	0	0	0	0	0	0
85	Pump station	VND mn	270	338	68	0	0	0	0	0	0	0
86	Distribution system	VND mn	3,600	10,800	1,800	1,800	0	0	0	0	0	0
87	Sanitation and drainage	VND mn	945	945	630	630	0	0	0	0	0	0
88	Consulting services	VND mn	4,950	3,960	990	0	0	0	0	0	0	0
89	Investigations	VND mn	90	72	18	0	0	0	0	0	0	0
90	Institutional support	VND mn	1,080	1,620	1,620	1,080	0	0	0	0	0	0
91	Physical contingencies @ 8%	VND mn	1,562	2,133	805	281	0	0	0	0	0	0
92	Total investment	VND mn	21,083	28,800	10,867	3,791	0	0	0	0	0	0
93	Operation and maintenance											
94	Labour	VND mn	0	256	319	348	356	365	374	384	393	403
95	Electricity	VND mn	0	499	608	645	645	645	645	645	645	645
96	Chemicals	VND mn	0	349	425	452	452	452	452	452	452	452
97	Other O&M	VND mn	0	449	547	581	581	581	581	581	581	581
98	Total O&M	VND mn	0	1,553	1,899	2,026	2,034	2,043	2,052	2,062	2,071	2,081
99	Raw water tax											
100	Project water produced	'000 m ³	0	708	1,040	1,375	1,771	2,027	2,296	2,579	2,877	3,189
101	Raw water tax/m ³	VND/m ³	200	200	200	200	200	200	200	200	200	200
102	Project raw water tax	VND mn	0	142	208	275	354	405	459	516	575	638
103	Total project costs	VND mn	21,083	30,495	12,974	6,091	2,389	2,449	2,512	2,577	2,647	2,719

	unit	PV @ 7%	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026	
104	Revenues project water sold	VND mn	77,387	0	1,519	2,434	3,442	4,678	5,364	6,108	6,912	7,782	8,722	8,722
105	Revenues connection fees	VND mn	3,633	0	661	697	734	872	411	429	448	468	489	0
106	Total project revenues	VND mn	81,020	0	2,179	3,130	4,176	5,550	5,775	6,537	7,360	8,251	9,211	8,722
107	Total project costs	VND mn	85,773	21,083	30,495	12,974	6,091	2,389	2,449	2,512	2,577	2,647	2,719	2,719
108	Net cash flow	VND mn	-4,753	-21,083	-28,315	-9,843	-1,915	3,161	3,326	4,025	4,783	5,604	6,492	6,004
109														
110	FIRR		6.26%											
111	FNPV @ 7%	VND mn	-4,753											
			-4,753	-21,083	-28,315	-9,843	-1,915	3,161	3,326	4,025	4,783	5,604	6,492	6,004

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026	
112	Existing consumers												
113	Nonincremental water	'000 m ³	0	255	263	271	279	288	296	305	313	322	322
114	Economic supply price n.i. water	VND/m ³	2,705	2,759	2,814	2,871	2,928	2,987	3,046	3,107	3,169	3,233	3,233
115	Value of nonincremental water	VND mn	0	702	740	778	818	860	903	947	993	1,040	1,040
116													
117	Incremental water	'000 m ³	0	1	2	2	3	4	5	6	7	8	8
118	Demand price w/o project	VND/m ³	3,700	3,774	3,849	3,926	4,005	4,085	4,167	4,250	4,335	4,422	4,422
119	Demand price with project (tariff)	VND/m ³	2,800	2,856	2,913	2,971	3,031	3,091	3,153	3,216	3,281	3,346	3,346
120	Average demand price	'000 m ³	3,250	3,315	3,381	3,449	3,518	3,588	3,660	3,733	3,808	3,884	3,884
121	Value of incremental water	VND mn	0	3	6	9	12	15	19	22	26	30	30
122	New consumers												
123	Nonincremental water	'000 m ³	0	215	445	689	981	1,123	1,272	1,429	1,594	1,768	1,768
124	Economic supply price n.i. water	VND/m ³	5,457	5,522	5,589	5,656	5,724	5,792	5,862	5,932	6,003	6,075	6,075
125	Value of nonincremental water	VND mn	0	1,190	2,486	3,897	5,616	6,504	7,456	8,477	9,571	10,743	10,743
126													
127	Incremental water	'000 m ³	0	61	126	196	279	320	364	409	458	509	509
128	Demand price w/o project	VND/m ³	6,730	6,811	6,892	6,975	7,059	7,144	7,229	7,316	7,404	7,493	7,493
129	Demand price with project (tariff)	VND/m ³	2,800	2,856	2,913	2,971	3,031	3,091	3,153	3,216	3,281	3,346	3,346
130	Average demand price	VND/m ³	4,765	4,833	4,903	4,973	5,045	5,118	5,191	5,266	5,342	5,419	5,419
131	Value of incremental water	VND mn	0	294	618	973	1,409	1,639	1,888	2,156	2,446	2,758	2,758
132	Total value project water												
133	Value nonincremental water	VND mn	0	1,892	3,226	4,675	6,435	7,364	8,359	9,424	10,564	11,783	11,783
134	Value incremental water	VND mn	0	297	624	982	1,421	1,654	1,906	2,178	2,472	2,788	2,788
135	Total value project water (gross benefit)	VND mn	0	2,189	3,850	5,657	7,855	9,018	10,265	11,602	13,036	14,571	14,571

	unit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 2026
136	Investments											
137	Source development	VND mn	7,382	7,382	3,691	0	0	0	0	0	0	0
138	Water treatment	VND mn	987	740	740	0	0	0	0	0	0	0
139	Ground storage	VND mn	70	175	105	0	0	0	0	0	0	0
140	Elevated storage	VND mn	316	789	474	0	0	0	0	0	0	0
141	Pump station	VND mn	272	340	68	0	0	0	0	0	0	0
142	Distribution system	VND mn	3,508	10,524	1,754	1,754	0	0	0	0	0	0
143	Sanitation and drainage	VND mn	931	931	621	621	0	0	0	0	0	0
144	Consulting services	VND mn	5,335	4,268	1,067	0	0	0	0	0	0	0
145	Investigations	VND mn	93	74	19	0	0	0	0	0	0	0
146	Institutional support	VND mn	1,140	1,710	1,710	1,140	0	0	0	0	0	0
147	Physical contingencies @ 8%	VND mn	1,603	2,155	820	281	0	0	0	0	0	0
148	Total investment	VND mn	21,636	29,089	11,068	3,796	0	0	0	0	0	0
149	Operation and maintenance											
150	Labour	VND mn	0	247	308	335	344	352	361	370	379	389
151	Electricity	VND mn	0	549	668	710	710	710	710	710	710	710
152	Chemicals	VND mn	0	384	468	497	497	497	497	497	497	497
153	Other O&M	VND mn	0	474	577	613	613	613	613	613	613	613
154	Total O&M	VND mn	0	1,653	2,021	2,155	2,164	2,172	2,181	2,190	2,199	2,209
155	Opportunity cost of water											
156	Project water produced	'000 m ³	0	708	1,040	1,375	1,771	2,027	2,296	2,579	2,877	3,189
157	Opportunity cost of water	VND/m ³	400	400	400	400	400	400	400	400	400	400
158	Opportunity cost of water	VND mn	0	283	416	550	709	811	918	1,032	1,151	1,276
159	Project economic cost	VND mn	21,636	31,026	13,505	6,502	2,872	2,983	3,100	3,222	3,350	3,485

