

FINANCIAL ANALYSIS

1. The approach to the financial analysis follows guidelines described in the *Financial Management and Analysis of Projects* of the Asian Development Bank (ADB).¹ Two basic indicators for the financial viability of the potential full-cost recovery, revenue-generating subprojects, such as the sanitary landfill are the following:

- (i) The financial internal rate of return (FIRR) is the discount rate at which the net revenues generated by the project are equal to zero. A project is considered financially viable if the computed FIRR is at least equal to the computed weighted average cost of capital (WACC) of all financing incurred in order to implement the subproject.
- (ii) For tariff affordability, the minimum fee or charge should be within the affordability of the average monthly income of the low-income group.

2. The wastewater treatment plant subprojects have the potential to generate revenue and may be able to at least cover operation and maintenance (O&M) cost. For these, the analysis focused on calculating the tariffs required to enable the project owners to meet the recurrent costs of O&M of the constructed facilities. The overall financial position of each project owner was projected, reflecting the incremental recurrent costs should the subproject's revenues be insufficient.

3. For nonrevenue subprojects, such as urban roads and flood control or protection, the analysis focused on the project owners' financial capacity to meet the recurrent costs of O&M for the constructed facilities in a sustainable manner. The overall financial position of each project owner was projected, reflecting the incremental recurrent costs.

4. The provincial departments of public works and transport (PDPWTs) in the corridor towns will be the project owners and be responsible for O&M after project completion. The financial analysis focuses on the future budget positions of these entities, aiming to appraise their financial capacity for covering the recurrent expenditures.

5. The future financial conditions of the project owners are projected based on their historical revenue and expenditure statements with the following assumptions:

- (i) The projection period is 10 years: 5–6 years for project implementation and the remainder for operation.
- (ii) Budgetary revenues follow the historical trend of the past 3 years.
- (ii) Operating expenditures are projected as a proportion of the revenues based on the historical data.
- (iv) Projected recurrent expenditures including O&M of the subprojects are added in the period of project operations.
- (v) Since the government will allocate budget for project implementation, no expenditures for project implementation are included in the projections.

¹ ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

A. Financial Analysis of Revenue-Generating Subprojects

6. The basic development (investment) cost of the subprojects and O&M were prepared on an annual basis for the financial analysis. These costs are estimated in 2011 prices. Increases in costs due to inflation are covered through a provision for price contingencies for capital costs and relevant inflation factors for O&M.

7. Revenue is estimated from the garbage and wastewater fees that can possibly be collected from the beneficiaries. Estimates of annual revenues are based on the total estimated volume of solid waste or wastewater that will be disposed of and/or treated and the corresponding fee for each unit, e.g., KR per cubic meter of waste generated.

8. On the basis of the financing mix, the loan interest of 1.5%, and the assumed cost of equity of 2%, the WACC is computed to be in the range of 1.49% to 1.77%. An FIRR higher than the WACC implies that the incremental net revenues generated by the project will be enough to recover the implementation and operating costs. The summary result of financial analysis is presented Table 1.

Table 1: Results of Financial Analysis

Subproject, Scenario	WACC (%)	FIRR (%)	NPV (\$ million)
1. Battambang—Wastewater Treatment	1.56		
Base case		3.65	3.87
10% increase in capital, O&M costs		2.72	2.27
10% reduction in revenues		2.63	1.88
10% increase in costs, 10% reduction in revenues		1.71	0.28
1-year delay in revenues		3.07	2.88
2. Bavet—Wastewater Treatment	1.54		
Base case		5.28	2.07
10% increase in capital, O&M costs		3.90	1.38
10% reduction in revenues		3.76	1.18
10% increase in costs, 10% reduction in revenues		2.42	0.49
1-year delay in revenues		4.22	1.55
3. Poipet—Wastewater Treatment	1.77		
Base case		4.13	1.88
10% increase in capital, O&M costs		3.14	1.14
10% reduction in revenues		3.03	0.95
10% increase in costs, 10% reduction in revenues		2.04	0.21
1-year delay in revenues		3.36	1.28
4. Poipet—Solid Waste Management	1.49		
Base case		5.26	3.26
10% increase in capital, O&M costs		3.68	1.97
10% reduction in revenues		3.51	1.65
10% increase in costs, 10% reduction in revenues		1.91	0.36
1-year delay in revenues		3.64	1.85

FIRR = financial internal rate of return, NPV = net present value, O&M = operation and maintenance, WACC = weighted average cost of capital.

Source: Asian Development Bank estimates.

B. Financial Sustainability of Nonrevenue-Generating Subprojects

9. The projected financial positions of the project owners confirm their financial capacity to cover the recurrent costs to sustain facilities developed under the project. Moreover, given the government's support to the subprojects by assuring that it will fund the operating expenditure and periodic maintenance, an adequate budget allocation for recurrent costs of operating the project is reasonably expected.

10. **Battambang.** Reported income of the Battambang PDPWT in 2010 was KR973 million; this is projected to increase to KR1.97 billion in 2015. Expenses amounted to KR851 million in 2010 and KR1.6 billion in 2015. Net income before the subprojects is about KR122 million in 2010. Assuming that projected net income will be utilized for incremental O&M costs of the subprojects, the financial position of the PDPWT will be sufficient to cover the required O&M costs. No additional subsidy will be required from the national government.

Table 2: Battambang PDPWT Financial Cash Flow
(KR million)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income											
Fiscal Income	973	1,119	1,287	1,480	1,702	1,957	2,251	2,588	2,976	3,423	3,936
Total Income	973	1,119	1,287	1,480	1,702	1,957	2,251	2,588	2,976	3,423	3,936
Expense											
Purchases	85	101	119	140	166	195	231	272	321	379	447
External Services	147	154	162	170	179	188	197	207	217	228	239
Other external services	38	48	62	79	101	129	165	211	271	346	443
Staffing	250	300	359	431	518	621	745	894	1,073	1,288	1,545
Other expenses	331	348	365	384	403	423	444	466	490	514	540
Total Expenses	851	951	1,067	1,204	1,365	1,556	1,782	2,051	2,372	2,755	3,215
Net Income before Project	122	168	220	276	336	401	469	537	605	668	721
Impact of Project											
Repairs and Maintenance							51	53	55	57	58
Net Income after Project							418	485	550	611	663

KR = riel, PDPWT = provincial department of public works and transport.

Source: Asian Development Bank estimates.

11. **Bavet.** The Svey Rieng PDPWT reported income of KR476 million in 2010 and total expenses of KR455 million. Net income is projected to increase from KR21million in 2010 to KR152 million in 2015. However, O&M costs for the two subprojects—urban road improvement and wastewater system—would require about KR311 million starting in 2016. Since the net projected income of the PDPWT from the wastewater system will not be enough to cover the incremental expenses, additional subsidy from the national government will be needed: about KR128 million in the first year, decreasing to about KR58 million by 2020.

Table 3: Svey Rieng PDPWT Financial Cash Flow (KR million)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income											
Financial Income	476	499	524	551	578	607	637	669	703	738	775
Total Income	476	499	524	551	578	607	637	669	703	738	775
Expense											
Purchase	46	48	51	53	56	59	62	65	68	71	75
External Services	20	20	20	20	20	20	20	20	20	20	20
Other external services	21	22	23	24	25	27	28	29	31	32	34
Staffing	368	387	406	426	448	470	494	518	544	571	600
Total Expenses	455	455	455	455	455	455	455	455	455	455	455
Net Income	21	44	69	96	123	152	182	214	248	283	320
Impact of Project											
Repairs and Maintenance							311	326	343	360	378
Net Income after Project ¹							(128)	(112)	(95)	(77)	(58)

¹ Negative value indicates that there is a need for additional budgetary subsidy from the National Government.
Source: Asian Development Bank estimates.

12. **Neak Loeung.** Reported income of Prey Veng PDPWT in 2010 was KR1,049 million; this is projected to increase to KR2,378 million in 2015. Total expenses were KR932 million in 2010 and KR1,322 million in 2015. Net income before the project is about KR118 million annually. Assuming that projected net income will be sufficient and utilized for incremental O&M costs of the proposed subprojects, the financial position of the PDPWT will be sufficient to cover the required O&M costs. No additional subsidy will be required from the national government.

Table 4: Prey Veng PDPWT Financial Cash Flow (KR million)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income											
Fiscal Income	1,028	1,182	1,359	1,563	1,798	2,067	2,378	2,734	3,144	3,616	4,158
Nonfiscal Income	21	23	24	25	26	27	29	30	32	33	35
Total Income	1,049	1,205	1,383	1,588	1,824	2,095	2,406	2,764	3,176	3,649	4,193
Expense											
Purchase	112	129	148	170	195	225	258	297	342	393	452
External Services	69	79	91	105	120	138	159	183	211	242	278
Other external services	124	130	137	144	151	158	166	175	183	192	202
Staffing	627	659	691	726	762	800	841	883	927	973	1,022
Total Expenses	932	996	1,067	1,144	1,229	1,322	1,424	1,537	1,662	1,801	1,954
Net Income before Project	118	208	316	444	595	773	982	1,227	1,514	1,849	2,239
Impact of Project											
Repairs and Maintenance							458	474	490	507	525
Net Income after Project							524	753	1,024	1,341	1,714

Source: Asian Development Bank estimates.