

Name of Project: Haiphong Solid Waste Management & Treatment Project

Loan Agreement No.: VNM-005-2001

January 17, 2002

Country: Vietnam

The Export-Import Bank of Korea

(Government Agency for EDCF)

EDCF Operations Evaluation Team

(Evaluated by Hallym University and ESDI)

- Contents -

EXECUTIVE SUMMARY

I. INTRODUCTION

1. Basic Data
2. Map(s) Related
3. Evaluation in Brief and Process
4. Expected Results

II. PROJECT DESIGN AND IMPLEMENTATION

1. Project Formulation
2. Rationale
3. Cost, Financing and Executing Process
4. Consultants
5. Procurement and Construction
6. Outputs
7. Loan Covenants
8. Others

III. ASSESSMENT FOR EACH EVALUATION CRITERION

1. Overall Assessment
2. Relevance
3. Efficiency
4. Effectiveness
5. Sustainability
6. Other Assessment

IV. LESSONS LEARNED AND RECOMMENDATIONS

1. Lessons Learned
2. Recommendations

Appendix

EXECUTIVE SUMMARY

I. INTRODUCTION

1. Overview of Loan

Project No.	VNM-005-2001
Approval Date	August 21, 2001
Borrower	Vietnam Ministry of Finance
Project Executing Agency	Haiphong Urban Environment Company (HP URENCO)
Loan Limit	USD 19.6 million (Total Project Expense: USD 24.8 million)
Loan Terms	Interest rate of 2.0% per annum and 30-year repayment period (including a 10-year grace period)
Loan Type	Development Project Loan

2. Project Expenses

Unit: USD 1 thousand

Fund Type	Expected (A)	Actual (B)	Difference (A-B)
Total project expense	24,786	21,820	▽▽3,058
EDCF fund support	19,616	16,649	▽▽2,967
Budget of the Vietnamese government	5,170	5,171	△1

II. PROJECT DESIGN AND IMPLEMENTATION

1. Project organization

This project aimed at urban sanitation improvement and environmental pollution reduction through the recycling and landfilling of domestic and industrial waste in Haiphong city, i.e. one of the 5 cities under the direct control of Vietnam's central government.

The project site is located in the Trang Cat region (60ha) 10 km away to southeast from downtown Haiphong in the northeastern part of Vietnam.

The project scope included (i) waste collecting/transporting system improvement, (ii) organic waste treatment facility (i.e. composting facility) establishment, (iii) new waste landfill development, (iv) land compensation and residents' migration, (v) relevant subsidiary

facility formation, (vi) education and training, and (vii) design and engineering.

The borrower was the Finance Ministry of Vietnam, the executing agency was the Urban Environment Company (URENCO) of Haiphong, and the supervisory organization was the People's Committee of Haiphong city (PMU).

2. Reason for application

The reasons for application of the project are (i) consistency with the environmental sector support strategy of the Economic Development Cooperation Fund (EDCF), (ii) rising necessity of sanitation improvement and environmental pollution reduction, and (iii) consistency with Vietnam's environmental policies.

3. Necessary expense, procurement and execution

To meet the total project expense of USD 24,786 thousand, the fundraising plan during appraisal and evaluation was borrowing USD 19,616 thousand from EDCF and receiving USD 5,170 thousand from the Vietnamese government.

The disbursement was USD 21,820 thousand, including USD 16,649 thousand of EDCF loans and USD 5,171 thousand of the Vietnamese government's support.

4. Consultants

The Haiphong solid waste disposal project was proceeded with in a turn-key manner on the supplier's side to deal with the entire procedures, from design, construction supervision, facility installation, training to technology transfer, without hiring consultants.

5. Procurement and construction

At the initial stage of the purchase contract, the consortium consisted of Daewoo International (purchase), Daewoo Construction (construction) and Taesung Plant (design). However, Taesung Plant went bankrupt and then its participants were changed to Daewoo International (purchase) and Daewoo Construction (construction and design).

The purchase contract was subject to limited competitive tender among Korean firms or direct contracting. The eligible countries for purchase were limited to South Korea and Vietnam.

The purchase contract execution period was set for 18 months from the effective date of the loan contract.

At the time of appraisal, the project implementation period was expected to be 36 months for design, purchase of necessary equipment, civil engineering and construction, pilot operation, etc. by comparing the construction schedule with the then construction plan. However, it was actually extended to 82 months for many reasons of delay.

6. Outputs

The project was completed on March 31, 2009. The sanitary landfill site, the organic waste treatment facility and the leachate processing facility were installed completely.

Item	Expected (A)	Actual (B)	Difference (A-B)
Organic waste treatment facility	200 ton/day	200 ton/day	-
Landfill facility	3.00ha	3.56ha	Δ0.56ha
Collection and transportation vehicle	36 vehicles	51 vehicles	Δ15 vehicles

III. ASSESSMENT FOR EACH EVALUATION CRITERION

With the same weight of 4 evaluation criteria, the project evaluation results indicated “successful” (3.25/4.00) performance.

Criteria	Weight	Evaluation item	Evaluation	Score
Relevance	25%	<ul style="list-style-type: none"> - Consistency with Vietnam’s environmental policy and waste disposal policy - Consistency with EDCF’s support strategy - Appropriateness of the project plan - Active participation of the recipient government, such as additional financing and civil complaint resolution in the project implementation procedures 	Very relevant	4
Efficiency	25%	<ul style="list-style-type: none"> - Efficiency in the project implementation period - Efficiency in the project disbursement 	Partially efficient	2
Effectiveness	25%	<ul style="list-style-type: none"> - Output achievement status - Short-term goal achievement status - Mid- to long-term goal achievement status 	Very effective	4
Sustainability	25%	<ul style="list-style-type: none"> - Institutional sustainability - Technological and personnel sustainability - Financial sustainability - Capability to respond to environmental problems 	Sustainable	3
Overall assessment			Successful	3.25

I. INTRODUCTION

1. Basic Data

Loan Information

Loan Agreement No.	Loan Type	Approved Amount	Approval Date
VNM-005-2001	Development project loan	USD 19.6 million	August 21, 2001

Project Cost

Component	Expected	Actual	Difference
Total Cost	USD 24,786,000	USD 21,820,000	USD 3,058,000
EDCF Loan	USD 19,616,000	USD 16,649,000	USD 2,967,000

Key Dates

Item	Plan	Result
Appraisal Visit	May 2001	May 13 through 20, 2001
Decision of Support Policy	-	Aug. 21, 2001
Signing of Loan Agreement	Jan. 2002	Jan. 17, 2002
Effective Date of Loan Agreement (A)	Mar. 2002	Mar. 26, 2002
First Disbursement	Mar. 2003	Oct. 29, 2003
Project Completion (B)	Mar. 2005	Jan. 25, 2009
Last Disbursement	Sep. 2005	Mar. 31, 2009
Project Period (A through B)	36 months	82 months

Borrower: Vietnamese Ministry of Finance

Executing Agency: Vietnam Haiphong Urban Environment Company

Mission Data

Type of Mission	Visit Schedule	Remarks
Audit	May 13 through 20, 2001	Review of Project Feasibility
Project Completion	Jan. 28, 2010	Submission of Completion Report
Ex-post Management	Jan. 10 through 12, 2011	On-site Visit and Inspection by Independent Technical Experts

1st Ex-post Evaluation	Jun 24 through 30, 2018	On-site Visit (project status and operating status checks)
2nd Ex-post Evaluation	Oct 15 through 17, 2018	On-site Visit (sharing of evaluation results and discussion over the future development plan)

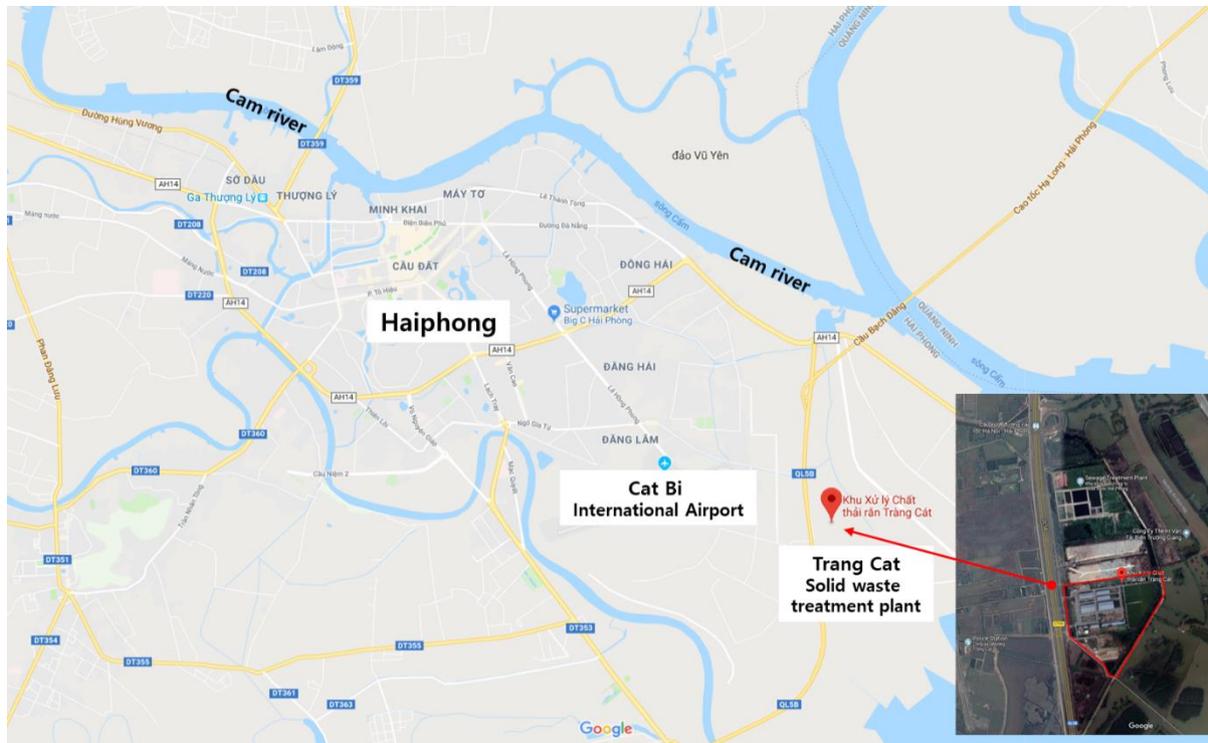
2. Map(s) Related

- Map of the country



Source: <https://blog.naver.com/plusbudongsan/221384164208>

- Map of the project site



Source: Google Maps

3. Evaluation in Brief and Process

3.1 Evaluation purpose

Ex-post evaluation was implemented to look into the appropriateness, efficiency, effectiveness and sustainability of the Haiphong solid waste disposal project and to analyze project feasibility, goal achievement status and success/failure factors. Based on these processes, specific and highly practical lessons and recommendations were identified.

3.2 Ex-post evaluation team

Title	Organization	Name	Detailed Duties
Leader	Hallym University	Dr. Seung Do Kim	<ul style="list-style-type: none"> Project Manager Make final decision and determination of reports and evaluation results

Specialist	ESDI	Mr. Sug Kyom Kim	· Generally manage Ex-post Evaluation
Assistant	Hallym University	Mr. Ji Jae Lim	· Analyze information and set up the detailed evaluation plan. · Plan and implement on-site investigation
Assistant	ESDI	Ms. Jung Min Shim	· Analyze information and set up the detailed evaluation plan. · Plan and implement on-site investigation
Assistant	ESDI	Ms. Jae Jin Lee	· Analyze information and set up the detailed evaluation plan. · Plan and implement on-site investigation
Local consultant	-	Ms. Truong Thanh Huyen	· Make communication channels · Support on-site investigation (e.g. interpretation and schedule coordination)

3.3 Evaluation process

Item	Schedule	Activity
Advance information survey	Apr. through Jun., 2018	Related literature survey and analysis
Notification of ex-post evaluation plan and schedule	Jun.1, 2018	Notification of ex-post evaluation plan and schedule of a visit to Vietnam's Ministry of Finance and Haiphong URENCO
Sending of an evaluation questionnaire	Jun. 12 through 19, 2018	Sending of an evaluation questionnaire to the Government and project implementation organizations.
1st on-site investigation	Jun. 24 through 30, 2018	On-site visit of and interview with related organizations - Visit and interview Vietnam's Ministry of Finance and KEXIM Hanoi office - Interview Haiphong URENCO (i.e. project implementation organization) and visit on-site

		facilities. - Visit and interview the Vietnamese Ministry of Construction
Interim report preparation	Jun. through Jul., 2018	Review and analysis based on literature survey, interview with relevant persons, and 1st on-site investigation results
2nd on-site investigation	Oct. 15 through 17, 2018	Joint evaluation workshop and collection of supplementary data.
Submission of final report	Nov. 2018	Finalizing of evaluation results and submission of the final report with correction.

4. Expected Results

Item	Targets & Indicators	Source	Assumptions & Risks
<p><u>Impact</u> <u>(Mid- to long-term results)</u></p> <ul style="list-style-type: none"> • Construction of landfill and recycling facility for urban sanitation improvement and environmental pollution prevention 	<ul style="list-style-type: none"> • Regional environmental improvement for residents' satisfaction - Residents' satisfaction level achieved at 80% • Neighboring water quality preservation - Cấm river water quality standard: Satisfaction (COD 35 mg/L) 	Vietnam's Ministry of Natural Resources and Environment, General Statistics Office, and HP URENCO, and resident satisfaction survey	<ul style="list-style-type: none"> • Assumptions - Reinforcement of governmental waste disposal facility management/supervision • Risks - Improper facility management to cause environmental pollution
<p><u>Outcome</u> <u>(Short-term results)</u></p> <ul style="list-style-type: none"> • Solid waste collection ratio improvement and compost production 	<ul style="list-style-type: none"> • Waste collection ratio enhancement in the project area - ('00) 80% → ('10) 90% • Compost production increase - ('00) 0 ton/day → ('10) 20 to 40 ton/day 	Vietnam's Ministry of Natural Resources and Environment, General Statistics Office, and HP URENCO	<ul style="list-style-type: none"> • Assumptions - Enhanced civic awareness to stabilize waste disposal system - Securing of personnel and technology for environmental facility operation

<p>increase</p> <ul style="list-style-type: none"> • Optimal leachate treatment to prevent water pollution 	<ul style="list-style-type: none"> • Leachate control improvement - Effluent quantity standard satisfaction: BOD 20 mg/L and SS 30 mg/L 		<ul style="list-style-type: none"> - Waste separation • Risks - Improper operation of leachate treatment facility - Reduction in financial support for facility and equipment operation
<p>Outputs</p> <ul style="list-style-type: none"> • Construction of sanitary landfill and organic waste treatment facility • Waste transporting vehicle and landfill equipment supply 	<ul style="list-style-type: none"> • Construction of sanitary landfill site and organic waste treatment facility in Haiphong - Sanitary landfill site: 3ha - Landfill capacity: 3,810,151m³ - Organic waste treatment facility: <ul style="list-style-type: none"> 1) Area: 6ha; and 2) Capacity: 200 ton/day • Supply of waste collection, transportation, and landfill equipment - 36 vehicles (26 waste collection compression vehicles and 8 sludge suction tanks) 	<p>Project completion report</p>	<ul style="list-style-type: none"> • Assumptions - Proper construction and purchase management • Risks - Concerns over unit price rise due to delayed consulting/purchase contracts and rising exchange rate

Activities with Milestones

- Taking effect of L/A: within 3 months from L/A conclusion
- Construction completion: within 36 months from purchase contract conclusion

Inputs

- Total project expense: USD 24,786 thousand
- EDCF: USD 19,616 thousand
- Vietnamese government: USD 5,170 thousand

II. PROJECT DESIGN AND IMPLEMENTATION

1. Project Formulation

1.1 Project purpose

The project aimed at urban sanitation improvement and environmental pollution reduction by recycling and landfilling domestic/industrial waste in Haiphong city, one of the 5 cities under the direct control of the central government.

The project completion contributed to (i) improving the waste collection system by supporting collection vehicles,(ii) enhancing the urban sanitation of Haiphong city with the construction and operation of waste disposal facilities (i.e. landfill and composting facility), and (iii) achieving water resource protection with the operation of a leachate treatment facility.

1.2 Project area

The project area is located in the Trang Cat region (60ha) 10 km away to southeast from downtown Haiphong in the northeastern part of Vietnam.

1.3 Project scope

- Waste collection/transportation system improvement
 - 26 waste collection compressing vehicles and 8 sludge collecting vacuum tankers
 - Waste containers, street trash cans, etc.

- Organic waste treatment facility building
 - Treatment capacity: 200 ton of solid waste per day and 40 ton of sludge
 - Area: 6ha

- New waste landfill development
 - 1st stage development area: 3ha (total area: 40ha)

- Land compensation, residents' migration and relevant subsidiary facility formation
 - Land purchase, residents' migration and compensation
 - Infrastructure/subsidiary facility formation in the site
 - Access road construction
 - Wire installation for utility services, such as electricity and water supply

- Education and training, design, engineering, etc.

1.4 Project implementation system

The borrower of the project was the Vietnamese Finance Ministry. The project executing agency was initially the Sewerage and Drainage Company (SADCO) of Haiphong but

changed to the Urban Environment Company (URENCO). The supervisory organization was the People's Committee of Haiphong city (PMU).

Type	Organization
Borrower	Ministry of Finance
Executing agency	Haiphong Urban Environment Company (URENCO)
Project supervisory organization	People's Committee of Haiphong city

2. Rationale

- Consistency with EDCF's environmental support strategy

It seemed that EDCF's support strategy focused on environmental improvement in 2001 when the loan appraisal was done, and this project falls under the then strategic support area.

- Growing necessity of optimal waste disposal

Due to the influence of industrialization, the city of Haiphong achieved rapid growth from 2000 and faced a waste disposal problem amid urbanization and industrialization.

- Consistency with Vietnam's environmental policy

When the loan appraisal was implemented in 2001, the Vietnamese government placed top priority on urban sanitation improvement and environmental pollution prevention and focused on the construction and supply of sanitary landfill facilities to manage solid waste in an environmentally friendly manner.

3. Cost, Financing and Executing Process

3.1 Initial financing plan

During the appraisal and evaluation, the financing plan was to secure the total project cost of USD 24,786 thousand, i.e. EDCF loan of USD 19,616 thousand and the Vietnamese government's support of USD 5,170 thousand.

Unit: USD 1 thousand

Item	Foreign currency	Local currency	Sum
EDCF	13,779	5,837	19,616 ¹⁾
Vietnamese Government	-	5,170	5,170

Total	13,779	11,007	24,786
-------	--------	--------	--------

1) Loan commission is included.

* Applicable exchange rate: USD 1 = VND 14,500.-

The disbursement was USD 16,649 thousand of EDCF loan and USD 5,171 thousand of the Vietnamese government's support, i.e. a total of USD 21,820 thousand.

3.2 Reason for change

As the project implementation period changed because of design change, the applicable exchange rate of the initial purchase contract (~~₩~~1,192.87/\$) changed to ~~₩~~920.87/\$ in the amended purchase contract, causing loan limit redistribution.

USD 2,661,000 was disbursed as the increased construction and equipment purchase costs in the amended contract through approval for exclusive use of reserved fund.

4. Consultants

The project was proceeded with in a turn-key manner on the supplier's side to deal with the entire procedures, from design, construction supervision, facility installation, training to technology transfer, without hiring a consultant.

5. Procurement and Construction

During the initial stage of purchase contract, the consortium consisted of Daewoo International (purchase), Daewoo Construction (construction), and Taesung Plant (design). However, Taesung Plan went bankrupt and then its participants were changed to Daewoo International (purchase) and Daewoo Construction (construction and design).

The purchase contract was subject to limited competitive tender among Korean firms or direct contracting. The eligible countries for purchase were limited to South Korea and Vietnam.

The purchase contract execution period was set for 18 months from the effective date of the loan contract.

At the time of appraisal, the project implementation period was expected to be 36 months for design, purchase of necessary equipment, civil engineering and construction, pilot operation, etc. by comparing the construction schedule with the then construction plan. However, it was actually extended to 82 months for many reasons of delay.

□ Reasons of delay: (i) Objection of residents in the project area (Oct. 2004 through Jul. 2005), (ii) Bankruptcy of the constructor (May 2006 through Dec. 2006), (iii) Detailed design changed under the amended contract, and (iv) Priority (Top priority: Hanoi-Haiphong expressway construction project)

6. Outputs

The project was completed on March 31, 2009. The construction of sanitary landfill, organic waste treatment facility, and leachate disposal facility was completed.

Item	Expected (A)	Actual (B)	Difference (A-B)
Organic waste treatment facility	200 ton/day	200 ton/day	-
Landfill facility	3.00ha	3.56ha	Δ0.56ha
Collection and transportation equipment	36 vehicles	51 vehicles	Δ15 vehicles

7. Loan Covenants

7.1 Conclusion and effective date

- Execution date of loan contract: January 17, 2002
- Effective date of loan contract: March 26, 2002

7.2 Disbursements

- First disbursement date: October 29, 2003 (8 months delayed from the planned March 2003)
- Final disbursement date: March 31, 2009 (43 months delayed from the planned September 2005)
- Loan disbursement method: Letter of Credit or direct payment

7.3 Loan terms

Interest rate of 2.0% per annum and a total of 30-year principal repayment period including a 10-year grace period

Principal repayment was made in level payment amortization on a semi-annual basis following the grace period. Liquidated damages for delay were calculated at the agreed rate plus 2% and loan commission was at the rate of 0.1% of loan disbursement or L/Comm value.

III. ASSESSMENT FOR EACH EVALUATION CRITERION

1. Overall Assessment

The project was evaluated in terms of its “appropriateness, efficiency, effectiveness and sustainability” in accordance with the general evaluation methods and evaluation criteria set forth in the “Guidelines for Ex-post Evaluation Report on EDCF Projects.”

By setting the weight of the above-listed 4 evaluation criteria as identical, the project evaluation results indicated “successful (3.25/4.00)” performance.

Criteria	Weight	Evaluation item	Evaluation	Score
Relevance	25%	<ul style="list-style-type: none"> - Consistency with Vietnam’s environmental policy and waste disposal policy - Consistency with EDCF’s support strategy - Appropriateness of the project plan-Active participation of the recipient government, such as additional financing and civil complaint resolution in the project implementation procedures 	Very relevant	4
Efficiency	25%	<ul style="list-style-type: none"> - Efficiency in the project implementation period - Efficiency in the project disbursement 	Partially efficient	2
Effectiveness	25%	<ul style="list-style-type: none"> - Output achievement status - Short-term goal achievement status - Mid- to long-term goal achievement status 	Very effective	4
Sustainability	25%	<ul style="list-style-type: none"> - Institutional sustainability - Technological and personnel sustainability - Financial sustainability - Capability to respond to environmental problems 	Sustainable	3
Overall assessment			Successful	3.25

Evaluation method

Evaluation criteria: appropriateness, efficiency, effectiveness and sustainability

- Weight: 25% equally

2. Relevance

At the time of appraisal, Vietnam was undergoing rapid industrialization and urbanization and had no systematic waste control system. As such, the country prioritized policies on landfill construction and recycling facility establishment. Against this backdrop, the project was consistent with Vietnam’s environmental and waste disposal policies (4 points).

In terms of EDCF support status, as the country was expanding social infrastructure (i.e. education, health and environment) in the 2000s, the project was consistent with the then EDCF support strategies. (4 points)

The project plan made predictions based on logical feasibility and improved the treatment process under the amended contract in order to establish the project plan aligned with the purposes of the project (4 points).

The degree of the Vietnamese government’s participation was evaluated for the problems that arose in the project implementation process. Whereas some factors that caused project delay were created due to the delay of the amended contract, the Vietnamese government’s portion of the project cost increased. It is determined that the Vietnamese government “partially actively participated” in the project progress (2 points).

The general evaluation results of relevance indicated “very relevant (4 points).”

Criteria	Weight	Evaluation item	Score
Relevance	25%	• Consistency with Vietnam’s environmental policy and waste disposal policy	4.0
		• Consistency with EDCF’s support strategy	4.0
		• Relevance of the project plan	4.0
		• Active participation of the recipient government, such as additional financing and civil complaint resolution in the project implementation procedures	2.0
		Total score	4.0

3. Efficiency

The efficiency during the project implementation period was assessed based on “whether outputs were achieved within the planned period.” The method for calculating the efficiency is as follows:

$$\square \text{ Efficiency of Project Period (\%)} = (\text{Actual Project Period} / \text{Planned Project Period}) \times 100$$

□ Evaluation criteria

Type	Score
100% or below	Very good (4 points)

Over 100% to 120%	Good (3 points)
Over 120% to 150%	Average (2 points)
Over 150% to 200%	Poor (1 point)
Over 200%	Very poor (0 point)

With respect to efficiency in terms of the project period, the planned period was 36 months, but the actual period was 82 months with a delay of 46 months. The efficiency was found to be 227.8%, indicating “very poor (0 point).”

Efficiency in project costs was calculated in the same method of measuring efficiency for project period. The planned budget was USD 19,616 thousand, but the disbursement thereof was USD 16,649 thousand, down by USD 2,967 thousand. Project cost efficiency was 84.9%, indicating “very good (4 points).”

The general evaluation results of efficiency indicated “**partially efficient (2 points).**”

Criteria	Weight	Evaluation item	Score
Efficiency	25%	• Efficiency in the project implementation period	0
		• Efficiency in the project disbursement	4
		Total score	2

4. Effectiveness

The project achieved the planned outputs as follows (4 points):

□ Plan: 1) Sanitary landfill site (3ha) and landfill capacity (3,810,151m³), 2) Organic waste treatment facility site (6ha) and processing capacity (200 ton/day), and 3) collection and transportation vehicles (36 vehicles)

□ Actual: 1) Sanitary landfill site (3.56ha) and landfill capacity (over 3,810,151m³), 2) Organic waste treatment facility site (10.54ha) and processing capacity (200 ton/day), and 3) collection and transportation vehicles (51 vehicles)

As for short-term goals, achievement status is as follows (3 points):

Type	Plan	Actual	Achievement status
Waste collection rate enhancement	('00) 80% → ('10) 90%	('00) 80% → ('18) 100%	Achieved
Compost production increase	('00) 0 ton/day → ('10) 20 to 40 ton/day	('00) 0 ton/day → ('10) 2.34 ton/day	Partially achieved
Leachate quantity standard satisfaction	Achieved BOD 20 mg/L, SS 30 mg/L	Achieved the maximum permissible concentration	Achieved

		under the QCVN 25-09/BTNMT technical regulations	
--	--	--	--

Leachate control status

Item	Unit	Influent	Effluent	Maximum permissible concentration (B2)
pH	-	8-9	7-8	5.5-9
COD	mg/L	1,730-1,950.5	95	300
BOD	mg/L	778.5-916.7	42	50
T-N	mg/L	1,962.0-2,312.0	36.3	60
T-P	mg/L	9.3-11.5	1.26	6

Mid- to long-term achievements are as follows (4 points):

Plan: 1) Beneficiary satisfaction: over 80 %, and 2) Environment pollution prevention: satisfaction of the water quality standards of the neighboring water system (i.e. Cam river) - COD 35 mg/L or below

Actual: 1) Beneficiary satisfaction: 100 % and 2) Environment pollution prevention: satisfaction of the water quality standards of the neighboring water system (i.e. Cam river) - COD 30 mg/L or below (present standard)

The general evaluation results of effectiveness indicated **“very effective (4 points)”**

Criteria	Weight	Evaluation item	Score
Effectiveness	25%	• Output achievement status	4
		• Short-term goal achievement status	3
		• Mid- to long-term goal achievement status	4
		Total score	4

5. Sustainability

Institutional sustainability: 4 points

Whether the solid waste disposal facility and service operation would be institutionally supported on a sustainable basis was evaluated based on the existence of national institutional guarantee as well as the internal system established by the project executing agency.

In accordance with the Prime Minister’s decision (No. 491/QĐ-TTg) announced on May 7, 2018, the project coincided well with Vietnam’s waste policies to be pursued in the future. Against this background, institutional support sustainability is deemed to have been well equipped. The executing agency, Haiphong URENCO, consisted of technological and business units under the board of directors and had its own independent management structure.

Technological and personnel sustainability: 4 points

Haiphong URENCO, a specialized environmental management agency with its know-how and infrastructure as to environmental management, has secured technological sustainability.

Financial sustainability: 0 point

Haiphong URENCO receives 60% of its collection costs from the People's Committee of Haiphong city and has the problem of self-financing the remaining collection costs and operating costs for itself.

Capability against environmental problem: 3 points

Haiphong URENCO is a specialized environmental management agency with a sufficient number of technological personnel. The agency seemed to have the capability to respond to environmental problems. However, as for the existing landfills being operated without daily soil covering, any waste exposed on the surface could be blown away by wind or had the risk of slope failure. There was also the potential problem of occurrence of harmful insects or rats.

The general evaluation results of sustainability indicated “**sustainable (3 points).**”

Criteria	Weight	Evaluation item	Score
Sustainability	25%	• Institutional sustainability	4
		• Technological and personnel sustainability	4
		• Financial sustainability	0
		• Capability to respond to environmental problems	3
		Total score	3

6. Other Assessment

Cross-cutting issues were evaluated based on the consideration level of gender and vulnerable social groups and on the project management system, but they were not reflected in the evaluation scores.

6.1 Consideration of gender and vulnerable social groups

There was no gender discriminatory element in the operational personnel employment

process. However, due to the toughness of operational personnel's work, some duties would be difficult for female workers. Also, this was not preferred by many in general, leading to the difficulty of employing operational personnel.

The staff who have worked for 10 years continued to work or their sons and daughters were employed. This is not a discriminatory element for employment.

The project did not take into particular consideration vulnerable social groups.

6.2 Consideration of environmental disincentives

The treatment facility reduced environmental disincentives, presenting no great environmental disincentive.

The project reduced the environmental disincentives by securing the odor treatment facility, the leachate treatment facility, and the wastewater disposal system.

IV. LESSONS LEARNED AND RECOMMENDATIONS

1. Lessons Learned

1.1 Importance of implementing environmental impact evaluation

The project is to build an environmental disposal facility that could be considered one of the NIMBY facilities. However, given the situation of Vietnam with a shortage of waste disposal facilities, the project is viewed as environmentally positive facilities to alleviate environmental pollution. For this reason, no environmental impact evaluation was implemented in this project.

However, as no environmental impact evaluation was conducted, the project fails to make quantitative and qualitative assessment as to the environmental impact to be caused by the project implementation in advance. The project was pursued without the consent of the local community, such as the procedure of giving explanations to residents, and consequently residents staged a protest and this delayed the project.

1.2 Inadequate financial sustainability

This project has a negative impact on ensuring financial sustainability because the compost sales revenue set out in the appraisal report has not yet occurred.

The Haiphong solid waste disposal project is operated by a public corporation, not the local government, after the change of the executing agency. Only 60% of the collection cost is supported by the local government (i.e. People's Committee of Haiphong city), and the remaining collection cost and the operating cost are borne by Haiphong URENCO. And the raised waste fee of the residents (VND 30,000 → VND 40,000) partly covers costs.

As mentioned above, unlike the plan set at the appraisal stage, in case of financial distress, securing the sustainability of the project will be difficult.

2. Recommendations

2.1 Reinforce project appraisal based on project management systems

The inadequate points of the project are as follows: (i) non-preparation of performance indicators; (ii) non-employment of consultants and (iii) non-performance of environmental impact assessment. Based on these inadequate points, it is necessary to enhance the effectiveness of new projects through a strengthened project appraisal in the future.

2.2 Utilization of environmental impact assessment

Currently, EDCF is able to predict and minimize operational problems related to the implementation of the project during construction and after completion as the environmental impact assessment system is utilized widely.

Examples of environmental impact expected from the implementation of the project are as follows:

- During construction: (1) blowing dust; (2) noise generation; and (3) muddy ground water in case of rain

- After completion: (1) noise and dust generation from the collection and landfill equipment; and (2) secondary pollution such as leachate leakage, scattering of loaded waste and odor generation due to improper facility operation

Therefore, EDCF needs to hear comments from villagers by conducting an environmental impact assessment for the smooth progress and stable operation of the project after completion and to reduce the adverse effects by minimizing the impact of the project.