SUMMARY INITIAL ENVIRONMENTAL EXAMINATION

HO CHI MINH CITY ENVIRONMENTAL IMPROVEMENT PROJECT

(Loan 1702-VIE[SF])

IN THE

SOCIALIST REPUBLIC OF VIET NAM

November 2003

CURRENCY EQUIVALENTS

(as of 31 October 2003)

Currency Unit	–	dong (D)
D1.00	=	$0.00006
$1.00	=	D15,615.00

ABBREVIATIONS

ADB	–	Asian Development Bank
dB	–	decibel
EIA	–	environmental impact assessment
EMP	–	environmental management plan
IEE	–	initial environmental examination
HCMC	–	Ho Chi Minh City
HDPE	–	high density polyethylene
m	–	meter
m^3	–	cubic meter
mm		millimeter
PMU	–	project management unit
SIEE	–	summary initial environmental examination
TCVN	–	Viet Nam standard

NOTE

In this report, "$" refers to US dollars.

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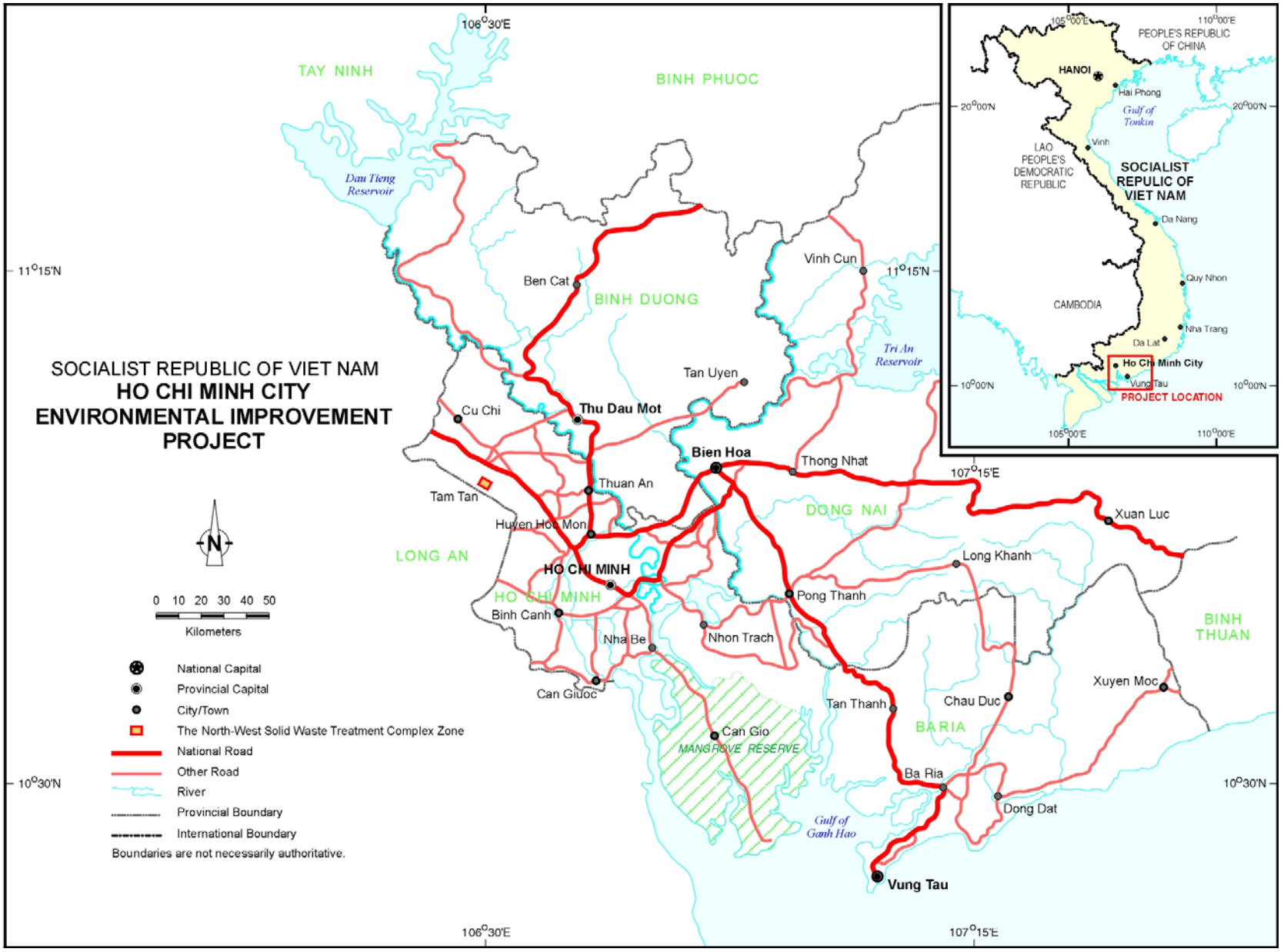
SOCIALIST REPUBLIC OF VIET NAM
HO CHI MINH CITY
ENVIRONMENTAL IMPROVEMENT
PROJECT
106°30'E
11°15'N
10°30'N
107°15'E
TAY NINH
BINH PHUOC
BINH DUONG
DONG NAI
LONG AN
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BA RIA
BINH THUAN
Dau Tieng Reservoir
Tri An Reservoir
Gulf of Tonkin
Gulf of Ganh Hao
MANGROVE RESERVE
Ben Cat
Vinh Cun
Tan Uyen
Cu Chi
Thu Dau Mot
Bien Hoa
Thong Nhat
Thuan An
Tam Tan
Huyen Hoc Mon
HO CHI MINH
Binh Canh
Nha Be
Nhon Trach
Can Giuoc
Can Gio
Long Khanh
Pong Thanh
Xuan Luc
Tan Thanh
Chau Duc
Xuyen Moc
Ba Ria
Dong Dat
Vung Tau
0 10 20 30 40 50
Kilometers
National Capital
Provincial Capital
City/Town
The North-West Solid Waste Treatment Complex Zone
National Road
Other Road
River
Provincial Boundary
International Boundary
Boundaries are not necessarily authoritative.
105°00'E
110°00'E
20°00'N
10°00'N
PEOPLE'S REPUBLIC OF CHINA
HANOI
Hai Phong
Vinh
LAO PEOPLE'S DEMOCRATIC REPUBLIC
SOCIALIST REPULIC OF VIET NAM
Da Nang
Quy Nhon
CAMBODIA
Nha Trang
Da Lat
Ho Chi Minh City
Vung Tau
PROJECT LOCATION
03-4176 HR

I. INTRODUCTION

1. The Ho Chi Minh City (HCMC) Environmental Improvement Project was approved by the Asian Development Bank (ADB) in October 1999 and is being implemented for an estimated completion in December 2007. The Project consists of three major components: urban drainage and sewerage, solid waste management, and industrial pollution control and air quality monitoring. The Project was classified in category B according to ADB's environment policy. It was judged to have some potentially adverse environmental impact, but which may not be significant enough to warrant a full environmental impact assessment (EIA). After the initial environmental examination (IEE), authorities concluded that the IEE adequately identified the potential impact of each project component and recommended suitable mitigating measures to keep the impacts to an acceptable level.

2. In June 2002, HCMC decided to develop a new final disposal site in Cu Chi district under the solid waste management component, instead of expanding the existing Dong Thanh disposal site originally approved by the Government, and requested ADB to approve this change. Based on ADB's new environment policy issued in November 2002, the proposed development of a new final disposal site was classified as a category B project that is deemed environmentally sensitive. Accordingly, an IEE for the new landfill site was prepared. This summary IEE (SIEE) is based on the IEE prepared by HCMC in accordance with ADB's environment policy, its requirements and the guidelines. The objectives of the SIEE are to (i) provide information on general environmental setting of the project area–physical and ecological resources, economic development, social and cultural resources; (ii) provide information on potential impacts of the project and the characteristic of the impacts, their magnitude, distribution of the groups that will be affected, and duration; (iii) provide information on required mitigating measures including costs to minimize the potential environment impacts; and (iv) formulate an environmental management plan.

3. This SIEE was prepared using the following techniques and methodologies:

(i) Collect and process data relating to climatic, hydrological, hydrogeological, socioeconomic characteristics;

(ii) Analyze samples to identify the status of air quality and water quality in the project area;

(iii) Formalize environmental measure to forecast the level as well as the scope of air pollution; and

(iv) Assess the effects of the project on the environment by using comparison with existing environmental criteria.

II. DESCRIPTION OF THE PROJECT

4. The proposed development of a new landfill site at Cu Chi under the Project is called construction of landfill no. 2 in HCMC North-West Solid Waste Treatment Complex Zone, which is the whole landfill site to be developed under the HCMC long-term development program. The site in Phuoc Hiep village, Cu Chi district, HCMC. The project features are in the Table.

Project Features

Description	Unit	Quantity
Total Area	ha	187.74
Total Landfill Area	ha	99.84
Green Zone and Contingency	ha	87.90
Receiving Capacity	ton	18,210,024
Total Receiving Capacity	m^3	20,233,360
Waste Treatment Capacity per Day	ton	3,500
Leachate Treatment Capacity (max)	m^3/day	800
Leachate Treatment Capacity (min)	m^3/day	200
Gas Treatment Capacity	m^3/day	117,720 (4,905 m^3/ hour)
Total Project Investment Cost	D million	793,151 equivalent to $50.794 million
Cost Related to Environmental Management Plan	D million	10,270 equivalent to $657,700

Exchange rate $1 = D15,615. ha = hectare, m^3 = cubic meter, m^3 = cubic meter per day.

Source: Ho Chi Minh City People's Committee

5. The HCMC North-West Solid Waste Treatment Complex Zone is the long-term development program to construct 20 landfill cells together with operational buildings and other facilities to be implemented from September 2005 to June 2016. Under the ADB financed project, 12 cells will be implemented from September 2005 to December 2007, and the remaining 8 cells will be constructed from June 2014 to 2016, using HCMC's own fund.

6. At this moment, HCMC has two landfill sites: (i) Go Cat landfill site with a capacity of 2,000 tons of waste per day, that is estimated to be closed by the end of 2005; and (ii) landfill site no.1 – HCMC North-West Solid Waste Treatment Complex Zone – Phuoc Hiep village, Cu Chi Province, with a capacity of 3,000 tons of waste per day. It is estimated that this site would be closed by the end of 2005. With the capacity of the existing landfill sites noted above, the lack of a landfill site for the city will be a serious issue in the management of solid waste after the year 2005 if developing a new landfill site is delayed. Therefore, the development of landfill site no.2 in HCMC North-West Solid Waste Treatment Complex Zone is of the highest priority so that HCMC can have an operational and environmentally sound landfill site by late 2005.

III. DESCRIPTION OF THE ENVIRONMENT

A. Natural Characteristics

7. **Geographic Location:** Landfill no. 2 in Phuoc Hiep village, Cu Chi district, approximately 37 kilometers (km) from HCMC. Landfill no. 2 has an area of 187.74 hectares (ha), and is bounded on the south by a road and the Thay Cai canal, on the west by canal 16, on the east by canal 15, and by a tree area in the north.

8. **Climatic Characteristics.** The project area has tropical climate, with typical high temperature (annual average, 27.2^{o}C), and average humidity for two seasons. Wind direction in the wet season is to the southeast; that in the dry season is to the Northeast.

9. **Topographic Characteristics.** Topography is flat, with an average height of +0.5 meter above sea level. This is a low area with alum and soft soil, and is affected by flooding in rainy season. A grid of canals drains the area.

10. **Strata-Geological Characteristics.** Results from the geo-engineering drillings in the area of landfill no. 2, indicate a weak soil consisting of four different types of clay and sandy clay layers. The soil is severely influenced by alum (pH3). Ecological conditions are poor and vegetation growth is severely restricted.

11. **Hydrological and Hydrogeological Characteristics.** Surface water and groundwater are characterized as follows:

(i) **Surface water.** The project area is bordered by canals: Thay Cai canal in the south, canal 15 in the east, and canal 16 in the west. The canals provide irrigation and drainage for the whole area. The highest water level of Thay Cai canal is +1.20 m. In the project area, the source of surface water has low pH (pH3) and is severely influenced by alum.

(ii) **Groundwater.** Results from the geological exploration show that the first aquifer lies at 18–40 m depth. Groundwater table during the dry season is extremely shallow: 0.7–1 m. Other characteristics are as follows:

(a)	pH	5.8–6.75
(b)	Total liberalization	54.73–62.74 milligrams per liter (mg/L)
(c)	Chlorine content	17.73–50.62 mg/L

12. **Quality of Atmospheric Air.** Almost all air pollutants are at lower levels than the standard, except hydrogen sulfide (H_2S) = 0.015 greater than the Viet Nam standard (TCVN) = 0.008, and formaldehyde (HCHO) = 0.018 greater than TCVN = 0.012, which are higher than the standard.

13. **Noise.** According to the Vietnamese standard (TCVN 5949–1995), the acceptable noise in public and residential areas is 60-decibel (dB) max. The recorded noise in the project area is around 38–48 dB, which is lower than the standard.

B. Environmental Resource Characteristics

14. **Existing Vegetation.** Soil in the project area is alum saturated and unacceptable for any planting. Vegetation consists of grass and reed in 60.03% of the area; cassia tree, 20.04%; rice, 10.4%, pineapple, 4.35%; mango, 0.66%; eucalyptus, 0.62%. Other vegetation on 2.82% is insignificant.

15. **Existing Animals.** There are no wild animals in the project area. All households have self-investments in small-scale livestock and cattle breeding and raise come pigs, ducks, chickens, etc.

16. **Aquatic Ecosystem.** The aquatic ecosystem in the project area is poorly developed because the water source is seriously affected by alum.

C. Existing Socioeconomic Situation

17. **Population and Labor.** The project area has only 14 households, and permanent structures are located mainly along canal 15 to the east of the site. According to the socioeconomic survey, only two households have a stable life; and the rest are mainly freelance laborers who live in temporary, thatched houses. The working group comprises 40–50% of the household population, with females representing around 57%.

18. **Health Centers.** Only one poorly-equipped health center serves the are. The center is about 4–5 km from the landfill site.

19. **Educational System.** There is one elementary school and one junior high school in the village located around 4-5kms from the landfill site.

20. **Economic Structure in the Project Area.** Overall, the village sources of livelihood are low-output agricultural cultivation (mainly tree planting) and small handicrafts. All households have self-investments in small-scale poultry and livestock breeding, but economic efficiency is very low. Industry and services are nonexistent.

21. **Natural and Cultural Heritage.** Natural and cultural heritage sites are nonexistent in the project area. There are no historical and archeological works, religious centers, or other significant public facilities.

22. **Public Facilities and Environmental Sanitation.** With the project area located near provincial road no. 8 and highway no. 22, access to the site is both efficient and strategic. Residents along canal 15 have access to a public network power supply, but a number of households along road no. 3 do not yet enjoy such access. All households use water from self-drilled deep wells. Households collect and burn their own solid waste. They discharge their domestic and livestock breeding wastewater directly into the existing canals, thus polluting the canals and the ambient air.

IV. FORECASTING ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Forecast Environmental Impacts

23. **Before Project Implementation.** Before project implementation, the various socioeconomic impacts relate mainly to land acquisition and resettlement. The construction of the project will result in losses (trees, crops, houses, lands, etc.) and will have psychological impacts on the affected persons.

24. **During Project Implementation.** The following potential impacts during project implementation are foreseen:

(i) Air pollution

(a) Gas emissions (carbon dioxide [CO_2, sulfur dioxide [SO_2], nitrogen oxide [NO_X], carbon oxide [CO]) from waste transportation vehicles and construction equipment

(b) Dust during the transportation process and earthmoving

(c) Increase in noise levels due to operation of transport vehicles and construction equipment

(ii) Water pollution

(a) Wastewater from daily activities of landfill operators
(b) Wastewater from the daily cleaning of vehicles
(c) Sludge water discharged in the process of constructing dumping cells

(iii) Environmental pollution

(a) Soil, construction waste, and sludge
(b) Trees and grass waste at the site
(c) Waste from daily activities of landfill operators and the landfill's operation

(iv) Other impacts during construction

(a) Increased traffic in the area
(b) The workers' safety and sanitation
(c) Effect of earthmoving and the landfill's construction on the area's ecosystem
(d) Change in the surrounding scenery, etc.

25. **During Project Operation and Maintenance.** Many impacts are foreseen with the operation of the landfill.

(i) Air pollution

(a) Gas emissions from disintegrating waste
(b) Gas emissions from the gas treatment station of the landfill
(c) Gases, noise, vibration from the waste-transporting vehicles
(d) Dust and odor caused by weather conditions

(ii) Water pollution

(a) Leachate from the landfill
(b) Leachate from the transfer station
(c) Leachate from the waste-transporting vehicles
(d) Wastewater from cleaning of vehicles before they leave the landfill
(e) Rainwater falling on the surface of the landfill site
(f) Wastewater discharged from daily activities of landfill operators

(iii) Solid waste

(a) Soil, construction waste during the operation
(b) Waste from daily activities of landfill operators

(iv) Other impacts

(a) Risk of inflammation in the landfill area
(b) Workers' safety and sanitation
(c) Effect on surrounding community's health due to harmful insects such as flies, mosquitoes, and pathogenic microorganisms
(d) Risk of soil subsiding in areas covered by topsoil

B. Proposed Mitigating Measures

26. **Before Project Implementation.** The land acquisition and compensation process should be carried out quickly and completely to enable the affected persons to immediately normalize their livelihood and economic situation.

27. **During Project Implementation.** Mitigating measures during project implementation will minimize pollution from three sources.

(i) Air pollution

(a) Equipment and vehicles operating at the site will be required to strictly observe the requirements governing air pollution under Viet Nam standards (TCVN). All machinery will be equipped with silencers to minimize noise.
(b) Old and outdated machines and vehicles that are not environment-friendly will not be allowed on the site.

(ii) Pollution of water sources

(a) Discharges from vehicle cleaning stations will be collected and preliminarily treated before they are transferred to the treatment system at the landfill site.

(iii) Pollution due to solid waste

(a) Storage bins will be supplied for on-site solid waste and this waste will be disposed of in the landfill cells.
(b) Soil waste from the cells' construction will be collected, stored on site, and used as fill in constructing banks and for adjoining low-lying areas.

28. **During Operation and Maintenance.** There will be extensive measures to mitigate environmental impacts during the operation of the landfill site.

(i) Measures to mitigate air pollution

(a) To prevent pollution from transport of waste, all vehicles will be covered by plastic sheets.
(b) Waste will be transported during low traffic times to minimize gas emissions in crowded areas.
(c) Internal roads and transportation roads will be regularly sprayed with water to minimize dust.
(d) Chemicals to kill harmful insects will be spayed regularly.
(e) Machinery maintenance will be frequently carried out to increase the equipment's effectiveness and reduce the discharge of polluted gases.
(f) Unpleasant odors will receive treatment during the waste disintegration process. Waste will be promptly dumped in appropriate cells and covered with soil to control hazardous gases and unpleasant odor so that they will not be emitted directly into the environment.
(g) The green zone will be widened to create a barrier to the site and to improve the environment in the project area.

(h) Gases emitted by the landfill will be collected and treated in a gas collection system.

(i) After waste dumping is completed, the system treating collected gas treatment will continue to be operated to treat the remaining gas and wastewater discharged from the landfill cells.

(ii) Measures to surface water and groundwater pollution

(a) Movement of leachate to surface water and groundwater sources will be controlled by using liners that have anti-permeable properties for the cells' bottom, the leachate collection and treatment system, and the top covers. High-density polyethylene (HDPE) sheet, 2 millimeters thick and resistant to permeability (plain sheet at the bottom and treated one for the sides of the landfill compartments) will be used. The HDPE sheet will also prevent gas from escaping into the groundwater aquifer. As the top cover, the HDPE sheet will protect the landfill from rainwater that could create unnecessary leachates.

(b) Water discharge from activities of landfill operators, vehicle cleaning stations, and transfer stations will be collected and preliminarily treated before it is piped to the treatment system in the landfill site.

(c) Wastewater treatment and collection will be constructed as an integrated system to meet the wastewater collection and treatment standards set by the Government of Viet Nam before the treated wastewater is discharged to a receiving source in the area.

(d) Covering the landfill will protect the environment.

(iii) Other mitigating measures during construction, and operation and maintenance of the landfill

(a) Twice a month, the non-hazardous permethrine will be sprayed on the landfill and surrounding residences (within a radius of 300 m) to reduce flies and rodents.

(b) The operator will strictly implement the policy of compensating for their loss the people directly affected by the landfill's operation.

(c) Daily, lime (equal to 1% of solid waste volume) will be spread on the solid waste sterilize the waste and prevent epidemics.

(iv) Measures to ensure safety and sanitation, and prevent accidents

(a) A recurrent check of the operators' health as well as that of the surrounding residents will be conducted to ensure there are no negative impacts from operating the landfill.

(b) First-aid facilities for minor injuries will be provided and maintained at the site. Communication systems for emergency situations will be installed.

(c) Fire extinguishers for unforeseen fires resulting from gas combustion will be provided and kept in a clearly marked building.

(d) Training in work consciousness and safety for operators will be conducted regularly.

V. INSTITUTIONAL REQUIREMENTS AND ENVIRONMENTAL MONITORING PLAN

29. A detailed environmental management plan (EMP) for project implementation has been prepared. The EMP includes (i) a summary of potential impacts, (ii) proposed mitigation measures, (iii) proposed environmental quality monitoring program, (iv) community consultation activities, (v) responsibilities for mitigation and monitoring requirements, (vi) responsibilities for reporting and review, (vii) work plan, (viii) procurement plan, and (ix) cost estimates. This section briefly describes the proposed institutional arrangements, monitoring activities to be carried out, and cost estimates required for these management and monitoring activities. Details of environmental impacts and mitigation measures are in paras. 26–28.

A. Institutional Requirements

30. The project management unit (PMU) of the Environmental Improvement Project is responsible for the whole project, including implementing the measures for mitigating the negative environmental impacts and overall environmental monitoring in the project area. A group in charge of environmental management and monitoring will be established under the guidance o the PMU and, on behalf of the PMU, will manage all issues relating to the environment during the various stages of project implementation: (i) before project implementation. (ii) during project implementation, and (iii) during operation and maintenance.

31. The summary of impacts to be mitigated and the proposed mitigation measures follows:

(i) Before project implementation, the major impact is the land loss that will adversely affect the socioeconomic life of the relocated people. Mitigating measures are satisfactory compensation, creating good resettlement conditions, job creation, and sustained livelihood opportunities.

(ii) During operation and maintenance, the major impacts are air pollution, and pollution of surface water and groundwater sources. Mitigating measures are to construct an impermeable leachate system, establish and carry out a leachate collection and treatment system during construction, and implement a gas collection and treatment system during operation and maintenance.

B. Environmental Monitoring Plan

32. The EMP in the project area will monitor the changes in environmental quality during the project's operation by comparing the new monitoring data with that during the initial condition. From the comparison, the environmental situation in the project area can be assessed:

(i) Actual scope and level of impacts and their critical level from environmental pollutant sources compared with the predicted conditions
(ii) Impact of pollutants
(iii) Measures to protect environment in the area
(iv) General effectiveness of those measures

33. The EMP needs to meet the following conditions:

(i) Follow a realistic sampling program: temporal and spatial (location of sampling).
(ii) Use sampling methods relevant to the source.
(iii) Collect and record quality data.
(iv) Check qualities of measurement and analysis. This action aims to help the environmental management office collect accurate and reliable results that lead to accurate and exact assessments and conclusions.
(v) Prepare clear diagrams showing changes in loading and contents of pollutants.
(vi) Prepare a recording plan for collected data to facilitate later reference.
(vii) Set up a mechanism for receiving and responding to the community's comments or complaints.
(viii) Set up a regular plan for reporting to internal management.
(ix) Particularly assign tasks to responsible individuals and identify clearly their respective responsibilities.

34. Environmental monitoring will be continuously carried out by monitoring and checking major environmental parameters related to landfill no. 2's operations.

C. Activities for Monitoring Environmental Quality

35. Monitoring will be carried out at predetermined interval before construction, during construction, during operation and maintenance, and after closure of the landfill site. Monitoring parameters, locations, and frequency of monitoring are described in the EMP in detail. The activities are as follows:

(i) Monitor air quality inside and outside the project area.
(ii) Monitor water quality in the project area: surface water, groundwater, and wastewater.
(iii) Monitor the health of operators and surrounding residents; carry out measures to eliminate harmful insects and rodents in the area.

D. Environmental and Monitoring Costs

36. The PMU is responsible for implementing of the EMP during project implementation. The costs of land acquisition, resettlement, and construction of all work components are estimated and presented in the feasibility study report. The costs needed for environmental management and monitoring are estimated as follows:

(i) Construction of 12 groundwater observatory wells around the landfill site: D403.7 million
(ii) Air quality monitoring: D3,816 million
(iii) Groundwater and surface water quality monitoring: D5,248 million
(iv) Periodical Health Checks for the landfill operators and community (VND30 million per year): VND600 million
(v) Landfill Cell Structure Monitoring: VND200 million

VI. PUBLIC CONSULTATION AND DISCLOSURE

37. The activities relating to the community in respect of project design follows:

(i) Discuss with local leaders the criteria for selecting the project location.
(ii) Supply the public, media, press, radio, television, etc. with project contents, including design and technology solutions.
(iii) Organize workshops to acquire scientists' and prominent persons' comments, and revise the project's content based on the comments.
(iv) Prepare and send survey forms to consult the public and the community in the project area. Collect the forms, process their information, and formulate plans that meet the requirements of the community and people in the project area.

38. The activities aim to make people clearly understand the importance of the project in HCMC's socioeconomic growth by providing information on technology, land acquisition and compensation plan, and environmental pollution mitigating measures to be applied; receiving comments from the community; and formulating plans for appropriate and most effective adjustments to meet community expectations.

39. The following comments were received from government agencies, local leaders, and communities during preparation of the feasibility study:

(i) Note no. 2781/KTST-QH of the HCMC chief architect sent to HCMC Standing People's Committee on 27 August 2001: proposing more landfills in HCMC.

(ii) Minutes of meeting no. 17/BB-UB of Cu Chi Province People's Committee on 19 September 2001 regarding selection of landfill and cemetery locations in Cu Chi Province, and solid waste disposal area: an expected area of approximately 300–500 ha lying in the area from canal 23 toward highway 7 or from canal 14 to middle of canal 16, including the outside area of Tam Tan farm.

(iii) Note no. 145/GT-MT of the Department of Transportation and Public Works sent to HCMC Standing People's Committee on 1 January 2001 reporting plan of landfill construction locations in HCMC till 2020.The agenda and location where meetings were held:

(a) District 9 working meeting on 10 September 2001: 50 ha at Truong Thanh Ward
(b) District Thu Duc working meeting on 12 September 2001: 10 ha at Linh Trung Ward
(c) Nha Be Province working meeting on 17 September 2001: 200 ha at Da Phuoc Village
(d) Cu Chi Province working meeting on 18 September 2001: 500 ha at Phuoc Hiep Village

(iv) Notice no. 171/TB-VP of HCMC People's Committee Office on 19 October 2001 regarding solutions to landfill projects. The notice gives out recommendations and conclusions and guidance by Mr. Vu Hung Viet, vice chairman of HCMC People's Committee, requiring the Department of Transportation and Public Works, together with the Department of Planning and Investment and related departments and divisions to urgently identify and finalize the HCMC master plan of waste disposal till 2020, detailed plan of solid waste treatment for respective zones, prepare feasibility study and identify waste treatment technology, quickly

prepare feasibility study for landfill site at Tam Tan (Cu Chi) and other locations to ensure full information when calling and negotiating with investing parties.

(v) Note no. 513/UB of Cu Chi Province People's Committee sent to HCMC People's Committee and the Department of Transportation and Public works on 9 May 2002 proposing change in landfill construction location in Cu Chi Province. Cu Chi Province People's Committee suggests changing the landfill construction location from canals 14–16 at Tam Tan (cells 15–16) to canals 15–17 (cells 16–17).

(vi) Notice no. 148/TB-VP of HCMC People's Committee Office on 17 May 2002 regarding the conclusion of the Standing Committee of the Party and Standing HCMC People's Committee on landfill projects.

(vii) Meeting with local people held at Phuoc Hiep village, Cu Chi Province on 6 May 2003 with the following participants:

(a) Local representatives from the project area: people in Phuoc Hiep village, living within the affected area as the result of landfill construction and its operation (more than 100 people); representatives of People's Council, Phuoc Hiep village People's Committee, and village's agencies: Women's Association, Youth Union, farmers' association and veteran's association; vice chairman of Cu Chi Province People's Committee

(b) Representatives from relevant agencies: Department of Transportation and Public Works with its leaders, Environmental Management Office, Planning Office; representatives of the Department of Planning and Investment and of the Department of Science, Technology, and Environment.

(c) Representatives of press agencies: Saigon Liberation newspaper, youth newspaper, and HCMC radio station.

(d) Representatives of project's owner: CITENCO

(e) representatives of consultant organizations

40. The minutes of public consultation meetings are attached as Appendix 1. The comments received from beneficiaries including participants during the meetings will be addressed through mitigating measures proposed in paras. 26–28.

VII. CONCLUSION AND RECOMMENDATION

41. The Project to construct the landfill site no. 2 at the HCMC North-West Solid Waste Complex Zone will give realistic socioeconomic benefits to HCMC, and enhance living standards as well as make the city more hygienic and cleaner. With the current situation of landfills in HCMC, it is urgent that landfill site no. 2 be immediately constructed to reduce pressure on other landfills that are becoming overloaded.

42. Landfill site no. 2 seems the most economical and socially and environmentally beneficial landfill location to meet the solid waste disposal requirements of HCMC and should therefore be implemented as a matter of highest priority.

43. The SIEE of landfill site no. 2 at Phuoc Hiep village, Cu Chi Province, HCMC fully complies with ADB's Environmental Assessment Requirements and closely follows ADB's *Environmental Guidelines for Selected Infrastructure Projects*. In addition, it is in compliance with the Government of Viet Nam's Guidelines on Environmentally Sensitive Projects. The SIEE has identified a number of potentially negative impacts, both social and environmental and has shown that the mitigating measures in para. 36, along with proposed institutional and monitoring programs, will negate these impacts. Furthermore, the HCMC policy on assisting households affected by resettlement projects gives all due consideration to ensuring that affected households are substantially better off after than they were before resettlement. The conclusion, therefore is that there is no need for any additional study and that an EIA is not required.

MINUTES OF PUBLIC CONSULTATION MEETINGS

1. This document is extracted from the minutes of a public consultation meeting held on 6 May 2003 regarding the construction of landfill no. 2 at Phuoc Hiep Village, Cu Chi Province, Ho Chi Minh City (HCMC).

2. The construction of a sanitary landfill at Phuoc Hiep village was explained to people in the project area in a meeting on 6 May 2003 at 8:00 a.m. The following participated.

(i) Local people of the project
  (a) All people in Phuoc Hiep village, living within the area that will be affected as a result of the landfill construction and its operation (more than 100 people)
  (b) Representatives of People's Council, Phuoc Hiep village People's Committee, and representatives of village's agencies: Women's Association, Youth Union, Farmer's association and Veteran's association
  (c) Vice Chairman of Cu Chi province People's Committee

(ii) Representatives from relevant agencies
  (a) Department of Transportation and Public Works leaders, Environmental Management Office, Planning Office
  (b) Department of Planning and Investment
  (c) Department of Science, Technology and Environment

(iii) Representatives of press agencies
  (a) Saigon Liberation newspaper
  (b) Youth newspaper
  (c) HCMC radio station

(iv) Representatives of Project's owner: CITENCO

(v) Representatives of consultant organizations

3. At the opening, the leaders of Phuoc Hiep village presented the subject of the meeting and introduced the participants.

4. Then the representative of the Project's owner presented the design for constructing a sanitary landfill at Mui Con Tieu hamlet, Phuoc Hiep village.

5. The opinions of the people's representative are summarized as follows:

(i) The people of Cu Chi Province understand the necessity of constructing a landfill for HCMC. The selected site is the village's contribution to the province and city. People in the village entirely back up the local authority in following the city's policy.

(ii) Through the press, and viewing the proposed landfill development on HCMC television station and the detailed project presentation at the meeting, the people acknowledge that the landfill's design and construction are technically sound,

ensuring principles of environmental protection, and all community participants fully support the given technical solution.

(iii) We request the relevant agencies to satisfy the following requirements:

(a) In constructing the landfill, the contractors must strictly adhere to the approved design.
(b) All impacts must be mitigated in full compliance with the HCMC People's Committee policy on environmentally sound landfill development.
(c) The surrounding residents must express a commitment to environmental sanitation.
(d) Land acquisition and compensation must be carried out according to the agreement with the affected people so that they can relocate and not be disadvantaged because of relocation.
(e) Ensure that there is a standard road for waste transport and that there be frequent cleaning to prevent dust disturbance.

6. After listening to the opinion of the village representative, the representatives of the Project's owner and relevant authorities expressed their commitment to implementing specific measures that meet the people' requirements.

7. The meeting ended at 11:30 a.m. of the same day.

The Viet Nam Civil Construction Consulting Co. (VNCC) Saigon held a public consultation meeting with 14 households in the project area on 23 May 2003. The results are summarized as follows:

(i) General comments:

(a) Of the affected households, 36% fully agree to the proposed relocation conditions.
(b) Of the affected households, 64% partially agree to the proposed relocation, but require further discussions.

(ii) Comments on the environment:

(a) Compensation for the affected households.
(b) Carry out environmental pollution mitigating measures.
(c) Suggest that the agency operating the landfill frequently sprays to deodorize the area and to kill insects; spray water on roads to prevent dust during transport of waste.
(d) Examine regularly the health of surrounding residents.

(iii) Compensation policy: Most interviewees request cash compensation.

(iv) Compensation rate: Most households in the project area suggest satisfactory compensation from the state.

(v) Among the households, 9 out of 14 want to return to their old lands.

9. Some remarks were withdrawn from the above results:

(i) Most households have members working as gardeners, with average income and low living standard. In case of difficulty, they intend to stop being gardeners and to work as industrial employees.
(ii) Education level in the area is generally low.
(iii) The facilities are relatively poor. Land is presently used for low-value crops.
(iv) They agree on construction of the landfill but only if the following conditions are satisfied: satisfactory compensation for land acquisition, allow relocated households to borrow (without interest or at low interest) to possibly enable them to change careers, and tax exemption for their trade.
(v) Suggest that the state provide a permanent residential area with good infrastructure to ensure good and improved living conditions.
(vi) The resettlement site must be near public facilities such as school, hospital, and market to facilitate affected persons' trade.
(vii) There is need for a policy of vocational training and priority on creating permanent jobs in industrial zones for the affected households.
(viii) Most affected households interviewed hope that after the landfill comes into operation, no negative environmental consequences will result.