



**The Socialist Republic of Vietnam**

**Haiphong Peoples Committee**

**The Republic of Finland**

**Ministry for Foreign Affairs  
Department for International  
Development Cooperation**

# **Haiphong Water Supply and Sanitation Programme, Phase IV**

## **Volume V Annexes and Acronyms**

LIBRARY IRC  
PO Box 93190, 2509 AD THE HAGUE  
Tel.: +31 70 30 689 80  
Fax: +31 70 35 899 64  
BARCODE: *16292*  
LO: *022 UNHA00*

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## **IRC International Water and Sanitation Centre**

Access to water and sanitation are basic human rights. IRC's mission is to help people in developing countries to get the best water and sanitation services they can afford. Working with partners in developing countries, we aim to strengthen local capacities by sharing information and experience and developing resource centres. We emphasize the introduction of communication, gender, participation, community management and affordable technologies into water and sanitation programmes.

IRC's work focuses on the needs of developing countries in Africa, Asia and Latin America. In each region we work with partner institutions in selected countries to develop new approaches, ranging from empowering communities to make informed choices, to helping governments facilitate the process of development rather than construct and supply systems.

In a process of joint learning, local capacities are built in subject areas linked to those areas of IRC's expertise for which there is a local demand. Partner organizations receive support in the development of skills related to documentation and information, publication, research, training, advisory services and advocacy.

IRC is an independent, non-profit organization supported by and linked with the Netherlands Government, the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), the World Bank and the Water Supply and Sanitation Collaborative Council.

IRC International Water and Sanitation Centre  
P.O.Box 2869  
2601 CW, Delft  
The Netherlands  
Tel. +31 (0)15 2192939  
Fax +31 (0)15 2190955  
E-mail: [general@irc.nl](mailto:general@irc.nl)  
Website: [www.irc.nl](http://www.irc.nl)

# ANNEX 1

## **DOCUMENTS AVAILABLE AND CONSULTED:**

1. Project Document, Haiphong water supply and sanitation programme, Phase III. Haiphong People's Committee, March 1997
2. A practical attempt to initiate people's participation in sanitation development in Haiphong. Soil and Water, May 1997
3. Work Plan 1997-1998, Revision December 1997. Haiphong Water Supply Company, Haiphong Sewerage and Drainage Company, Haiphong Urban Environment Company, Soil and Water, December 1997
4. The awareness and evaluation of customer and supplier on the present water supply service in Haiphong city (Report on Results of Customer and Staff Surveys). Hai Phong Water and Sanitation Programme, February 1998
5. Policy Paper, Medium Term Development Plan, Volume I, Strategy. Soil and Water, May 1998
6. Work Plan 1999, Draft October 1998. Haiphong Water Supply Company, Haiphong Sewerage and Drainage Company, Haiphong Urban Environment Company, Soil and Water, October 1998
7. Project Implementation Plan, Revision December 1998. Soil and Water, December 1998
8. Project Document, Haiphong Water Supply and Sanitation Programme, Phase III. Haiphong People's Committee, Ministry for Foreign Affairs of Finland, March 1999
9. Mid-term Review of Haiphong Water supply and Sanitation Programme, Phase III, Mission Report. Ministry for Foreign Affairs of Finland, March 1999
10. Vietnamin sanitaatiohankkeen Haiphongin komponentti; Projektidokumentin laatiminen (Vietnam Sanitation Project, Haiphong component; Preparation of Project Document). Ministry for Foreign Affairs of Finland/Selma Honkanen, 3.4.1999
11. Project Appraisal Document on a Proposed credit in the amount of SDR 59.4 million (US\$80.5 million equivalent) to the Socialist Republic of Vietnam for three cities sanitation project. Report No: 18796 VN-PE-51553. The World Bank, April 22, 1999

12. Report on the Mid-term implementation status and plan for 1999. Hai Phong Water Supply and Sanitation Program, Solid waste component Phase III. HP Transportation and Urban Public Work Services, HP Urban Environment Company, April 1999
13. Implementation Review Mission, April 22 to May 6, 1999, Aide Memoire for Haiphong Sub-Project, Vietnam Water Supply Project (Cr. N-26-VN)-ID.4830. Alan Coulthart, Nguyen Cong Thanh and Cuong Duc Dang, April 1999
14. Terms of Reference of 'Revolving Fund' for Toth Project of Sewerage system and Sanitation of Haiphong. Haiphong People's Committee/Haiphong Women's Union, May 1999
15. Main Report and Annexes 1 – 4, Vietnam Sanitation Project, Haiphong Sub-Project, Volume 1,. Soil and Water in association with VIWASE (Vietnam Consultant on Water Supply, Sanitation and Environment), May 1999
16. - Volume 2, Annexes 5 – 7, Vietnam Sanitation Project, Haiphong Sub-Project. Soil and Water in association with VIWASE, May 1999
17. - Volume 3, Annexes 8 – 12, Vietnam Sanitation Project, Haiphong Sub-Project. Soil and Water in association with VIWASE, May 1999
18. - Volume 4, Drawings, Vietnam Sanitation Project, Haiphong Component. Soil and Water in association with VIWASE, May 1999
19. Development cooperation activities in water supply and sanitation sector in Hai Phong between the governments of Vietnam and Finland. Ministry for Foreign Affairs of Finland, 9.6.1999
20. Report of the Sewerage Charge Specialist Mr Timo Heinonen about his mission in Haiphong May 10<sup>th</sup> to June 4<sup>th</sup> 1999. Soil and Water, June 16<sup>th</sup> 1999
21. Draft Operational Manual for: Implementation of 'Revolving fund sanitation sub-loan', Three-cities Sanitation Project. Hanoi, June 1999
22. Report on Plan implementation status of quarter I & II/ 1999 – Phase III (Solid Waste Component). Hai Phong Urban Environment Company, July 1999
23. Quarterly Progress Report April - June, 1999. Soil and Water, July 1999
24. Septage Management and Sanitation Revolving fund in the City of Haiphong, Haiphong Water supply and Sanitation Programme, Phase II. Soil and Water, July 1999

25. Project Agreement (Three Cities Sanitation Project). International Development Association, August 1999
26. Development Credit Agreement (Three Cities Sanitation Programme). International Development Association, August 1999
27. Leaving Report. Stephen John Greenhalgh, August 1999
28. Terms of Reference for Preparation of support to Haiphong Sewerage and Drainage Capacity Strengthening and for Preliminary formulation of the continuation of Haiphong Water Supply and Sanitation Programme. Ministry for Foreign Affairs of Finland, Draft 9.8.1999
29. Report on Preparation plan formulating for Phase IV, HP Water Supply and Sanitation Programme (Environment and solid waste component). Haiphong Urban Environment Company, August 1999
30. Formulation of Project Document for the Haiphong Water Supply and Sanitation Programme, Phase IV. Haiphong Urban Environment Company's letter to the Ministry of Foreign Affairs of Finland, 1999
31. Report: Realization of HWSSP – Phase 3 plan from 01/7/1997 to 31/7/1999, Tentative Plan Quarter IV/1999 and 2000, Technical assistance for 1B & HPWSSP – Phase IV. Haiphong Sewerage and Drainage Company, September 1999
32. Proposed Work Plan of HPWSCo for Phase IV, 2001-2004. Haiphong Water Supply Company, September 1999
33. Technical Assistance for Haiphong Sewerage and Drainage Company (SADCo), World Bank 1B Project, Haiphong Sewerage and Drainage Design Project
34. Draft Terms of Reference for Institutional Strengthening of Haiphong SADCO, Vietnam Three Cities Sanitation Project. World Bank 1999
35. Vietnam 3 Cities Sanitation Project, Revolving Funds for Sanitation Sub-loans

# ANNEX 2

## HPWSSP, PHASE IV LOGICAL FRAMEWORK FORM SUB-PROJECT TECHNICAL ASSISTANCE, TRAINING AND STUDIES

	INTERVENTION LOGIC TA	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
OVERALL OBJECTIVES	Good water supply and sanitation services for the people and customers in Haiphong and an improved quality of environment.	WSCO, SADCO and URENCO deliver services to customers efficiently, with good operation and maintenance, sound financial procedures and following environmental regulations.		
		Environmental standards meets the targets set in corporate plans and in the sewerage and drainage development plan		
		Duration of floods is reduced.		
		Behaviors of consumers supports the sustainability of water and environmental sanitation services.		
PROJECT PURPOSE	Improved performance of the water supply and sanitation organizations towards well-functioning and financially self-sustaining public enterprises.	The proportion of non-revenue water is reduced in urban Haiphong.		
		Sanitation development and management is done in accordance with corporate plans and with sewerage and drainage development plan		
		Sustainable (environmentally, socially and financially) technology, methods and procedures are applied for management water and sanitation services.		
		Policies and regulations including those for finance, cost recovery, personnel and management of construction management are developed or refined, tested and implemented.		
		Customers provided with good service and mobilized, will increase their payments, dispose of garbage and refuse better and will construct and use of latrines with septic tanks.		

RESULTS	1. The top management of the SADCO has the human and physical resources necessary for efficient and successful management of the company	An effective corporate management team has been created with clearly understood individual responsibilities, delegation of powers to the appropriate levels where decisions are made promptly and rationally.	Annual reports.	An enabling environment is provided through prompt approval and enforcement by Vietnamese Authorities of policy changes and regulations for issues such as protection of water sources, consumer policies such as water tariffs and sewage changes, enforcement of environmental regulations and personnel policies.
		Company medium-term strategy is prepared, approved, implemented and regularly updated.	Annual reports	
		Budgeting procedures are prepared and introduced.	Annual reports.	
		Well-justified budgets are submitted on time and approved, in order to ensure sufficient funding of the company's operations, allowing for changes in costs.	Annual approved budgets are examined.	
		Financial management procedures are developed and applied.	Audit statements.	
		A computerized MIS is created, kept current and is being used.	Special study report.	
		Personnel development plan is prepared, approved and implemented.	Annual report. Joint evaluations.	
		The wastewater tariff structure, the collection procedures and a system to reach acceptable collection rates are all developed and implemented thereby ensuring sustained financing which takes cost changes into consideration.	Annual report and audit statements.	
	Operation and maintenance of the sewerage and drainage systems, including the household septic tanks and connections are improved through implementation of O&M standards, better planning of operations, including possible use of out-sourcing (or equivalent use of the private sector) and improved monitoring of activities.			



	<b>INTERVENTION LOGIC TA</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>	
<b>RESULTS</b>	2	Haiphong WSCO and URENCO have the human and physical resources necessary for efficient and effective management of the companies.	Company medium term strategy is updated, approved and implemented.	Review of strategy. Annual reports.	The PSEs are committed to adopting & implementing management principles and mechanisms developed by the programme, including delegation of powers and duties to appropriate levels.
			budgeting procedures and consistent budgeting practice are followed.	Audit statements.	
			Personnel plan is updated and implemented.	Annual report. Joint evaluations.	
	3	More efficient, accurate and transparent financial administration, including billing and collection of SADCO, WSCO, URENCO	Each of the accounting systems is current and conforms with the required and agreed standards;	Audit statements.	Present Phase III is adapted to support smooth transition to Phase IV. Necessary agreements between consultant and Government of Finland can be approved to enable a seamless start of activities on time.
			The accounting systems provide accurate and timely information for budgeting, cost control and decision-making purposes;	Audit statements.	
			Current audit reports are available, and not irregularities are reported;	Audit statements.	
			Water, sewage and solid waste bills are sent regularly to the customers, at agreed intervals;	sample study.	
			Charges for services are collected promptly, meeting at least each company's target for reducing receivables.	Sample study. Audit statements.	
	4	Improved financial structure of SADCO, WSCO, URENCO	The audited accounts of the three PSEs show that the structure of income has improved, with revenue income accounting for an increasing percentage of total income, and collected revenues meeting or exceeding the targets set in the annual corporate plans.	Audit statements. Joint evaluation.	

RESULTS	5	The O&M systems of SADC0 have been improved.	SADC0 establishes and puts into effect (either in-house or through outsourcing) a programme+D70, updated annually, for regular emptying of all septic tanks and for cleaning primary, secondary and tertiary sewers an drains, channels and lakes.	Annual review. Joint site checks as detailed in annual reports..	The office, facilities and equipment, including transportation, procured and used in previous phases of the programme will continue to be available and be used in Phase IV.
			SADC0 establishes, puts into effect and monitors operating rules for the tidal gates, and revises these annually or as necessary.	Annual review. Joint site checks as detailed in annual reports..	
			Response time to significant interruptions to supply, or water quality problems posing a public health hazard, is less than 1 day with service provided through properly-equipped SADC0/contractee emergency response teams.	O&M records which are double checked through site visits.	
			Sanitation and hygiene promotion activities are implemented with staff and public.	annual report. Spot field checks.	
			SADC0 maintains a consumer complaints registers in each phuong office, and responds to all complaints within 2 days of receipt. All repairs not made within an agreed number of days will be reported to senior management for action.	Annual report. Check of registers with spot check with consumers to confirm validity of information.	
	6	O&M systems of WSCO have improved.	Water treatment efficiency, as measured by agreed indicators is equal or better than the targets set in the annual plan.	Formulation of indicators described in annual reports. Spot checks.	
			Water losses from each section of the main network do not rise more than 5 percent above the values measured when rehabilitation was completed.	Special periodic short-term study, the results of which appear in annual report.	

	INTERVENTION LOGIC TA	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
RESULTS		Non-revenue water in improved phuongs is kept within 5 percent of the value when the improvements were completed	Baseline comparison with subsequent physical and accounting checks.	
	Response time to significant interruptions to supply, or water quality problems posing a public health hazard, is less than 1 day.	Reporting registers with un-announced spot checks to confirm validity of information.		
	WSCO establishes, puts into effect and monitors a program for regular flushing of all mains.	Annual report.		
	Any complaints not resolved within an agreed number of days brought to the attention of senior management.	O&M records which are double checked through site visits.		
	WSCO maintains consumer complaints registers in each phuong office, and responds to all complaints within 2 days of receipt.			
	7 O&M systems of URENCO have improved	URENCO achieves annual targets for standard vehicle maintenance schedules and for vehicle availability.	log books are periodically reviewed.	
	URENCO achieves agreed annual targets for outsourcing of collection services.	Annual report, contracts, audit.		
	URENCO meets or exceeds annual performance targets for the proper operation of the Tang Cat landfill, including control of tipping, hazardous wastes management, soil over to tipped material, and leachate control and treatment.	special study report.		
	URENCO carries out spot checks throughout the city for accumulations of uncollected MSW, and takes appropriate remedial action.	Existence of plan and periodic reports on the spot checks.		
		Any complaints not resolved within an agreed number of days brought to the attention of senior management.	Annual report.	

<b>ACTIVITIES</b>	<b>1.</b>	<b>Strengthening management of SADCO</b>			
	1.1	Preparation/up-dating of personnel plan.			
	1.2	Assessment of training needs, including those related to sanitation and hygiene promotion.			
	1.3	Develop, revise and begin implementing training plan			
	1.4	Review of current company strategy by stakeholders			
	1.5	Preparation or up-dating of the company strategy.			
	1.6	Reviewing present budgeting practices and developing an improved budgeting procedure for annual and long-term planning.			
	1.7	Preparation and consultation to improve financing construction with a revision mechanism.			
	1.8	Preparation or up-dating a computerized MIS system.			
	1.9	Staff deployment or re-deployment for improved financial procedures.			
	1.10	Continued orientation of personnel in new systems and procedures.			
	<b>2</b>	<b>Strengthening management of WSCO &amp; URENCO</b>			
	2.1	Preparation/up-dating of personnel plan.			
	2.2	Assessment of training needs, including those related to hygiene promotion.			
2.3	develop, revise and begin implementing training plan				

		<b>INTERVENTION LOGIC TA</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>ACTIVITIES</b>	2.4	Review of current company strategy by stakeholders			
	2.5	Preparation or up-dating of the company strategy.			
	2.6	reviewing present budgeting practices and developing an improved budgeting procedure for annual and long-term planning.			
	2.7	Preparation and consultation to improve financing construction with a revision mechanism.			
	2.8	Preparation or up-dating a computerized MIS system.			
	2.9	Staff deployment or re-deployment for improved financial procedures.			
	2.10	Continued orientation of personnel in new systems and procedures.			
	<b>3</b>	<b>Improved financial administration</b>			
	3.1	Preparation/up-dating of accounting personnel plan			
	3.2	assessment training needs			
	3.3	begin implementation of training plan			
	3.4	consultations to prepare improved ta-riff construction with a revision me-chanism and strategy for initiating it			
	3.5	Preparation and continuous up-dating of computerized customer register			
	3.6	periodic review, with staff of financial procedures.			

ACTIVITIES	3.7	periodic audit, accounting check with agreed distribution of audit report summary.			
	3.8	set up monitoring system to review/refine procedures for payment and billing, for collection.			
	<b>4</b>	<b>Improved financial structure</b>			
	4.1	Review with stakeholders the strengths and weaknesses of current procedures and structures			
	4.2	Preparation/up-dating the revenue structure and level			
	4.3	preparation/up-dating the revenue collection mechanisms			
	4.4	up-dating/modernizing the cost calculation system			
	<b>5</b>	<b>O&amp;M procedures of the three companies</b>			
	5.1	Review with stakeholders the O&M practices, repair times etc.			
	5.2	Set indicators and criteria for O&M.			
	5.3	Review and revise O&M procedure manuals			
	5.4	Identify partners & out-source maintenance to a reasonable degree			
	5.5	Plan and try-out a customers complaints response system including orienting customers, ensuring monitoring and the validity of the information			
	5.6	Plan and try out a customer incentive system for information of failures and problems encountered			
	5.7	Refine plans and provide training on large-scale			
	5.8	implement systems with continuous monitoring.			

**sub-project: FINANCING SUPPORT TO HOUSEHOLDS**

	<b>INTERVENTION LOGIC FS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>OVERALL OBJECTIVES</b>	Good water supply and sanitation services for the people and customers in Haiphong and an improved quality of environment.	WSCO, SADCO and URENCO deliver services to customers efficiently, with good operation and maintenance, sound financial procedures and following environmental regulations.		
		Environmental standards meets the targets set in corporate plans and in the sewerage and drainage development plan		
		Duration of floods is reduced.		
		Behaviors of consumers supports the sustainability of water and environmental sanitation services.		
<b>PROJECT PURPOSE</b>	Improved performance of the water supply and sanitation organizations towards well-functioning and financially self-sustaining public enterprises.	The proportion of non-revenue water is reduced in urban Haiphong.		
		Sanitation development and management is done in accordance with corporate plans and with sewerage and drainage development plan		
		Sustainable (environmentally, socially and financially) technology, methods and procedures are applied for management water and sanitation services.		
		Policies and regulations including those for finance, cost recovery, personnel and management of construction management are developed or refined, tested and implemented.		
		Customers provided with good service and mobilized, will increase their payments, dispose of garbage and refuse better and will construct and use of latrines with septic tanks.		

SUB-PROJECT PURPOSE	Financing support available for the poorest segment of the community to make sanitation improvements			
RESULTS	5 Sanitation improvement is available to the poorest segment of the community in 10 phuongs through a reliable management and financing mechanism.	The Women's Union of Haiphong has established a contractual relationship with SADCO to manage a funding mechanism for the poorest segment of the community in the <i>phuongs</i> where the WB/IDA 1B project is improving sanitation.	Review of contract.	
		The rules, regulations of the financing mechanism have been formally accepted and activated by the relevant authorities.	Formal approvals. Audit check.	
		The communities involved are aware of the programme and the rules under which it operates to support the investments for improved sanitation.	sample study.	
		At least 6,500 financing agreements for have been made between individuals households and the Women's Union.	Sample study. Annual report.	
		An auditing, monitoring and reporting order for the financing mechanism has been created and is used as planned.	Audit check. Joint review.	



	<b>INTERVENTION LOGIC FS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>ACTIVITIES</b>	<b>Sanitation improvement</b>			
	Arrange contractual relationship with WU including training, support for technical aspects and structuring inputs for hygiene promotion.			
	Define the financial mechanism with partners			
	Try-out of mobilization, training and financial mechanism			
	Awareness creation of benefits and responsibilities among households			
	Establish proper auditing mechanism and monitoring the financial flow and control procedures.			

**sub-project: CONSTRUCTION MANAGEMENT SUPPORT**

	<b>INTERVENTION LOGIC CMS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>OVERALL OBJECTIVES</b>	Good water supply and sanitation services for the people and customers in Haiphong and an improved quality of environment.	WSCO, SADCO and URENCO deliver services to customers efficiently, with good operation and maintenance, sound financial procedures and following environmental regulations.		
		Environmental standards meets the targets set in corporate plans and in the sewerage and drainage development plan		
		Duration of floods is reduced.		
		Behaviors of consumers supports the sustainability of water and environmental sanitation services.		
<b>PROJECT PURPOSE</b>	Improved performance of the water supply and sanitation organizations towards well-functioning and financially self-sustaining public enterprises.	The proportion of non-revenue water is reduced in urban Haiphong.		
		Sanitation development and management is done in accordance with corporate plans and with sewerage and drainage development plan		
		Sustainable (environmentally, socially and financially) technology, methods and procedures are applied for management water and sanitation services.		
		Policies and regulations including those for finance, cost recovery, personnel and management of construction management are developed or refined, tested and implemented.		
		Customers provided with good service and mobilized, will increase their payments, dispose of garbage and refuse better and will construct and use of latrines with septic tanks.		

	<b>INTERVENTION LOGIC CMS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>SUB-PROJECT PURPOSE</b>	Professional contract supervision of construction works in the Haiphong sewer network.	Professionally functioning, independent "Engineer" (with suitable team) has been employed and s/he is supervising the construction contracts of the WB/IDA financed investment project 1B Haiphong component.		
<b>RESULTS</b>	Construction management covered by Phase IV, on behalf of the client, SADCO, will ensure implementation on time and in accordance with the requirements of the contract documents.	Construction schedule adhered to, or prompt and satisfactory explanations given for deviations.	Construction reports, annual reports.	The WB/IDA-financed Haiphong Sewerage and Drainage project (IB) is stated and Water Supply Project (IA) are implemented as planned. Changes needed in the programmes during implementation are completed in an organized and appropriate manner.
		Quality of works conforms with required standards.	Construction reports.	
		Accurate current records maintained of all works.	Construction reports.	
		Accurate interim monthly payment certificates submitted promptly to Client.	Audit. Sample field checks.	
		Variations of works promptly identified and agreed with contractors.	Construction reports.	
		Decisions on claims submitted by the contractor (or against the contractor) given promptly to Client.	Audit report.	
		Final "as-built" drawings produced on time, and accurate.	Completion reports.	

ACTIVITIES	<p><b>Strengthening management of SADC Construction management</b></p> <p>Assume the duties of "the Engineer" as set out and specified in the contract documents</p>			
	<p>Provide such information as is necessary for the Contractors to set out the works and check that the setting out is correct;</p>			
	<p>Review the Contractors' work proposals, working drawings for permanent and temporary works, etc. to the extent required in the contracts, advise modifications where necessary and approve these proposals</p>			
	<p>Review the Contractors' work programs and, where necessary, request revisions of these to account the current status of the works and ensure adherence to the construction schedule</p>			
	<p>Review, approve and ensure adherence to the Contractors' quality assurance plans</p>			
	<p>Review and approve the sewer inspection reports and other inspection documentation prepared by the Contractor for contract C1A, review the detailed designs for sewer rehabilitation and replacement to be prepared by the said Contractor. Co-ordinate the submission of the Contractor's detailed design documents for the approval of the World Bank and the Vietnamese authorities. Liase with the Detailed Design Consultants on detailed design related matters.</p>			

		<b>INTERVENTION LOGIC CMS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>ACTIVITIES</b>		Agree with the Contractors on measurement for interim certificates and carry out the necessary measurements and calculations for such certificates			
		Make recommendations to the Client on the Contractors' claims for additional payments, extension of time and other matters, based on the Consultant's interpretation of Contract Documents, the relevant site conditions and the Contractor's detailed submissions			
		In the event of variations to the works being required, prepare the necessary documents, negotiate these with the Contractor(s) and the Client, and submit the agreed variation order(s) to the Client and the World Bank for approval as set out in the contract(s);			
		Through the inspectors of works and other site staff as may be required, supervise the day-to-day operations of the Contractors to ensure quality of workmanship and compliance with the contracts			
	Maintain detailed, daily site diaries, photographs and other documents concerning relevant events and activities; call and keep minutes of routine site meetings and other meetings between the parties to the contracts				

ACTIVITIES	<p>Specify type and frequency of test requirements for materials on site, test and inspect equipment (including shop inspections and witness tests at the Contractors' workshops in Vietnam or abroad) to be used or installed in the works prior to incorporation, test completed parts of the works for compliance with the contracts and generally ensure that the final structures and facilities are in accordance with the intent of the contracts</p>			
	<p>Set up and maintain correspondence and document storage and retrieval systems to record all relevant communications between the parties to the contracts, all measurement and quality control details and variations to the works as they occur</p>			
	<p>Supervise the keeping of records for, and preparation of as-built drawings and documents including the approval of the documents prepared by the Contractors, approve the manuals for operation and maintenance of the completed facilities and equipment to be supplied as set out in the contracts, advise on training of staff identified for the operation of the completed facilities</p>			
	<p>Prepare weekly site reports and monthly progress reports in a form acceptable to the Client</p>			
	<p>Prepare quarterly and annual progress reports to DIDC and Client in a form acceptable to DIDC and the Client. Prepare reports to Supervisory Board and other meetings between the Ministry of Foreign Affairs of Finland and Vietnamese competent authorities</p>			

	<b>INTERVENTION LOGIC CMS</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>SOURCES OF VERIFICATION</b>	<b>ASSUMPTIONS</b>
<b>ACTIVITIES</b>	<p>Prepare semi-annual progress reports for each contract in a form acceptable to WB/IDA and the Client. These reports shall include as the minimum details of the physical and financial status of each contract, details of delays and the budgetary effect of particular problems with suggested solutions. Assist the Client in preparation of the mid term report for each contract as set out in Schedule 1, sub-clause A.5 of the Project Agreement between WB/IDA and SDCos</p>			
	<p>Assist the Client to prepare, in a format acceptable to WB/IDA, the annual project implementation plans for the next calendar year</p>			
	<p>Carry out final inspections of the works, supervise the completion of outstanding work and remedying defects and recommend the issue of completion certificates</p>			
	<p>Check the Contractor's final accounts and certify them correct for payment</p>			
	<p>Prepare completion reports in a form acceptable to WB/IDA and the Client</p>			
	<p>Prepare a completion report to DIDC in an acceptable form</p>			
	<p>Advise the Client with respect to carrying out the works following the appeal to arbitration or litigation related to the works;</p>			

# ANNEX 3

## Foreign component details, Proposal

### SUMMARY OF TECHNICAL ASSISTANCE INPUTS, p-m

Year	2001	2002	2003	2004	Total p-m
<b>Foreign experts</b>					
Team Leader/Corp. Mgmt.	11	11	11	11	44
Financial Mgmt.	11	11	11	8	41
Sanitation	11	8	6	5	30
Community Participation	8	6	5	3	22
Planning Adviser	4	3	2	2	11
Utility Mgmt.	6.5	6.5	6.5	6.5	26
HRD	5	5	5	5	20
MIS	3.5	3	1.5	1.5	9.5
GIS	1	1	1	1	4
Pool	7.5	8.5	7	7	30
Totals	68.5	63	56	50	237.5
<b>Local experts</b>					
Team Leader/Corp. Mgmt.	0	0	0	0	0
Financial Mgmt.	4	6	6	7	23
Sanitation	0	0	0	0	0
Community Participation	11	11	11	11	44
Utility Mgmt.	1	1	1	1	4
HRD	0	0	0	0	0
MIS	3.5	4	4	4	15.5
GIS	4.5	4	4	4	16.5
Pool	13	14	14	14	55
Totals	37	40	40	41	158

### PROPOSED REVISED TECHNICAL ASSISTANCE FUNDING

Year	2001		2002		2003		2004		Total p-m		COST
Foreign/local inputs, p-m	Finn	VN	Finn	VN	Finn	VN	Finn	VN	Finn	VN	US\$ 000
Organization/Adviser	Assumed all-inclusive rates/month, US\$000								18	2	
<b>SADCO</b>									<b>133</b>	<b>74.5</b>	<b>2543</b>
Team Leader/Corp. Mgmt.	5	0	5	0	5	0	6	0	21	0	378
Financial Mgmt.	5	2	5	2	5	2	4	2	19	8	358
Sanitation	11	0	8	0	6	0	5	0	30	0	540
Community Participation	6	8	4	8	3	8	1	8	14	32	316
Planning Adviser	4	0	3	0	2	0	2	0	11	0	198
Utility Mgmt.	4	0.5	4	0.5	4	0.5	4	0.5	16	2	292
HRD	2	0	2	0	2	0	2	0	8	0	144
MIS	1.5	1.5	1.5	1.5	0.5	1.5	0.5	1.5	4	6	84



Final Version Annexes and Acronyms, 11 February 2000

GIS	0.5	2.5	0.5	2	0.5	2	0.5	2	2	8.5	53	
Pool	2	4	3	4	1.5	5	1.5	5	8	18	180	
<b>HPWSCO</b>										<b>64.5</b>	<b>43</b>	<b>1247</b>
Team Leader/Corp. Mgmt.	4	0	3.5	0	3	0	2	0	12.5	0	225	
Financial Mgmt.	3	2	3	2	3	2	2	2	11	8	214	
Community Participation	1	1	1	1	1	1	1	1	4	4	80	
Utility Mgmt.	1.5	0	1.5	0	1.5	0	1.5	0	6	0	108	
HRD	2	0	2	0	2	0	2	0	8	0	144	
MIS	1.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	3	6	66	
GIS	0.5	1	0.5	1	0.5	1	0.5	1	2	4	44	
Pool	4.5	5	4.5	6	4.5	5	4.5	5	18	21	366	
<b>URENCO</b>										<b>40</b>	<b>40.5</b>	<b>801</b>
Team Leader/Corp. Mgmt.	2	0	2.5	0	3	0	3	0	10.5	0	189	
Financial Mgmt.	3	0	3	2	3	2	2	3	11	7	212	
Sanitation	0	0	0	0	0	0	0	0	0	0	0	
Community Participation	1	2	1	2	1	2	1	2	4	8	88	
Utility Mgmt.	1	0.5	1	0.5	1	0.5	1	0.5	4	2	76	
HRD	1	0	1	0	1	0	1	0	4	0	72	
MIS	0.5	0.5	1	1	0.5	1	0.5	1	2.5	3.5	52	
GIS	0	1	0	1	0	1	0	1	0	4	8	
Pool	1	4	1	4	1	4	1	4	4	16	104	
<b>Training, minor expenditures</b>											<b>450</b>	
Computers and software											75	
Training											300	
Minor expenditures											75	
<b>Sub-total</b>											<b>5041</b>	
<b>Contingencies, 15%</b>											<b>756</b>	
<b>TOTAL</b>											<b>5797</b>	

Please, note that the figures given in this annex are indicative only!

## **ANNEX 4**

### **Hygiene promotion and sanitation improvements at the household level**

#### ***Introduction***

Sanitation improvements at the household level are part and parcel of improving environmental sanitation and thus people's living conditions. This annex compares technical and financial requirements involved in installation/upgrading sanitary facilities with household willingness and ability to pay. It then looks at the desirability and feasibility of a Revolving Fund. The major question this annex wants to answer is whether and under which conditions a financial mechanism, such as a Revolving Fund, can help increase coverage of proper and properly used sanitary facilities at the household level. The annex ends with a number of conclusions and recommendations.

#### ***Household sanitation in the project area***

The 10 Phuongs to be covered by the 1B project have a total of 22,000 households and some 90,200 inhabitants. A survey done in 1999 shows that out of the 86% of households having sanitary facilities, 82.6 % has a septic or semi-septic latrine, 1.9 % has a double-tank latrine, 0.4 % has a bucket latrine, 2.3 % has a Sulabh latrine and 12.7 % uses a simple latrine<sup>1</sup>. Whereas this shows that many households do have some form of excreta disposal facility, their technical design is such that the treatment a septic tank is to provide before discharge into a sewer, does not take place. A very rough estimate by the programme suggests that 50% of the households, which equals 11,000 households, in the 10 Phuongs need proper sanitation facilities. However, it is not clear what criteria have been used to determine whether a household is "in need" or not. Whereas this may be clear for households not having any facility or just having a bucket latrine, this is not clear for those having some sort of a septic or collection tank.

Sewers, meant to carry stormwater and sewage are often found blocked even though much of the solid waste is collected by sweepers sweeping secondary and main lanes. Sweepers rely upon inhabitants to deliver solid waste produced at the household level where the tertiary lane (the alley in front of people's houses) meets the secondary lane upon them ringing a bell. Still, quite a bit of solid waste can be seen in the tertiary lane, which causes the blockage.

Public health hazards, leading to diseases such as diarrhoea and other intestinal infections, resulting from these household conditions and people's behaviour are evident: virtually untreated sewage is being discharged into the river as a result of non-existent or

non-performing septic tanks. In the event of high tide and heavy rains, living areas get flooded leaving raw sewage floating around from open drains. In addition to this public latrines are in bad conditions and not kept clean.

### ***Technical necessities for improvement of household sanitation***

#### ***Sewage collection and treatment***

Since in the near future the construction of a waste water treatment plant is not foreseen, sewage by the individual households needs to be treated as much as possible before it is discharged into the sewer system. In the context of Haiphong technical activities needed to provide some form of treatment include the construction of latrines with septic tanks, rehabilitation of low standard latrines, construction of communal septic tanks, sanitary facilities at public places, connections of household facilities to the public sewer system. The costs involved for each household heavily depends on the technical requirements, which is to become clear after a detailed investigation.

In many cases bringing about improvements implies quite a burden for household members: floors will have to be opened to provide access to a septic tank that is to be improved, heavy equipment will have to be used to remove old, dried sludge, pit emptying hoses will have to be pulled through people's houses to access latrines that are usually build at the back of a compound.

From the technical and public health point of view sanitary improvements at the household level makes most sense if tertiary and larger sewers function properly and coverage is 100%. The reverse is also valid: once tertiary and other sewers have been cleaned and rehabilitated, discharge by not properly functioning household facilities will reduce the impact of these efforts. For a maximum impact on public health a 100% coverage with proper and properly used sanitary facilities is to be achieved. Equally important is the fact that people indicated to be willing to upgrade their sanitary situation, provided that the drainage system at the neighbourhood and Phuong level is also improved.

#### ***Removal of solid waste***

In addition to improving sanitary conditions, the management of solid waste needs improvement. At Phuong level solid waste collection as organised by URENCO does not seem to be the major problem. However, people discharging solid waste into drains at inappropriate times, kitchen wastes being discharged into the sewer system and uncontrolled discharge of construction materials are problems to be solved. This requires behavioural change of Phuong inhabitants through awareness campaigns and putting/keeping in place the necessary conditions for transformation of awareness into sanitary behaviour, such as sewer cleaning and continued waste collection.

## ***Financial and Socio-economic data relevant for upgrading of household sanitation through a revolving fund***

### ***Costs to the household for household sanitation***

The programme estimates the costs of a Septic Tank (a simple, one-compartment) and its connection to a tertiary drain to be US\$ 100 for materials (see attached list) and another US\$ 100 for labour, which equals a total of VND 2,800,000. SADCO however, indicated the costs to be VND 4,500,000. Detailed estimates as to how much is required for skilled and unskilled labour still need to be made. This will help determine the financial costs for those household wishing to carry out the unskilled labour themselves. Roughly estimating that half of the labour costs is for unskilled labour, a septic tank up to and including the connection to the tertiary drain costs US\$ 150 for those putting in their own labour, which equals VND 2,100,000. These costs do not include the expenses for the above ground level activities.

Depending on the actual presence and quality of existing facilities the actual costs per household will differ considerably. Also decisions with relation to the location of the septic tank and whether to have a private or a jointly owned septic tank will have an impact on the costs involved in upgrading.

### ***Monthly income***

According to a survey done in 1998, the average monthly household income was VND 1 289 803. It ranges from VND 534 000 (poor households), to VND 741 000 (under average households), to VND 1 103 000 (average households). A survey done in 1999 showed an average monthly per capita income of VND 262 700, which implies a monthly per capita income of less than VND 100 000 for the extremely poor, VND 100 000 to 150 000 for poor, VND 150 000 – 200 000 for the fair, between VND 200 000 and 300 000 for the rather well off and over VND 300 000 for the well-off people<sup>1</sup>. Monthly incomes calculated from the World Bank figures in its 1B appraisal report compare reasonably well to the figures in the 1999-survey.

Taking into account that terminology for classification of the households is not consistent and assuming that the household income can be derived from the per capita income by a simple multiplication by 4,1 (= average number of members in a household), it can be stated that the 1999 data show a decrease in the average income, but otherwise a good level of coherence.

According to the 1999 survey 2.3% of the Phuong population is classified to be extremely poor, 12.1 % to be poor, 14.1% to be fair, 40,9% to be rather well off and 30.5% to be well-off.

### ***Monthly expenditure and savings***

Figures on monthly expenditure differ and are not as comprehensive as for monthly income. The above mentioned study of 1999, indicates the average monthly household expenditure to be VND 940,369 and average per capita expenditure VND 237,700, which

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<sup>1</sup> Septage management and sanitation revolving fund in the city of Haiphong, July 1999. Soil and Water.

is approximately 90.5% of the average income. (A study carried out in 1998 estimates the average monthly household expenditure to be VND 1,029,803 against an average income of VND 1,289,803, which is approximately 80 % of the average monthly income<sup>2</sup>.) Monthly saving for a household with an average income of some VND 90,000. Details for calculation of savings of poor households are not available, but is assumed to be substantially lower

### ***The Revolving Fund as a financial mechanism to improve household sanitation***

Whereas through the 1B project the system of primary, secondary and the tertiary drains is upgraded, the installation or improvement of household facilities is considered to be the responsibility of the inhabitants, not only in terms of “getting it organised”, but also in terms of financing. Given the high cost of these facilities and their connection to a tertiary drain and given the low income of many households, the establishment of a Revolving Fund is proposed. This fund is to allow poorer segments of the society to access funds to finance the undertaking. Against a low interest rate and when fulfilling a number of other criteria, such as participation in a credit-savings group, people can take a loan. Often a revolving fund is established to stimulate people to start up income generating activities.

In the context of the 1B project, a revolving fund for improvement of sanitary facilities assumes the following:

- a willingness to take a loan for non-income generating activities;
- an ability to pay for principal payments, an interest and to take part in a savings scheme;
- the necessity of neighbourhood pressure for loan repayment.

Both the Haiphong Women’s Union and the World Bank have drafted a proposal for the use of a Revolving Fund to support those households wishing to construct/rehabilitate proper sanitary facilities, but that have a shortage of capital. The proposals differ slightly and at the moment (15-9-1999) an attempt is draft a proposal which combines the best of both.

### ***Proposal by the Haiphong Women’s Union***

The Haiphong Women’s Union (HPWU) is considered to be the most suitable organisation to manage a revolving fund. It proposes a loan amount of VND 2,000,000 – VND 2,500,000 for the construction/upgrading of a septic tank and its connection to the tertiary drain. Given the costs of a septic tank and its connection, i.e. VND 2,800,000, this amount assumes that those households in need for new facilities require an input of own funds or some 50% of the labour to be provided by the household members or an own capital investment of at least VND 300,000. In an attempt to make a loan affordable to poor household, the HPWU proposes an additional loan from of Revolving Fund of VNV 500,000 – VND 1,000,000 for income generating activities. The total loan amount is not to exceed VND 3,000,000. The interest rate is set at 0.5% a month. Through

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<sup>2</sup> The awareness and evaluation of customer and supplier on the present water supply service in Haiphong city, HPWSSP, February 1998

compulsory savings of VND 20,000/household/month an additional capital is formed, which is to be used as risk provision, for management costs and as a bonus fund. It proposes a loan period of two years and principal payment in six instalments of VND 500,000 or in more instalments of VND 150,000 – VND 200,000. Whereas group savings start as soon as the loan becomes effective, principal payment is to start after five months to allow households to accumulate capital for the first repayment. The savings can be drawn in the last month of the loan period and serve as a last principal repayment. In its proposal the Haiphong Women's Union states that 50% of the members of a loan group can take a loan at a time.

It can be assumed that poor households are in need of the maximum loan amount. Sanitary facilities are probably non-existent (so will need to be newly constructed) and extra income generation will be required. The financing system proposed by the Haiphong Women's Union implies that (for households having taken the maximum loan and having opted for the lowest monthly principal payment) after 5 months the minimum amount involved in participation in the loan scheme is VND 185,000 per month: VND 20,000 as compulsory savings, VND 150,000 for principal payment, VND 15,000 for payment of interest. Over time the amount will reduce slowly, since the amount to be paid as interest will go down as a result of principal payments. However, this will only have a very limited impact on the total amount to be paid. For families having taken an income generating loan, the income generated through this loan can be deducted from this to calculate how big the financial burden for these families will be. As indicated above, either capital investment or a labour input are required to supplement the loan amount to cover all the costs.

*Proposal by the Central Women's Union/World Bank*

The draft Revolving Fund proposal by the World Bank differs slightly from what the Haiphong Women's Union proposes. The World Bank (WB) proposes the maximum loan size not to exceed VND 2,000,000. This covers 70% of the total construction costs. Capital investment by the household is to be VND 800,000. However, if a household can put in half of the required labour only VND 100,000 for capital investment is required. Like the Women's Union it proposes a loan period of 2 years. The WB's propose interest rate is 0.5 – 0.8% per month. Participation in a credit-saving group is compulsory and monthly savings of VND 20,000 is required. Principal payment is VND 80,000 a month and at the end of the borrowing period savings can be drawn for the last principal payment. Group-savings can be borrowed by group-members who want a loan for income generating activities. In the World Bank proposal 1/3 of the saving and credit group members can take a loan simultaneously. The financing system proposed by the World Bank that after 6 months the amount involved in participation in the loan scheme is VND 115,000 per month for those who are in need for the full loan (probably the poor households who have to start from scratch): VND 20,000 compulsory savings, VND 80,000 principal payment, VND 15,000 interest (if 0.5% interest is opted for). Should a family opt for borrowing from the group savings to start income generating activities, the monthly amount involved increases. Over time the amount will reduce slowly, since the amount to be paid as interest will go down as a result of principal payments. However, this will only have a very small impact on the total amount to be paid. For families taking

an income generation loan, income from the income generating activities can be deducted from this to calculate how big the financial burden for these families will be. As indicated above, either capital investment or a labour input are required to supplement the loan amount to cover all the costs.

NB:

Costs involved in “upgrading only” are not available. Once they become available similar calculations can be made for those households not requiring the full loan amount.

### *The combined proposal*

A combination of both proposals is suggested and some of its features will be:

- Fund will allow loans for sanitation as well as income generation.
- Credit-saving groups will consist of people in need of a loan for sanitation and income generation and of people wanting a loan to upgrade or for income generation.
- Priority will be to those who need it for primary sanitation.

### *Can it help?*

As such the use of a Revolving Fund can be a good mechanism to help people install or upgrade their sanitary facilities. However, an assessment of its feasibility, taking the above information into account, is needed.

Taking a loan for something that does not create an income requires a high level of commitment from people and the loan involved to be affordable. After all, the loan will have to be repaid. Taking a loan will also result in the need to allow a large part of their house to be uprooted when floors have to be broken to secure access to an existing septic tank or to improve its connection to the tertiary sewer. This also requires commitment! A third element is to be taken into consideration when assessing the feasibility of a Revolving Fund: can septic tank construction and their connection to the tertiary drain, to be financed through the Revolving Fund, keep pace with cleaning and upgrading of the entire sewer system?

### Creating commitment

Although the survey quoted above revealed a high demand for improvement of household and environmental sanitation and a high level of willingness to pay, further research is needed to find out whether people fully realised the technical and financial implications the programme will have for them. Such a research can also provide the basis for the design of campaigns and participatory approaches to create commitment towards sanitation and to involve people in sanitation development in a way that goes beyond a mere financial involvement. As indicated a programme document <sup>3</sup> “Sanitation development approach focusing on people’s participation requires dynamic interaction with the community”. Embarking upon a participatory approaches therefore requires staff highly skilled to facilitate information sharing and decision-making processes at the household and Phuong level.

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<sup>3</sup> A practical attempt to initiate people’s participation in sanitation development in Haiphong, May 1999, Soil and Water.

### Affordability

Whereas a Revolving Fund loan could be affordability for people in the “well off”-category, all parties concerned, including the Women’s Union and the World Bank, expressed that such a loan will not be affordable for poor households. Figures drawn from the various survey reports show that monthly savings of a family with an average income is VND 90,000. Savings of a poor family can be assumed to be substantially lower. In its appraisal report for the 1B project the World Bank included an Affordability Analysis, which indicates that in the year 2000 a middle income household can spend 3.9% of its income on water supply and sanitation per months, which equals VND 35,000. For low income households this figure is 3.8%, equalling VND 20,900. Projections for 2004 are 4.8% (VND 46,900) and 4.5% (VND 30,100) respectively.

Whereas these affordability figures are meant to predict people’s ability to pay service charges that will increase if service levels go up, they are also useful to give an indication about people’s ability to repay a loan. It has been calculated that monthly repayment will for poor people will be VND 185,000 (minus income generated through the income generation loan) following the Haiphong Women’s Union Revolving Fund proposal and VND 115,000 (if an income generation loan is not taken). Figures showing how much income can be generated through a loan of VND 500,000 – VND 1,000,000 are required to complete the assessment of people’s affordability to take a loan. However, even without these figures it can be concluded that poor households will only be able to participate in the sanitation upgrading loan scheme if special measures are taken.

### Synchronisation of household level and sewer system upgrading

As indicated above a 100% coverage with sanitary facilities is to be achieved, both for maximum impact on public health and for effective use of investments put into cleaning and upgrading the sewer system. Efficient use of heavy equipment (for example for removing old sludge) and the need for keeping the sewer system clean once it has been upgraded call for synchronisation of household level and sewer system upgrading.

## ***Roles and responsibilities of the Women’s Union and SADCO***

### Women’s Union

The Women’s Union in Hai Phong seems to be the most experienced organisation and it has a wide network of staff, also at Phuong level. It is proposed to manage the Revolving Fund, whereby it will be responsible to the Revolving Fund Board.

In order to work towards synchronisation of household level and sewer system upgrading close collaboration is needed with SADCO.

### SADCO

Before and during construction SADCO is to ensure technical advice and the availability of skilled labour. After construction it is responsible for maintenance of the tertiary drain and emptying of the septic tanks. Whereas skilled labour during construction will have to be paid for from the loan amount, a financial mechanism for regular emptying of the septic tanks and maintenance of the tertiary drains people will have to be determined. The



most simple mechanism probably being to charge households through the monthly waste water bill. SADCO will not have enough capacity to offer all of these services and will have to rely on private entrepreneurs. SADCO should offer training to those entrepreneurs and thus create a pool of certified builders. SADCO should take the responsibility for planning and quality control. Its Phuong based staff member will have a major role to play in this.

## **Conclusions**

### *Financial options*

A few possible options seem to emerge for financing of household facilities:

- Self-financing without the help of a loan
- Self-financing with the help of a loan, with or without a income generation loan attached
- Self-financing with the help of a loan and a partial subsidy

### *Affordability of a loan*

Whereas willingness to take a loan through the Revolving Fund has been expressed, when looking at officially reported income levels, affordability is absent for poor and doubtful for the slightly better of households. Further investigation is required to find out more about unreported income and how really poor households can be supported when wanting to upgrade their sanitary facilities.

### *Information gaps*

Quite some information is still lacking, for example regarding the exact technical requirements and the possibilities and limitations of various technical solutions for private and communal facilities, costs for households requiring upgrading only, the feasibility of regularly emptying a septic tank which is at the back of a house, the impact of limited financial capacity on loan disbursement and coverage etc. If not dealt with during phase III, these information gaps will hamper the implementation of the 1B project and absorb quite some TA-capacity during phase IV, which is to be used otherwise.

### *Creating a demand and changing behaviour*

Much is still to be done to increase people's understanding about the relationships between health, nuisance, sanitary improvements, behaviour and service delivery, and to assist people in translating understanding into commitment and behavioural change.

## **Recommendations**

*Have action research done during phase III by an independent study team familiar with participatory ways of formulating research questions and research implementation.*

As indicated above, there are a number of gaps in technical, financial and social information available to further assess the feasibility (and hence its sustainability) of the Revolving Fund and to ensure an as smooth/efficient as possible implementation of the 1B project. Hence action research is required to facilitate planning and budgeting of an

integrated and synchronised package to improve environmental sanitation in each of the Phuongs. This research should provide information on:

- The state of sanitary facilities at household and institutional level and on the tertiary systems to get a feeling about the magnitude of the work to be undertaken if 100% coverage with septic tanks and a safe tertiary system is to be achieved;
- Precise costs involved in various level of improvements on the basis of which people can be well informed. This will allow them to calculate the necessary loan amount and the monthly payment obligations and to assess whether they can afford the loan.
- How much income can be generated through a loan of VND 500,000 – VND 1,000,000 and whether this will indeed have a substantial impact on loan affordability.
- Test tools for selection of households that are eligible for a loan during the first loan cycle.
- Possible (social) mechanisms that prevent bad debts.
- Possible ways of cross-subsidisation and involvement of People's Committee and Housing Companies to assist poor households.
- Options for income generation of low-income households through labour required by richer households and contractors implementing the project.
- How to determine key-areas for hygiene promotion and awareness raising and communication channels.
- Ways to synchronise work on secondary and primary sewers and the improvement of household level facilities and tertiary drains.
- The acceptability and management structures of public facilities.

It is suggested to have participatory tools used such as Community Mapping, wealth ranking, community action planning etc. for this research. This will increase the reliability of the information. The research should include piloting of activities and the research team should consist of a non-Vietnamese and a Vietnamese expert, who masters the implementation of a participatory approach and the art of facilitation. Technical expertise should be made available when research questions are to be formulated and for mid-term and final analysis of research results.

#### *Awareness building and behavioural change*

There is a need for public awareness on environmental sanitation. SADCO should become better known to the people. Key areas for behavioural change need to be determined. Before planning and designing any awareness raising activities, an overview needs to be prepared of such activities going that touch upon behaviour related to environmental sanitation. Some of the questions to be answered are: Which channels will be used for awareness building? What are behaviours to be achieved and methods to be used? What is being done with regards to hygiene promotion at the moment? What can be/is being done through schools? Having answers to these questions will help to be as effective as possible by improving existing rather than start new activities. It will also help ensure coherence with regards to how people are being approached and prevent people from being bombarded with too many messages about what they ought to do.

***Make a good inventory of private entrepreneurs that could be contracted by SADCo for assistance in building septic tanks and upgrading the tertiary system.***

Knowing that SADCo's main role during phase IV will be planning and quality control a good inventory of private entrepreneurs is required. A list of quality criteria will have to be developed. A system of certification needs to be developed as well as a training programme.

***During phase IV***

***Synchronisation***

Loan programme should be in Phuongs where rehabilitation of drains is taking place at the same time.

***Extra efforts to enable poor households to upgrade their sanitary facilities***

During phase IV the most feasible and desirable options (as identified during the phase III research) to support poor households need to be implemented.

***Apply participatory tools for household prioritisation and developing "control" mechanisms***

It is always advisable to have the selection of "poor households" done by the community, for example through a wealth ranking exercise. The phase III research will provide insight into the feasibility of the use of such tools.

***Prepare for scaling up after 1B***

It is also suggested to involve staff of Phuongs not included in the 1B project in the training activities timely, so the revolving fund can continue to function in the remainder of the Phuongs. After phase IV funds may no longer be available for this type of activity.

## ANNEX 5

### **Technical assistance personnel and their job descriptions**

#### **Team Leader/Corporate Mgmt. Adviser (44F:0L; 48:28:24<sup>1</sup>):**

Responsible (besides overall HPWSSP management and co-ordination) for helping the companies develop corporate strategies, business plans, appropriate organizational structures, out-sourcing strategies, etc. The contribution of this expert is continuous throughout the period, as needed. No local consultant input is envisaged.

- ◆ 5 p-m/yr. devoted to SADC0, increasing to 6 p-m in 2004, in preparation for another project.
- ◆ Support to WSCO decreasing from 4 p-m/yr. to 2 p-m/yr., as WSCO improves expertise and achieves necessary reorganization (failure to reorganize should be grounds for reducing support).
- ◆ Support to URENCO increasing slowly, as URENCO develops and identifies sources of funds (or receives allocated revenues) allowing it to expand operations.

#### **Financial Management Adviser (41F:23L; 42:30:28)**

Responsible for assisting the development of all aspects of the financial performance of the three companies, such as general financial planning and strategy development, development and application of cost accounting, application of MIS to financial management, introduction of improved accounting procedures, development and implementation of tariffs and cost recovery proposals, improving billing systems and receivables control, and, in the case of SADC0, for assisting with loan/grant mechanisms for household-level sanitation improvements. This expert has been phased out in the final year, on the assumption that local experts can handle issues likely to arise in the last months of Phase IV; this assumption may need to be reexamined if, for example, the 2A water project or the URENCO investment program are taking place at that time.

- ◆ 5 p-m/yr. devoted to SADC0 (4 p-m in final year) to launch financial management, assist in introduction of wastewater fees, development of cost centres and basis for making out-sourcing decisions, assist WU in revolving fund operations, etc.. Supported by 2 p-m/yr. local accounting expert, to introduce new accounting system, assist with tracking of revenues collected by WSCO, and assist PMU in tracking 1B Project.
- ◆ 3 p-m/yr. (2 p-m in final year) in support of WSCO's financial management, cost accounting and accounting, with 2 p-m/yr. of local expertise (mainly on accounting and billing). This TA should be contingent upon WSCO hiring appropriate financial management staff, probably linked to an institutional restructuring (e.g., creation of a Deputy Director for Commercial Operations).
- ◆ 3 p-m/yr. (2 p-m in final year) in support of URENCO, with 2 p-m of local expertise (mainly on accounting and billing) in Years 2 to 4. This is aimed at beginning to create financial management and accounting capability in the company, so that it is better able to receive and manage external investments.

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<sup>1</sup> The figures shown are (a) the total p-m of foreign (F) and local (L) experts; (b) percentages of total p-m allocated to SADC0:WSCO:URENCO.

### **Community Participation Adviser (22F:44L; 70:9:21)**

These are two of the key positions throughout Phase IV. It is assumed that one foreign expert and one Vietnamese expert will be provided full-time. Their functions (XREF) will include assisting and training customer service units in each of the companies; helping the design and conduct of awareness campaigns (not only to encourage more responsible or more healthy behaviour, but also in relation to proposed charges for service and facilities such as septic tank concessionary financing that may be available to needy applicants); and helping SADCO to ensure the social feasibility of the phuong upgrading program.

- ◆ 62 p-m will be provided to SADCO, divided equally between the foreign and the Vietnamese advisers. Initially the emphasis will be primarily on gaining a complete understanding of the factors affecting the design and implementation of the phuong upgrading program, and delivering public awareness programs dealing with what is to be undertaken under the 1B Project and how wastewater charges will be introduced to finance the improved services. As time proceeds, the emphasis will shift to ensuring socially feasible basic designs and implementation procedures for Contract B of the 1B Project, and finally support will be given to the implementation process and the rolling program of design and implementation.
- ◆ 8 p-m will be provided to WSCO, again divided equally between the foreign and the Vietnamese advisers. This will be used to support the customer relations aspects of the phuong-based management of water distribution and billing.
- ◆ 18 p-m will be provided to URENCO, again divided equally between the foreign and the Vietnamese advisers. One major intention behind this level of support is to encourage more responsible public behaviour in respect of MSW disposal: since Phase IV does not include major support to URENCO, there is a risk that irresponsible dumping of MSW clogs drains and channels, and jeopardizes the improvements undertaken under the 1B Project. This campaign will be city-wide, but in addition more intensive efforts will be needed in the phuongs in which the sewerage and drainage are being upgraded, to show the residents the benefits of a clean environment and so encourage sustainability.

### **Planning Adviser (11F:0L; 100:0:0)**

An expatriate Planning Adviser is needed to help SADCO to develop the competence necessary to manage planning and operational integration of the technical and social aspects of the 1B Project as well as its annual maintenance program, which now urgently needs to be put on a systematic basis (whether direct labour or out-sourced) so that there will not be a repetition of past neglect. This adviser also needs to be able to assist SADCO in developing plans in a format that is acceptable to TUPWS and HPPC, that is, one which translates broad objectives and activities into the types of detail that are used in the city budget allocation process.

### **Utility Management Specialist (26F:4L; 60:20:20)**

Although each of the companies is providing technical services, many of their problems relate more to management of these services rather than to the technology itself (and the remainder of Phase III offers the opportunity to resolve many of the remaining technical issues). Therefore periodic support from an experienced utility manager (who must have had actual operational responsibilities) is essential in order to introduce better methods of planning and implementing service delivery. This expertise is unlikely to be available in Vietnam, although it may be available from other countries in the region. It is possible that this input could be divided between two experts, depending on the individuals' experience and relevance to the companies' particular problems.

In the estimates a small allowance has been made for employing a local adviser; the intention is not so much that this person should advise three companies, but rather that he or she should help the foreign expert understand the complexities of organizing utility operations in Vietnam (this approach may also be worth considering on some other subjects).

- ◆ 4.5 p-m/yr. are provided to SADCO. Initially much of the focus should be on assisting SADCO to provide services for the areas which will not be improved under the 1B Project, since SADCO has to devise a affordable method of serving these areas until such time as follow-up improvement projects can be funded. Then, as 1B is implemented, it will be essential to introduce effective systems for maintaining the rehabilitated and improved system in good condition.
- ◆ 1.5 p-m/yr. are provided to WSCO. This will be used principally to help extend and improve the phuong management system.
- ◆ 1.5 p-m/yr. has been allowed for support to URENCO. This company is facing the most difficult managerial task of all, since it will not receive investment support in order to upgrade its vehicle fleet or to expand the Trang Cat landfill. Assistance in devising the best ways of utilizing its limited resources would therefore be most valuable.

#### **HRD Adviser (20F:0L; 40:40:20)**

Each of the companies needs to prepare, implement and evaluate a sound annual training plan for development of its staff. Assistance will be required in training needs assessments, identifying suitable training facilities, and evaluation of the effectiveness of the training (in terms not just of the transfer of knowledge and skills to the individual but, more importantly, how it results in operational benefits to the company).

HRD covers all aspects of ensuring that the companies have the best possible staff. It therefore includes many aspects besides training, such as the design of appropriate compensation packages, recruitment procedures, career development, and decisions on outsourcing of function. HRD inputs into the companies' annual corporate plans will therefore become progressively more important, as the companies develop greater autonomy and operate more as commercial entities.

This expertise is probably not readily available in Vietnam at present, but some regional experts are available.

- ◆ 2 p-m/yr. has been provided to SADCO, initially to focus on developing and implementing a sound overall approach to training, and subsequently to expand to pay greater attention to broader HRD issues.
- ◆ 2 p-m/yr. has been provided to WSCO, with the same general objectives.
- ◆ 1 p-m/yr. has been provided to URENCO, in the expectation that its needs in the near future will primarily be training, and that its limited resources and autonomy will hinder its ability to undertake broader HRD actions during Phase IV.

#### **Sanitary Engineer (30F, 0L; 100:0:0)**

It is proposed that longer-term TA from a sanitary engineer should only be provided to SADCO during Phase IV. By the commencement of Phase IV, WSCO should have resolved most of its major technical problems, although a number of minor ones will still require the assistance of short-term experts (see "Pool of experts", below). URENCO, in contrast, if it is still without a source of investment funding, will be limited to continuing to use its existing limited assets as best it can, and this will be a matter more of ensuring cost-effective operations than of resolving technical issues. Even SADCO should have a much clearer

picture of the technical options to be pursued, if the action research proposed for the remainder of Phase III has produced conclusive results.

Allowance has therefore been made only for one sanitary engineer, part time, nominally allocated to SADCO, although experience may indicate that small amounts of this time will be required to support the other companies, the design of Contract B, etc..

#### **MIS Specialist (9.5F:15,5L; 35:37:28)**

As infrastructure PSEs, each of the three companies probably has very similar MIS needs, responding to the management requirements of customer-oriented organizations moving gradually towards commercial operations. However, WSCO is most advanced in this process, while URENCO is only just beginning. The assumed timing of inputs is adjusted accordingly. It is also assumed that much of the TA, after initial definition of requirements, will be provided by local experts. This may also be a case where the foreign expert could be drawn from one of the utility companies in the region, or from a regional consulting firm.

- ◆ A total of 8.5 p-m devoted to SADCO divided 3 p-m foreign experts and 5.5 p-m local experts, and with greatest input in Year 1.
- ◆ A total of 9 p-m devoted to WSCO divided 3 p-m foreign experts and 6 p-m local experts, and with greatest input in Year 1.
- ◆ A total of 7 p-m devoted to URENCO divided 2.5 p-m foreign experts and 4.5 p-m local experts, with only exploratory work in Year 1, and greater input starting Year 2.

#### **GIS Specialist (4F:16,5L; 48:27:25)**

The three companies need to have GIS systems that are compatible with each other and with the digitized base maps of Haiphong that have already been developed with HWSSP assistance. The priority need is to ensure that WSCO and SADCO records are compatible, because WSCO may be collecting wastewater charges on behalf of SADCO (and so the WSCO consumer information base needs to be compatible with, and transferred to, SADCO's records. SADCO also needs to have its GIS system fully operational before the commencement of Contract A of the 1B Project, so that the results of the investigations and evaluations can be recorded there. At a later stage, SADCO will need to utilize its GIS for recording the upgrading and rehabilitation works under Contract C, for managing the rehabilitation, installation and emptying of septic tanks, and possibly for tracking any financial assistance given to low-income households to enable them to benefit from the 1B Project improvements. The needs for URENCO are not so pressing, as they are not driven by the schedule for the 1B Project, but nevertheless early introduction of a common customer database would assist in fee collection and in the analysis of collection patterns and problems.

- ◆ 12 p-m is assumed to be provided to SADCO, divided 4 p-m of a foreign expert and 8 p-m of a local expert. As outlined above, these inputs are spread equally across the 4 years, although the specific topics to be covered will change.
- ◆ 7 p-m are assumed to be provided to WSCO, divided 3 p-m of a foreign expert and 4 p-m of a local expert. These inputs will be rather more intense in the early years, when ensuring consistency with the other systems will be the key issue to be addressed.
- ◆ 6.5 p-m are assumed to be provided to URENCO, divided 2.5 p-m of a foreign expert and 4 p-m of a local expert. Again, the inputs will be rather more intense in the first two years; after that, unless URENCO succeeds in acquiring investment funds, the GIS will probably be used mainly for billing and collection records and for operations

planning, and limited local inputs to keep it responsive to URENCO's needs should be sufficient.

**Pool of experts (30F,55L; 27:60:13)**

**SADCO (10F):** Most of the TA required for SADCO is likely to be long-term, during this period of intensive institution-building. However, it is likely that a variety of short-term inputs will also be required. Examples of specific topics that might arise include support on: drafting appropriate byelaws and regulations; environmental monitoring; improved O&M practices for mechanical plant; and development of items of mechanical equipment for servicing of septic tanks and lane sewers.

**WSCO (16F, 4L):** As would be expected, WSCO has the greatest need for various short-term inputs to resolve specific technical issues; the other two companies require longer-term technical support. In preparing the estimates, specific allowance has been made for experts inputs on: non-revenue water reduction (4 p-m F); improved O&M practices (4 p-m F); telemetry system upgrading (2 p-m F; 2 p-m L); water treatment plant operation and control (2 p-m F); and network modelling (2 p-m F; 2 p-m L). A small addition (1 p-m F, 1 p-m L/yr.) has been made for contingencies.

**URENCO (4F):** There is limited scope for short-term technical assistance to URENCO until such time as it has secured funding to upgrade its vehicle fleet (or out-sourced the operation), extend the Trang Cat landfill and introduce better landfilling practices, etc.. However, a contingency allowance has been made for inputs such as advice on leachate control, upgrading landfill operations, improving operation of handcarts and transfer containers, etc..



## ANNEX 6

### CONSTRUCTION MANAGEMENT

The HPWSSP, Phase IV preparation mission was informed that it has proved to be impossible, in the course of the 1B Project design, to obtain an accurate picture of the condition and potential capacity of the sewerage and drainage network. The extent of silting is too great to permit proper inspection, and so the design consultants have been able to make only an approximate estimate of the lengths of pipe that can be rehabilitated, those that should be replaced, and those that need to be increased in size. To respond to this situation, civil works implementation has been split between 3 contracts (in addition there will be one contract for procurement of vehicles and equipment):

- ◆ Contract A, implemented between July 2001 and April 2002, covers mainly the cleaning and inspection of existing main sewers and phuong sewers, together with construction of various facilities at the Trang Cat landfill, in particular provision for handling the dredged sludge and septage. The estimated base cost is US\$3.0 million.
- ◆ Contract B, implemented between November 2002 and May 2004, covers rehabilitation or construction of some major combined sewers, construction of some collector sewers and pumping stations, and rehabilitation of phuong sewers. The estimated base cost is US\$10.0 million.
- ◆ Contract C, implemented from July 2001 to January 2004, mainly covers the rehabilitation of the main drainage channels, the lakes in the city, and the tidal gates. The estimated base cost is US\$8.5 million.

Assistance to SADC in construction management of these three contracts is essential, since SADC has no experience of contracts of this magnitude, or of working with international contracting companies.

The May 1999 Design Report estimates that the inputs required for construction management of these 3 contracts will amount to a total of 98 p-m of foreign consultants and 112 p-m of local consultants. These estimates appear somewhat low in comparison to those prepared by the World Bank, and this was confirmed during the mission's discussions with the design consultants. Given the dispersed nature of the works, the number of small operations that are likely to be taking place at any one time, and the necessity to maintain accurate records not only for the purposes of measurement and payment but also as a basis for updating SADC's records of the system, the mission believes that a much higher local component is justified. This is reflected in Table below.

## CONSTRUCTION MANAGEMENT

Assumed monthly rates, US\$000 (all inclusive)

Expats.	18
Local	2

	p-m Cost, US\$000		
<b>Expatriate staff</b>			
Team leader	54	972	
Construction supervisor	48	864	
Quantity surveyor	10	180	
Contract specialist	2	36	
Sub-total	114	2052	<b>US\$2.1 million</b>
<b>Local staff</b>			
Assistant engineer	50	100	
Sub-contract			
Team leader	50	100	
Assistant engineers:			
Contract A (2)	25	50	
Contract B (2)	50	100	
Contract C (2)	34	68	
Quantity surveyors (4)	200	400	
Sub-total	409	818	<b>US\$ 0.8 million</b>
<b>Component total</b>		<b>2984</b>	
	Say		<b>US\$ 3.0 million</b>

Accordingly, the base cost of this component is estimated as US\$ 3.0 million (US\$2.1 million foreign costs and US\$0.8million local costs). At 14 per cent of the cost of the three contracts, this cost may appear high; however, the mission considers it appropriate, because of the extensive small-scale operations involved.

The mission was informed by SADCO that technical assistance in the preparation of bidding documents, prequalification of bidders, invitations to bid, bid evaluation, and award of contracts is already covered under the 1B Design Project, and need not be covered under HWSSP Phase IV assistance<sup>1</sup>. This appears to be true for Contracts A and C, but there is some doubt about these services in connection with Contract B.

<sup>1</sup> The various documents provided to the mission are ambiguous about whether these activities are covered under the 1B Design contract or not; even the May 1999 Preliminary Design Report shows procurement activities commencing in June 1999 as forming part of the Construction Management

There is an interval between Contracts A and B, from April to November 2002, when no work is being carried out on the sewer network (although it continues on Contract C, on the downstream elements of the system). This is to allow time for the findings about the network condition, as a result of the cleaning and inspection under Contract A, to be reflected in the specifications and scope of work included in the Contract B bidding documents, and for bidding and award of Contract B.

It is the mission's understanding that the preparatory work for Contract B to be undertaken during this interval (revision of designs, estimates and scope of work; preparation of bidding documents; prequalification of tenderers; bidding; bid evaluation; and contract award) is not included, or only partially included, under the existing Design contract, and that this gap has arisen because of changes in the way the 1B Project has been divided between contracts, the contracts themselves have been scheduled, etc.. The question therefore arises: how should this work be funded?

It would **not**, in the opinion of the mission, be appropriate to include this design and bidding work in the construction management contract. To do so would break the principle that the construction management consultant should not have been directly involved in the design process. Also, because the construction management consultant should also be independent of the client, it would preclude SADC engineers from participating in the design and modelling of the improvements, thus losing a valuable training opportunity.

It appears more appropriate to include it as an extension of the work covered under the Design contract, since the design of the immediate improvements under Contract B requires the detailed knowledge of system performance, modelling techniques, cost-benefit analysis, etc., which has already been developed by the design team. There may be some staff scheduling problems (clearly, some time will elapse between the award of Contracts A and C and the availability of data on which Contract B can begin to be developed), and these need to be addressed by the design team manager.

It is important to note that the design for Contract B must take full account not only of the technical findings of Contract A but also of the social aspects of household-level improvements (ANNEX 5). While the upgrading and replacement of the primary and secondary drainage networks is essentially a technical exercise, the nature and timing of the work on the tertiary network has to reflect factors such as the types of technology that are acceptable, whether facilities are provided for each individual household or are shared, households' ability and willingness to pay, the support mechanisms available to those without adequate financial resources, and the feasibility and cost-effectiveness of improving entire sub-areas at a time vs. household by household. **Social feasibility is a key element in the Contract B design.**

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Consultancy (perhaps because it assumed that construction management would not be included in the package supported by FINNIDA, and so could start on a different timetable than that of Phase IV).

This basic truth needs also to be included in the terms of reference for the construction management consultant for Contract B: the contractor's proposed method of implementation must correspond to the proposals for implementing household level improvements, and must allow sufficient flexibility to accommodate unavoidable on-site adjustments.

Equally, to avoid excessive well-justified claims for additional payment by the Contract B contractor, those responsible for household level improvements and the septic tank upgrading program will have to produce fully-detailed schedules of planned operations well in advance, and adhere to them. More thought needs to be given to the coordination of activities between SADC, HPWSSP IV, and the construction management consultant in order to ensure smooth implementation. This is another area in which piloting of upgrading during the remainder of Phase III (ANNEX 5 and Chapter 8) could contribute valuable insights into possible difficulties during full-scale implementation, and potential solutions.

The construction management consultant should be independent of the client. This component will therefore not present any opportunities for capacity-building in SADC. However, the extensive involvement of local professionals will result in considerable transfer of knowledge and skills in managing difficult contracts, of a sort that are likely to be very relevant to many towns and cities in Vietnam.

Sadco has informed SADC that technical assistance in the preparation of bidding documents, prequalification of bidders, invitations to bid, bid evaluation, and award of contracts is already covered under the 1B Design Project, and need not be covered under HPWSSP Phase IV assistance<sup>2</sup>. This appears to be true for Contracts A and C, but there is some doubt about these services in connection with Contract B.

There is an interval between Contracts A and B, from April to November 2002, when no work is being carried out on the sewer network (although it continues on Contract C, on the downstream elements of the system). This is to allow time for the findings about the network condition, as a result of the cleaning and inspection under Contract A, to be reflected in the specifications and scope of work included in the Contract B bidding documents, and for bidding and award of Contract B.

It is understood that the preparatory work for Contract B will be undertaken during this interval. This, however, (revision of designs, estimates and scope of work; preparation of bidding documents; prequalification of tenderers; bidding; bid evaluation; and contract award) is not included, or only partially included, under the existing Design contract, and this gap has arisen because of changes in the way the 1B Project has been divided between contracts, the contracts themselves have been scheduled, etc.. The question therefore arises: How should this work be funded?

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<sup>2</sup> The various documents provided to the mission are ambiguous about whether these activities are covered under the 1B Design contract or not; even the May 1999 Preliminary Design Report shows procurement activities commencing in June 1999 as forming part of the Construction Management Consultancy (perhaps because it assumed that construction management would not be included in the package supported by FINNIDA, and so could start on a different timetable than that of Phase IV).

It would not be appropriate to include this design and bidding work in the construction management contract. To do so would break the principle that the construction management consultant should not have been directly involved in the design process. Also, because the construction management consultant should also be independent of the client, it would preclude SADC0 engineers from participating in the design and modelling of the improvements, thus losing a valuable training opportunity.

It appears more appropriate to include it as an extension of the work covered under the Design contract, since the design of the immediate improvements under Contract B requires the detailed knowledge of system performance, modeling techniques, cost-benefit analysis, etc., which has already been developed by the design team. There may be some staff scheduling problems (clearly, some time will elapse between the award of Contracts A and C and the availability of data on which Contract B can begin to be developed), and these need to be addressed by the design team manager.

It is important to note that the design for Contract B must take full account not only of the technical findings of Contract A but also of the social aspects of household-level improvements. While the upgrading and replacement of the primary and secondary drainage networks is essentially a technical exercise, the nature and timing of the work on the tertiary network has to reflect factors such as the types of technology that are acceptable, whether facilities are provided for each individual household or are shared, households' ability and willingness to pay, the support mechanisms available to those without adequate financial resources, and the feasibility and cost-effectiveness of improving entire sub-areas at a time vs. household by household. Social feasibility is a key element in the Contract B design.

This basic truth needs also to be included in the terms of reference for the construction management consultant for Contract B: the contractor's proposed method of implementation must correspond to the proposals for implementing household level improvements, and must allow sufficient flexibility to accommodate unavoidable on-site adjustments.

Equally, to avoid excessive well-justified claims for additional payment by the Contract B contractor, those responsible for household level improvements and the septic tank upgrading program will have to produce fully-detailed schedules of planned operations well in advance, and adhere to them. More thought needs to be given to the co-ordination of activities between SADC0, HPWSSP IV, and the construction management consultant in order to ensure smooth implementation. This is another area in which piloting of upgrading during the remainder of Phase III could contribute valuable insights into possible difficulties during full-scale implementation, and potential solutions.

## ANNEX 7

### **Persons met during the mission**

Mr. Juha Puromies, Ambassador of Finland, Hanoi  
Ms. Hilikka Talsio, Counsellor, Embassy of Finland, Hanoi

Mr. Nguyen Cong Thanh, Country Program Coordinator, WB, Hanoi  
Mr. Bui Dinh Khoa, Deputy Director, Dept. for Architecture & Urban-Rural Planning & Public works management, MOC  
Ms. Hoang Thi Hoa, Health Education and Community Participation Specialist, UNDP/WB  
Mr. Nguyen Thi Minh Puong, Senior officer, Int. Cooperation Department, MOC  
Mr. Doan Tho Nam, Deputy Director general, Dept. of Foreign Economic Relations, MPI

Mr. Nguyen Ba Can, Director of SADCO, Hanoi  
Mr. Vu Bang-Doan, Head of Network Operation Department, WSCO  
Mr. Nguyen Canh Giap, Head of Planning Department, SADCO  
Mr. Trinh Dac Te, Deputy Director, TUPWS  
Mr. Pham Dinh Thuy, Secretary, PC  
Mrs. Nguyen Chuy Hang, Interpreter, SADCO  
Mr. Dan Duc Hiep, Deputy Director, DPI  
Mr. Vu Dung, Deputy Head of Network Operation Department, WSCO  
Mr. Do Hoc, Resettlement expert, Project Management Unit, SADCO  
Mr. Vu Hong Duong, Head of Technical Department, WSCO  
Mr. Nguyen Huu Bau, Deputy Head of External aid and loan management Department, DPI  
Mr. Nguyen Huy Am Tien, DPI  
Mr. Nguyen Manh Cuong, Director, URENCO  
Mr. Nguyen Manh Cuong, Head of ODA & Foreign Loan Department, DPI  
Mr. Vu Manh Hoa, Head of Customer Service Department, WSCO  
Mr. Hoang Ngoc Tuan, Deputy Director, PC  
Mr. Le Ngoc Tru, Deputy Director of Project Management Unit, SADCO  
Ms. Nguyet, Chairwoman of Phuong's WU  
Mr. Vu Phong, Deputy Director, WSCO  
Mr. Nguyen Quang Hwan, Programme Coordinator, WSCO  
Mr. Nguyen Tat Tao, Director, TUPWS  
Mr. Thang, Representative of SADCO  
Ms. Thanh, Vice-Chairwoman of Trai Chui Phuong's Committee  
Mrs. Le Thi Cuc, Head of Administration Council  
Mrs. Dao Thi Hoi, Vice Chairwoman, WU  
Mr. Nguyen Thi Hong, Deputy Director, URENCO  
Ms. Bui Thi Hue, Chief Accountant, Project Management Unit, SADCO  
Mrs. Le Thi Hue, Chief clerk  
Mrs. Nguyen Thi Kim Luong, Head of Accounting Department, WSCO  
Mrs. Pham Thi Lam Tuong, Head of Laboratory, WSCO  
Mrs. Le Thi Mai, Director of Vocational center  
Mrs. Nguyen Thi Minh, Interpreter of HPWSSP  
Mrs. Nguyen Thi Minh Ly, Deputy Director, Project Management Unit, SADCO  
Mrs. Pham Thi Ngam, Chairwoman, WU  
Mrs. Nguyen Thi Ngoc Thoa, Interpreter of SADCO  
Mrs. Le Thi Nguyet, Head of Personnel Department, WSCO  
Ms. Tran Thi Oanh, Deputy Director, HPSSP  
Mrs. Duong Thi Thanh, Representative of DFP  
Mrs. Nguyen Thi Thuy, Head of Propaganda Council  
Mrs. Dinh Thi Vi, Deputy Head of Comprehensive Department

Ms. Nguyen Thu Huyen, Accountant, Project Management Unit, SADCO  
Mrs. Thuy, Representative of SADCO  
Mr. Do Trong Dat, Deputy Director, SADCO  
Mr. Bui Van Chung, Foreign Affairs Office  
Mr. Luu Van Hao, Head of Planning Department  
Mr. Nguyen Van Ly, Director of Health Service  
Mr. Vu Van Phong, Head of Technical Department, URENCO  
Mr. Bui Van Thuan, Planning Department, TUPWS  
Mr. Nguyen Van Thuan, Vice Chairman, PC  
Mr. Nguyen Van Tuong, Deputy Head of Planning Department, TUPWS  
Mr. Dao Viet Dac, Director, DOSTE  
Mr. Pham Vu Cau, Director, DPI  
Mr. Dao Xuan Chenh, Head of Personnel Administration Department, SADCO  
Mr. Dam Xuan Luy, Director, WSCO

Vice Chairman, PC, Cat Ba Island  
President, WU, Cat Ba Island  
Mr. Pham Tri Tue, Vice Chairman of PC, Cathai Distr.

Soil and Water Ltd.

- Mr. Seppo Sipila, Team Leader, Haiphong Water Supply and Sanitation Programme
- Mr. Antti Nykanen, Resident Manager, Vietnam
- Mrs. Helena Ahola, Senior Environmental Expert, Water Supply and Sanitation
- Mr. Ken Kociba, Project Engineer, Water Supply and Sanitation

## Abbreviations and Acronyms

B	- billion
CA	- Construction management adviser
CMA	- Corporate management adviser
CPA	- Community participation adviser
DIDC	- Department for International Development Cooperation (formerly FINNIDA)
DOSTE	- Department of Science, Technology and Environment
DPI	- Department of Planning and Investment
ESA	- External Support Agency
FMA	- Financial management adviser
FIM	- Finnish markka
GIS	- Geographic information system
GOF	- Government of Finland
GOV	- Government of Vietnam
GPS	- Global positioning system
HH	- Household
HP	- Haiphong
HPPC	- Haiphong People's Committee
HPWSSP	- Haiphong water supply and sanitation programme
HRD	- Human resources development
IDA	- International Development Association
JFG	- Japanese Government Fund
JICA	- Japan International Cooperation Agency
M	- Million
MEIP	- Metropolitan Environmental Improvement Program (of WB)
MIS	- Management information system
MOC	- Ministry of Construction of Vietnam
MOSTE	- Ministry of Science, Technology and Environment of Vietnam
MMI	- Ministry of Mines and Industry of Vietnam
MOWR	- Ministry of Water Resources of Vietnam
MPI	- Ministry of Planning and Investments of Vietnam
MSW	- Municipal Solid Waste
NA	- Network Adviser
NGO	- Non-governmental Organisation
NWR	- Non-revenue water / unaccounted for water
O&M	- Operation and Maintenance
PD	- Project document
Phuong	- City ward (size varies; approximately 2,200 households, or about 10,000 people, on average in the 1B Project <i>phuong</i> s)
PMU	- Project Management Unit (of Haiphong SADCO, unless specified otherwise)
PSE	- Public Service Enterprises
RF	- Revolving Fund
SADCO	- Haiphong Sewerage and Drainage Company Company (of Haiphong, unless specified otherwise)
SANDEC	- Department of Sanitation for Developing Countries, Swiss Federal Institute for Environmental Science & Technology
UNDP	- United Nations Development Programme



Final Version Annexes and Acronyms, 11 February 2000

USD	- United States Dollar
TA	- Technical assistance
To	- Sub-division of a <i>phuong</i> , typically around 20 households
TOR	- Terms of Reference
TUPWS	- Haiphong Transport and Urban Public Works Services
URENCO	- Haiphong Urban Environment Company
VND	- Vietnamese Dong
WB	- the World Bank
WSCO	- Water Supply Company (of Haiphong, unless specified otherwise)
WU	- Womens Union
WWA	- Water works adviser
1B Project	Haiphong component of the World Bank-assisted Three Cities Sanitation Project
Contract A	1B Project contract for cleaning and evaluating the sewerage and drainage system in Haiphong
Contract B	1B Project contract for rehabilitating and extending the sewerage and drainage system in Haiphong