Annex F: Vietnam Case Study

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OVERVIEW OF VIETNAM CASE STUDY (THE THREE CITIES SANITATION PROJECT)

Key facts	
Project name	Three Cities Sanitation project – Sanitation Revolving Fund component
Project objectives	Provide loans to low-income households to help them construct or improve sanitation facilities (both on-site and with sewer connections)
Public financiers	World Bank, Government of Australia, Government of Finland, Government of Denmark
Scale	193,670 people served in peri-urban areas in three regions
Time frame	Program years: 2001 to date / Study period: 2001-2004
Level of service	Mostly septic tanks (also composting/urine-diverting latrines and sewer connections)
Summary of financing approach	
Software support	• Software support for sanitation promotion and hygiene education • Software mark-up = 10% of total costs of sanitation solution
Hardware subsidies	• Subsidized interest rates on loans for hardware construction • Hardware subsidy: US$6 per household (3% of hardware costs) • Hardware subsidies = 30% of public funds
Access to credit	• Facilitated access to credit via Sanitation Revolving Funds is the program's core
Summary evaluation	
Impact on sustainable access	• Contributed to increasing coverage in target area by between 13% and 21% • All facilities appeared to be working well five years down the line
Costs	• Average hardware costs: US$197 (30% of lowest quintile income) • Operating costs: US$30 per year (6.5% of lowest quintile income):
Effectiveness in the use of public funds	• High leverage ratio: 20 • High "increased access/ public funding": 117 latrines built / US$1,000 public funds
Poverty targeting	• People in targeted areas have no sewer connection and are predominantly poor. • Savings and Credit group leader plays an important role in selecting group members who are eligible for a loan.
Financial sustainability	• Public funds = 7% of total costs of sanitation adoption (high sustainability)
Scalability	• Scaling-up to cover the remaining uncovered population is achievable. • Approach already scaled up through World Bank and government-led projects.

OVERVIEW OF VIETNAM CASE STUDY (THE THREE CITIES SANITATION PROJECT) CONTINUED

Some lessons learned	
What worked?	• The revolving fund proved highly sustainable, as the funds were revolved several times before being transferred back to the municipalities to allocate further. • The Women's Union, a pervasive organization throughout the country with experience in microfinance, managed the scheme initiated by the local utilities. • Lending procedures were attractive to borrowers, and the loans worked as a catalyst for the households to find additional financing and invest. • The creation of Savings and Credit groups was seen as critical to ensure repayment of the loans and regular saving contributions.
What did not work so well?	• The solutions built represent a high proportion of poor households' income and are not affordable to the poorest, who were excluded from the scheme.

F.1 Overview of the financing approach

A Sanitation Revolving Fund (SRF) component was incorporated in the broader Three Cities Sanitation Project in Vietnam to provide loans to low-income households for building on-site sanitation facilities. Working capital for the revolving funds was provided by the World Bank, the Government of Australia, the Government of Finland and the Government of Denmark for three sub-projects in Danang City, Haiphong City and Quang Ninh Province (Halong City and Campha Town). The program benefited almost 200,000 people over the course of seven years. The average hardware costs of the sanitation facilities built was US$197.

The SRF provided small loans (US$145) over two years at partially subsidized rates to low-income and poor households to build septic tanks or, in fewer cases, urine diverting / composting latrines or sewer connections. The subsidized interest rate was equivalent to providing a US$6 subsidy on each loan. The loans covered approximately 65% of the average costs of a septic tank and enabled the households to spread these costs over two years. They acted as a catalyst for household investment, though households needed to find other sources of financing to cover their total investment costs, such as borrowing from friends and family.

The program also included a significant software support component, for sanitation promotion, the creation of Savings and Credit groups, and hygiene promotion. Software support per household was about US$21 and represented about 10% of the total costs of sanitation adoption.

This case study starts by providing some brief background on the country and sanitation context. We present the way in which on-site sanitation was provided through the project before analyzing the costs of such provision. We then evaluate the performance of the financing approach for the on-site solution, focusing on its impact on sustainable access to services, on costs and effectiveness in the use of public funds, and on poverty targeting, financial sustainability, and scalability. A summary section draws out key lessons learned, looking at what seems to have worked and what did not work so well.

F.2 Country and sanitation sector context

F.2.1 Country context

Vietnam, a country of 85.6 million people at the end of 2007, is the 13th most populous country in the world. Although urbanization is developing rapidly, only 27% of the population was living in cities as of 2007. In recent years, Vietnam has experienced relatively high economic growth, at approximately 7% per annum.

In 2007, GDP per capita was estimated at US$828,[5] although this was considerably higher when considered in PPP-adjusted terms (US$2,589). The national poverty rate was estimated at 15% in 2007.

5 International Monetary Fund, World Economic Outlook Database, April 2009. http://www.imf.org/external/pubs/ft/weo/2009/01/weodata/index.aspx

F.2.2 Initiatives to increase sanitation coverage

The government's sanitation sector strategy was developed with assistance from UNDP/World Bank in 1990 and the Finnish Government in 1995/1996. Among other things, the strategy focused on decentralizing activities to the local level and, where appropriate, outsourcing service functions such as septage collection or maintenance of equipment to the private sector. At the household level, it was decided that property owners would continue to be fully responsible for on-site sanitation costs, although it was recognized that lower-income households would need assistance to build suitable sanitation facilities through access to credit. Prior to this, however, donors had tried to develop sanitation investments through heavily subsidized schemes, but by and large these had failed.

Between 2000 and 2006, access to improved drinking water and improved sanitation increased from 78.7% to 89.0% and from 44.1% to 64.3%, respectively. According to Joint Monitoring Programme (JMP) figures, 88% of the urban population in Vietnam had access to improved sanitation in 2006 and 5% had shared facilities.[6] Urban water-supply coverage reached 97.1% in 2006.

F.2.3 Institutional set-up for urban sanitation

At the national level, the Ministry of Construction (MOC) is responsible for urban water supply, sanitation, and drainage. This includes responsibilities for planning, policy formulation, regulation, training, and technology transfer.

At the provincial level, the Provincial People's Committees (PPCs) are responsible for urban infrastructure development, including water supply, sanitation and drainage. In the "special" cities such as Ho Chi Minh City and Hanoi as well as some other large cities—such as Haiphong, Da Nang and Ba Ria Vung Tau—where there are large drainage systems, the PPCs established Sewerage and Drainage Companies (SADCOs) or Urban Drainage Companies (UDCs) for maintaining existing drainage systems and collecting and treating waste water and solid waste. In smaller cities, the PPCs have established Urban Environmental Companies (URENCOs), which are public enterprises responsible for maintaining existing drainage systems, collecting and treating wastewater and solid waste, and other services such as street pavement maintenance, parks, street lighting, road construction, and burial services. We refer to these collectively as the "local sanitation service companies" in the rest of this case study.

F.3 Sanitation Revolving Fund project design

This section presents the overall set-up of the Sanitation Revolving Fund (SRF) component of the Three Cities sanitation project, its institutional set-up and levels of service, the total costs and sources of financing, as well as the main characteristics of the lending product.

F.3.1. Project overview

The Three Cities Sanitation Project was initiated to support the Government of Vietnam's sanitation sector strategy. The World Bank-funded Three Cities sanitation project was approved in May 1999. It officially started in January 2000 and closed in June 2008, although the Sanitation Revolving Fund component is scheduled to continue operating under a different institutional set-up until at least 2010 in some cities. The original project operated in three subprojects, in Da Nang City, Haiphong City, and Quang Ninh Province (Halong City and Campha town). A project management unit was established in each city/province.

The project as a whole aimed to make sustained improvements to public health and to increase economic development by reducing the incidence of flooding, upgrading the urban environment, and developing more efficient and financially sustainable sanitation and drainage companies. In terms of implementation, it focused on increasing decentralization by developing greater financial and governance capacity at the local level and promoting private sector participation by helping to commercialize public utility agencies.

The project included rehabilitating essential sanitation infrastructure, institutional strengthening of the local sanitation services companies, and facilitating greater private-sector participation. This was done directly by providing technical assistance for the procurement and regulation of private

6 These figures are disputed. Other figures, from the MOC/ Vietnam Water Supply and Sewerage Association, placed urban water supply coverage at 70% in 2006 and urban drainage coverage at about 60%.

contractors and indirectly by helping to build commercially oriented public utilities. It was expected that, by the end of the project, local governments and their sanitation service companies would be in a position to take over responsibility for an increased share of the investment costs of sanitation infrastructure. In terms of hardware, the project focused on improving primary and secondary drains, sewers, and solid waste collection, transfer and disposal.

Project components were designed in the same way in all three areas including (i) sewerage and sewage treatment; (ii) drainage; (iii) institutional development and construction management; and (iv) revolving funds for household sanitation facilities.

Revolving funds were established in selected areas in each city to provide loans to low-income households to help them construct or improve on-site sanitation facilities, mainly individual septic tanks and urine-diverting / composting latrines, or to build sewer connections. This component built on the recognition that on-site sanitation solutions should be offered to those who were located far from existing or expected sewers, because sewers and full biological treatment would not be affordable for the entire population. The sanitation service companies thereby recognized that they should provide sanitation services to all urban citizens and not only the families that are connected to their piped networks.

The revolving fund component was implemented in two distinct phases:

- ***During Phase 1 (from 2001 to the end of 2004), the revolving funds were operated under the management of the Three Cities*** Sanitation Project in each of the cities. After phase I of the project, funds were handed back to the People's Committees of the three cities/provinces.
- ***During Phase 2 (from 2005 to date), the funds were transferred to the management of the Municipal/ Provincial People's Committee.*** The second phase ran from 2005 to 2008 for Halong and Campha and will extend to 2010 for Da Nang and Haiphong. In Halong and Campha, the funds are now closed and the working capital was sent back to the Provincial People's Committee. A follow-up is being considered by the Provincial People's Committees since there is still demand from local people. The principle of continuing to use the fund beyond Phase 1 to finance other areas with a social or environmental purpose was agreed to at an early stage.

F.3.2. Revolving fund institutional set-up

In each city, the local sanitation service companies appointed the local branch of the Women's Union to administer the revolving funds on their behalf. The Women's Union has a lot of experience and is the most competent organization to deliver health education programs and manage microcredit schemes in Vietnam. It has been managing similarly funded projects since 1992. As they had been very successful in managing Phase 1, Women's Union branches were assigned to manage the revolving funds during Phase 2 as well. They received assistance from the local sanitation companies in order to develop technical solutions and supervise the quality of constructed work.

At the community level, the Revolving Funds functioned on the basis of Savings and Credit groups, formed by potential borrowers and led by a group leader. Savings and Credit groups included 12 to 20 people each who had to live close to each other in the same ward in order to ensure community control. People in the same groups had to pay back the loan on time to enable others to get a loan. Several groups could be formed in the same ward according to demand. To join a Savings and Credit group (and therefore be eligible for a loan), households had to meet the following eligibility requirements:

- Be in need of funds for construction or improvement of sanitation facilities including latrines, septic tanks, or internal plumbing;
- Have no other outstanding loan and no previous bad debt and they must be deemed able to pay back the loan;
- Be low-income, although hardcore poor[7] were excluded because of their low ability to pay the loan back; applicants had to have an income above the provincial poverty line but less than 1.5 times that level; and
- Be willing to commit to the group's activities and rules and regulations; this would usually entail making compulsory savings of VND 10,000 to VND 20,000 per month, which cannot be withdrawn before the loan ends, and participating in monthly group meetings.

7 Those below the national poverty threshold of VND 150,000 per capita per month, or US$516 per household per year in 2004

Savings and Credit Groups were led by a group leader, who had to live in the same area and be either a staff from the local Women's Union or the head of the residential block. Group leaders played a very important role to make sure that all borrowers paid back the loan and interest on the loan within the payment term. In some cases, they had to advance their own funds to those who might not be able to pay the installment. Group leaders (mostly women) were involved on a voluntary basis and would usually be motivated by pride or the desire to enhance their reputation. They were responsible for managing group activities, which included identifying eligible households to receive the loans, organizing group meetings, managing the loan repayment progress, and collecting interest as well as compulsory savings, and finally ensuring that investments were carried out within 30 days following the disbursement of a loan.

Saving and Credit groups were monitored at the ward level and at the provincial level by Revolving Fund management boards, which were themselves placed under the scrutiny of the project management units in each city. At the ward level, a three-member management board was formed and was responsible for monitoring the use of funds and supervising the groups' activities. They were also in charge of building up promotion teams and disseminating information on hygiene issues as well as reporting to the Provincial / Municipal Management Boards about the use of the loans. At the provincial level, the management boards were created with five to seven members each, who were permanent staff of the Women's Union and/or contractual staff. In addition, representatives from the local sanitation service companies and/or project management units were part of the Provincial Management Boards. Their responsibilities included monitoring the revolving funds' performance and developing materials that could be used at the ward level, such as IEC materials or bookkeeping and reporting systems.

F.3.3 Levels of service

Three potential technical solutions were offered to borrowers in all three cities: septic tanks, composting/urine-diverting latrines, and sewer connections. Composting/urine-diverting latrines were applicable mainly in the semi-urban communes of Campha and Halong cities, where nutrients from human excreta are needed for vegetable production. Latrines with septic tanks and sewer connection were highly preferable in Haiphong and Da Nang cities, with better-off people living in urban areas with limited land for accommodation. However, the take-up of sewer connections was considerably reduced by delays in the construction of the main sewers.

CAPITAL COSTS

A detailed design was provided together with the estimated cost to every potential borrower. Borrowers decided on the technical solution that best suited their needs, depending on affordability and other considerations (such as odor and convenience).

The project provided estimated costs for these options to the households: VND 2,050,000 (US$149, using the 2001 exchange rate) for a composting/urine-diverting latrine, and VND 3,200,000 (US$225) for a septic tank (2001 prices). Whereas such estimates were sufficient to cover the costs of a septic tank, they represented only a bottom estimate for septic tanks, with actual costs being at least VND 3,500,000. These estimated costs were increased in 2006, partly to reflect inflation, to VND 3,500,000 (ÚS$218 at 2006 exchange rate) for a composting/urine-diverting latrine and VND 4,100,000 (US$256) for a latrine with a septic tank.

For sewer connections, the costs varied substantially depending on the length of pipe required and on the type of terrain. An average estimate made by the consultants to the Three Cities Project was VND 1,310,000 (US$95 at 2001 exchange rate) per sewer connection.

OPERATION AND MAINTENANCE COSTS

The operating cost of a toilet with septic tanks includes cleaning products, electricity, toilet paper, and water for flushing, and ranges from VND 30,000 to VND 60,000 per month in 2008. Emptying septic tanks should be done once each four or five years. It is normally charged at VND 400,000 to VND 800,000 (2008 prices) per tank depending on the accessibility and the volume of the tank.

Since 2001, the sanitation service companies have introduced a wastewater fee for all households connected to the water networks, payable through the water bill. Those households that pay that wastewater charge and have on-site sanitation facilities (rather than being connected to the sewers) can have their pits emptied at no extra charge once every five years.

The sanitation service companies have contracted out the provision of these services to private operators. As a result, the total yearly operating and maintenance costs for a latrine with septic tank (including the costs of pit emptying) were estimated to be US$31 in 2004 prices (the end of Phase 1).

The operating costs of composting/urine-diverting latrines were smaller, at about VND 10,000 to VND 20,000 per month, mainly for toilet tissues (2008 prices). Pit emptying is done by the owners themselves for crop cultivation purposes, so there is no cost information on this. The total operating costs for that type of latrine were estimated to be US$8 per year in 2004 prices.

We did not obtain data on the operating costs of a sewer connection.

F.3.4. Project costs and financing sources

Overall project costs. The total cost of the Three Cities Sanitation Project was US$119.53 million, of which US$80.50 million (67%) was from an IDA/World Bank loan with a 10-year grace period and 40 years to maturity. In addition, grants were received from the Government of Australia (Da Nang); the Government of Finland (Haiphong) and the Government of Denmark (Quang Ninh) for a total of US$18.74 million (16%). The contribution from the Government of Vietnam was about US$20.29 million (17%).

Revolving fund component. A total of US$3 million was allocated to the revolving fund component (less than 3% of the total budget), of which US$1 million was a grant from Denmark (transferred to the World Bank through a trust fund), US$1 million a grant from Finland to Haiphong's Women's Union and US$1 million from the World Bank project funds (transferred by the central government to the recipient cities as grants). The funds for Phase 1 were allocated as shown in Table F.1 below.

Approximately 15% of the total was allocated as operating costs and hygiene education activities for the revolving fund component (in Haiphong, there was also a contingency which corresponded to the funds made available by the City of Haiphong itself). In addition, funded out of the main project, a group of technical consultants helped the Women's Union carry out intensive hygiene education activities.

The remainder was used as working capital for the revolving fund component. Administrative expenses at the local level were funded through interest revenues on this working capital (see next section on loan design).

The total value of loans provided during Phase 1 is shown in Table F.2 below. This shows that, on average, working capital funds were "revolved" about twice.

TABLE F.1. PHASE 1 — REVOLVING FUND ALLOCATIONS (IN 2001 US$)

	Da Nang	Haiphong	Halong	Campha	Total
Phase 1 – initial allocations					
Working capital	861,000	707,000	545,000	398,000	2,511,000
Operating costs*	152,000	151,000	85,000	64,000	452,000
Contingencies	0	151,000	0	0	151,000
Total	1,013,000	1,010,000	630,000	461,000	3,114,000

Converted using 2001 exchange rates, US$1= VND 13,800
Note: Operating costs were split between, approximately, 5% for management and 10% for hygiene education.

TABLE F.2. TOTAL VALUE OF LOANS PROVIDED DURING PHASE 1 (IN 2001 US$)

	Danang	Haiphong	Halong	Campha	Total
Total number of loans	12,815	8,608	7,547	6,854	35,824
Total value of loans	1,950,000	1,254,000	990,000	847,000	5,041,000
Loans/working capital	2.27	1.77	1.82	2.13	2.07

At the end of Phase 1, the working capital was returned to the Provincial People's Committees, which re-allocated those funds to be used for Phase 2. With the effect of inflation, the value of this working capital had decreased, however. In addition, the operating costs for Phase 2 were retained out of the transferred funds, which led to an overall reduction in working capital value, as shown in Table F.3 below. In Halong and Campha, there had been savings on operating costs during Phase 1, which meant that funds transferred for Phase 2 were slightly higher.

Additional expenses were incurred by the project as a whole, such as in community participation development or hygiene awareness campaigns, but it was not possible to disaggregate such figures in order to allocate them to the revolving fund component. The estimate of the software costs (including hygiene promotion and administrative expenses) is therefore an underestimate.

F.3.5 Loan design

The Sanitation Revolving Funds (SRFs) offered two main types of loans: sanitation loans and income-generation loans, the latter for activities such as garment sewing or handmade production.[8] Sanitation loans accounted for 80% of the number of loans provided by the SRFs, and income-generation loans were made mainly out of the funds available from compulsory savings.

The key characteristics of the sanitation loans provided by the SRFs were as follows:

- *Loan size:* The maximum amount that could be awarded to each borrower was VND 2,000,000 (US$145 at 2001 exchange rates). This was increased to VND 3,000,000 in 2006 (US$187 at 2006 exchange rates) for the second phase of the project.
- *Interest:* The monthly interest rate was 0.5%, which as about half the normal commercial rate.[9] This is equivalent to a 5.85% annualized interest rate over the life of the loan (taking into account the grace period). These interest rates were increased slightly during Phase 2.
- *Payment terms:* The loan had to be repaid over 24 months, with a 6-month grace period during which no capital repayment is due. Interest had to be paid from the first month.

Disbursement schedule: An advance payment of 20% was paid to the household borrowers on approval of the loan by the Management Board. Subsequent percentage payments were made at predefined stages of completion, based on progress certificates signed by the Women's Union. Revenues from interest payments were used to cover administrative costs and any potential default. Those revenues were allocated as follows: 50% for administrative costs at the ward and group level; 20% for administrative costs at the provincial level; 20% for defaults; and 10% to make incentive payments and reward groups with significant achievement in loan repayment. The decision to write-off a bad debt must be approved by the Provincial Management Board, and the Savings and Credit group must pay at least half of the outstanding loan principal from its compulsory savings pool.

In addition, Savings and Credit group members had to make compulsory savings, from at least VND 10,000 to 1% of the value of the loan, which had to be paid from the first month.[10] Members were not allowed to withdraw their savings before the end of the loan term and they did not earn interest on these compulsory savings, which can therefore be seen as a deposit.

TABLE F.3. PHASE 2 — REVOLVING FUND ALLOCATIONS (IN 2004 US$)

	Da Nang	Haiphong	Halong	Campha	Total
Value of principal fund reimbursed - end of Phase 1	755,053	620,313	478,137	348,926	2,202,428
Value of principal fund brought to use in Phase 2	645,100	508,453	448,456	357,760	1,959,769
Allocated for operating costs of Phase 2	109,953	111,860	28,028	22,372	272,213
Allocated for operating costs of Phase 2 (%)	15%	18%	6%	6%	12%

8 In addition, during Phase 2, some revolving funds provided loans for water supply investments. This was not allowed during Phase 1.

9 This subsidized rate has not been taken into account into the computation of the use of public funds, as the funds were provided as a grant to the project. Estimating the value of this subsidy would require putting a value on the public cost of capital, which goes beyond the scope of this project.

10 In Haiphong, savings were not compulsory, but capital repayments equivalent to 5% of the total loan had to be returned each month from the 5th month of the cycle. They were able to offer these conditions because the population was better-off in Haiphong, which meant that the credit risk was lower.

Savings could be retained and managed by the Savings and Credit groups. Group members decided how to use savings, but in general they were used to give loans for income generation and sanitation improvements. Loan recipients who received this savings had had to prove their capability for repayment by performing well on previous sanitation loans awarded.

F.4 Evaluation of the project's performance

In this last section, we seek to evaluate the project's performance at extending household sanitation based on criteria set out in the common methodology for the project. Detailed calculations are based on Phase 1 only, as some critical data was missing for Phase 2.

F.4.1 Impact on sustainable access to services

The SRF mechanism covered 94 wards in the four cities and benefited about 200,000 people from 2001 to 2008, as shown in Table F.4 below.

Of the 46,308 sanitation facilities built with financial support from the revolving funds, 88% were septic tanks, 9% were for sewer connections, and 3% were for composting/urine-diverting latrines.

At the project design stage, it was envisaged that a higher percentage of the loans would be used to invest in sewer connections rather than septic tanks. However, the construction of the main sewers encountered some delays and did not keep up with the pace of the revolving fund component. When the main sewers eventually got built, toward the end of the Three Cities Sanitation project, the revolving funds had to be wound down and transferred to the municipalities and households that had already invested in septic tanks, so they were reluctant to connect to the newly built sewers. This is a potential limitation of the SRF scheme, and it would have been preferable to delay it until the sewers were actually built. However, the Women's Union was keen to press on with the loan program so as to provide access where demand was high.

Improved sanitation facility coverage rates have significantly increased in all four cities.

Coverage with improved sanitation facilities varied between 15% (Campha) and 70% in Da Nang and Haiphong, prior to the project being in place. The project made a significant contribution to increasing coverage in all four cities, ranging from 13% to 21% coverage increase when compared to the baseline population in 2000. However, the percentage of coverage increase is lower when compared to the 2007 population, reflecting the population growth during the period.

Not all these achievements can be attributed to the revolving fund component alone, however. For example, it was estimated that about 20% of households invested in improving their sanitation facilities from their own resources, thanks to the overall impact on sustainable access to services, such as the hygiene promotion campaign. In Da Nang, for example, it was estimated that about 1,700 households improved their sanitation facilities following the communication campaign but without a loan from the SRF. Those improved sanitation units contributed to an increase of sanitation access coverage (including nonimproved latrines) from 83.6% in 2000 to 90.4% in 2004. In Halong, access to improved sanitation had risen to 90% by 2007, largely due to the impact of the SRF.

TABLE F.4. ACHIEVEMENTS OF THE REVOLVING FUND APPROACH (PHASES 1 & 2 - 2001-2008)

	Da Nang	Haiphong	Halong	Campha	Total
Total number of loans provided	18,516	15,532	10,978	9,863	54,889
Number of sanitation facilities built	15,368	13,855	9,581	7,504	46,308
Composting / urine-diverting latrine	0	0	411	1,031	1,442
Toilet with septic tanks	15,266	9,980	9,098	6,405	40,749
Sewer connection	102	3,875	72	68	4,117
Number of people reached with sanitation facilities	69,310	54,312	39,282	30,766	193,670
Number of loans for other purposes	3,148	1,677	1,397	2,359	8,581
% of sanitation loans out of total loans	83%	89%	87%	76%	84%

TABLE F.5. INCREASE IN COVERAGE IN PROJECT AREA (2000-2007)

	Date	Da Nang	Haiphong	Halong	Campha
Baseline population in project area	2000	543,637	419,400	186,029	154,035
Baseline coverage	2000	70%	70%	55%	15%
Baseline number of household facilities (estimated)	2000	84,378	74,893	24,955	5,635
Number of sanitation facilities built	2000-2007	15,368	13,855	9,581	7,504
Equivalent increase in coverage vs. baseline population		13%	13%	21%	20%
Increase in coverage vs. 2007 population		9%	8%	20%	19%

Other significant achievements have included the following:

- Awareness of the linkages between hygiene, sanitation, environment, and health was raised by many hygiene promotion campaigns conducted by the technical assistance subcomponents of the overall project.
- The capacity of the Women's Union staff was strengthened by many training activities conducted on credit appraisal, loan portfolio quality monitoring, and study tours to exchange experience among project sites and relevant projects in the country.

According to the Women's Union's experience, as well as focus group discussions and observations, all facilities built with revolving fund financing appear to be still operating five years down the line. This reflects strong ownership of the scheme, with the loan recipients taking good care of the facilities built out of the loan proceeds.

F.4.2 Costs

The total costs of building a septic tank latrine, including financing costs and software costs, were around US$220, including US$20 to US$25 for the software component.

Taking account of the financing costs and the software costs (i.e. the operating costs of the revolving fund), we estimated that the total costs for a septic tank with latrine ranged from US$221.7 in Haiphong to US$214.4 in Campha in 2004 prices. The software component (the operating costs of the SRF) represented between 8% and 11% of the total costs for a septic tank.

A composting/urine-diverting latrine was comparatively cheaper, at around US$150, including US$17 to US$19 for the software component (13% of total costs)

Despite this cost difference, borrowers had a strong preference for building septic tank latrines. In the two larger cities, Danang and Haiphong, all loans were used to build a septic tank, reflecting the fact that these two cities are more urban in nature (hence there is no need for compost for agricultural production) and that the population is comparatively better off.

Operating costs of the septic tank latrine were also higher, at about US$30 per year (in 2004 prices), compared to US$8 per year for a composting urine-diverting latrine.

However, after 2001, services for emptying septic tanks were offered free of charge to those who were connected to the water system, as this cost would be covered through the wastewater charge. This amounts to a savings of US$6 on operating costs, although households still needed to pay this service indirectly through the wastewater charge.

For households, the loans helped spread the burden of the investment costs over time, but the investment still represented a substantial portion of low-income households' income.

Given the choice of technical specification (a latrine connected to a septic tank, which was not at the bottom of the sanitation ladder), the investment costs for households (including hardware and financial costs of the loan) represented a sizeable portion of their annual income. For a composting/urine-diverting latrine, it ranged from 22% for a low-income household to 30% of yearly income for a poor household. For a septic tank, household investment ranged from 24% for a low-income household in Da Nang to 46% for a poor household in Haiphong, as seen in Table F.6 below. Despite this apparent burden, low-income households were still prepared to make substantial investments in improved sanitation.

TABLE F.6. HOUSEHOLD INVESTMENT COMPARED TO HOUSEHOLD INCOME

Composting / urine-diverting latrine	Danang	Haiphong	Halong	Campha
Household investment as % of average income	n.a.	n.a.	7	7
Household investment as % of low income	n.a.	n.a.	22	22
Household investment as % of poor income	n.a.	n.a.	30	30
Latrine with septic tank				
Household investment as % of average income	9	13	10	10
Household investment as % of low income	24	38	32	32
Household investment as % of poor income	40	46	44	44

Note: Information on the percentage of income for an average income household are provided as a basis for comparison, as average households were not a target group for the program.

The total outgoings on a sanitation loan (including the compulsory savings, which are only recouped once the loan has been repaid) amounted to VND 2,385,000 or US$142 (at the 2004 exchange rate). This represented about 30% of the yearly income of a poor household, defined as being below the national poverty threshold (i.e. a monthly income of VND 150,000 per capita for the period 2001-2004). For low-income households (below a threshold defined by each municipality, slightly higher than the national poverty threshold), the cost of the sanitation loan represented between 18% and 28% of their yearly income depending on the city.

Operation and maintenance costs of a composting / urine-diverting latrine were relatively affordable, ranging from 1.6% of an average household income to 7% of a poor household income. In addition, compost from the latrine could be used for agriculture purposes and therefore generate revenues.

The costs of maintaining a septic tank were also relatively affordable, ranging from 1.3% of an average household income in Da Nang to 6.5% for a poor household. In addition, the fact that emptying septic tanks is provided as a free service by municipalities (and financed through the wastewater charge) can reduce the financial burden of maintaining a septic tank further.

F.4.3 Effectiveness in the use of public funds

From the public-sector point of view, the "bang-for the buck" ratio was particularly high, as US$1,000 of public funding enabled the construction of septic tanks for 116 households.

This reflects the fact that the type of investment retained was relatively low-cost and, most importantly, that the use of public funds was rather limited, with most of the investments financed by households themselves.

Investments in sanitation facilities have overwhelmingly been financed by the household themselves with prefinancing from the revolving fund.

We sought to estimate the value of household investments, based on the average costs for each technical solution.[11] The loans provided by the SRF covered approximately 98% of the hardware costs for a composting/urine-diverting latrine and 65% of the average hardware costs of a septic tank. Taking into account that households had to cover interest costs (which partly paid for administrative expenses), we estimated that households had invested close to US$5.2 million during Phase 1 alone in septic tanks and urine-diverting /composting latrine.[12] This is likely to be an underestimate, however.

Although SRF loans did not cover 100% of total investment costs, demand for the loans was very high and the loans served to catalyze other sources of funding.

11 This was done only for septic tanks and urine-diverting/composting latrines, since the focus of the project was on on-site sanitation solutions. Besides, sewer connection costs varied substantially from one household to another.

12 The information for Phase 2 was incomplete so we only carried out detailed calculations for Phase 1.

Loan recipients indicated that they often borrowed additional funds from other sources such as friends, brothers/sisters, or even from other funds managed by the Women's Unions to build an adequate latrine, because they did not want to have to upgrade it in the near future. For example, during Phase 2, it was found that some borrowers built combined bathrooms and toilets for a total cost of VND 30,000,000 (10 times the size of the loan). Those were people with comparatively high incomes in cities such as Haiphong and Halong, however. In addition, it was estimated that about 30% of households within the project area asked for a loan for sanitation improvement but could not obtain one because funds were limited.

The repayment rates have been very high in all cities, with 99.63% and 99.8% in Da Nang and Haiphong, respectively, and 100% in both Halong and Campha during Phase 1. Compulsory savings set aside by borrowers have also made it possible to grant a total of 8,581 loans for income-generation, which contributed to reducing poverty in the cities. The leverage ratio (i.e. the amount of private investment generated by US$1 of public investment) for the revolving fund mechanism was extremely high, ranging from 13.4 for investment in septic tanks in Haiphong to 25.3 for septic tanks in Campha (where operating costs were kept to a minimum). These are shown in Table F.7 below.

TABLE F.7. LEVERAGE EFFECT ($ INVESTED PRIVATELY / $ PUBLIC MONEY SPENT)

	Da Nang	Haiphong	Halong	Campha
Composting / urine-diverting latrine	n.a.	n.a.	14.1	17.1
Septic tank	19.8	13.4	20.9	25.3

The public funds used were calculated based on the operating costs set aside for the revolving fund. The costs of project preparation for the Three Cities Project, as well as overall operating expenses of the overall project, should in theory be included in the estimation of operating costs, but these expenses could not reliably be attributed to the revolving fund component and have therefore been excluded. Funds made available as working capital were not "used" as such, since they were fully repaid and interest revenues covered administrative expenses and the risk of default.

Finally, another "use of public funds" can be associated with the fact that the interest rate on the loans was partially subsidized, as it was about half the commercial rate with a six-month grace period. We have not estimated the value of this subsidy, as this would depend on the opportunity cost of capital for public entities (rather than on the commercial interest rate), a piece of information that was not available to us and would require further analysis to obtain.

F.4.4 Poverty targeting

The revolving funds targeted poor households living in areas not connected to the sewers

Women Unions kept information on the incomes of the loan recipients, as shown in Table F.8 below. The definition of low-income and poor households varied from city to city, depending on their relative wealth.

All households who benefited from the loans were in the first (i.e. the lowest) income quintile according to the local definitions. The majority of loan recipients were defined as low-income households based on city-level definitions of poverty, whereas a smaller percentage loans went to those who are defined as poor based on the provincial definition.

TABLE F.8. DISTRIBUTION OF LOAN RECIPIENTS BY INCOME BRACKET

	Da Nang	Haiphong	Halong	Campha
Definition of poor household (provincial level)				
Monthly income per capita <	250,000	180,000	250,000	150,000
Definition of low income household				
Monthly income per capita <	275,000	270,000	275,000	225,000
% recipients defined as poor household	31%	100%	40%	15%
% recipients defined as low income households	69%	100%	60%	85%

Errors of inclusion were close to nil.

Rich people did not benefit from the scheme, as they would have already had very good facilities and funds were limited compared to demand. The error of inclusion was therefore limited to an absolute minimum via the control of the Savings and Credit group leaders.

Very poor households did not have access to the loans due to their limited ability to pay it back.

The very poorest (i.e. those with an income below the national poverty line of VND 150,000) did not have access to the loans because of their assumed low ability to pay it back. Although this is a potential limitation of the program, its impact was limited. Given that the cities where the program was run were comparatively richer than the small towns, the percentage of people falling below the national poverty line was very small (2.41% of households in Da Nang, 3.21% in Haiphong, 7.97% in Quang Ninh for example). In addition, other government programs, including free housing, were available for those under the national poverty line.

During the design stage of the program, it had originally been contemplated to offer several types of loan products (with varying levels of subsidization) to tackle the needs of different income groups. However, the Women Union's advised against this segmentation, based on their experience, as they indicated that offering highly subsidized loans would dampen the demand for less subsidized ones. The other alternative that was contemplated was to revolve the funds up to the point where all existing demand for the loans had been exhausted and to then use the remaining working capital to provide hardware subsidies to the poorest households, i.e. those who were not able to access a loan. However, the revolving funds are still functioning as there is still untapped demand for loans so it is not possible to assess the validity of such an approach.

F.4.4 Financial sustainability

All costs (except operating costs) were recovered from households via the loan, pointing to a high financial sustainability.

As discussed in Section F.3.4 above, the working capital was revolved about twice during Phase 1 and provided a basis for further loans during Phase 2. Operating costs which were not covered by interest revenues (and which can therefore be seen as a software contribution) represented about 16% of the cost of a septic tank and between 9 and 11% of the costs of a composting/urine-diverting latrine.

Most operating costs were covered by households themselves, except the costs of emptying septic tanks, which were covered via the wastewater charge.

We did not have sufficient data to assess whether the wastewater charge was indeed sufficient to cover the real costs of emptying septic tanks, and whether or not a cross-subsidy is at play here. However, given the logic of the overall set-up and the move towards commercialization of the sanitation companies, cost-recovery of operating costs is likely to be very high, close to 100%.

F.4.5 Scalability

Scaling-up the approach seems affordable compared to the government's budget.

On average, extending coverage via septic tanks consumed about US$20 (in 2004 prices) of public funds per household, i.e. to pay for the operating costs of the revolving fund that were not covered via interest revenues. If the remaining approximately 12% of Vietnam's urban population which currently does not have access to improved sanitation (i.e., 3.2 million people in 2005) were to gain access via this approach, this would cost about US$15 million, which is 1.8 times the government's estimated annual budget on sanitation and seems affordable.[13] In order to reach the very poor who are not deemed able to repay such loan, however, it may be necessary to define alternative lending schemes, with a higher level of subsidized interest rate.

13 This estimate is very difficult to obtain given the decentralized nature of the sanitation sector. This is based on an estimate that the government budget covers only 4% of the annual investment needs to meet the MDGs at the national level, estimated to be US$221 million annually according to government statistics.

The approach has been scaled up through a variety of projects and government-led initiatives.

The SRF was replicated trough a variety of projects, including on-going projects funded by the World Bank. For example, the Coastal Cities Environmental Sanitation Project (CCESP), which is ongoing and scheduled to end in 2014, has a sanitation revolving fund component managed by the Women's Union. The loan terms are similar to those of the Three Cities Sanitation Project, but about twice the size. Similarly, the Vietnam Urban Upgrading Project (VUUP) has a revolving fund component for housing improvements, with an average loan amount of US$390. According to the Project Appraisal Document for this project, the repayment requirements represent 10-25% of average monthly household income in typical project areas, which is within the limit considered affordable for low-income households. The total working capital for microcredit in World Bank projects was estimated to be about US$25 million as of March 2009, and all existing funds are performing very well.

It is reported that the Vietnam Bank for Social Policy, established in 2003, has also adopted this kind of approach for household improvement and water and sanitation loans throughout the country, with impressive results.

F.5 Summary evaluation

In this section, we summarize the evaluation of the financing approach based on our set of criteria and review what seems to have worked, and what did not work so well. Overall, the Sanitation Revolving Funds (SRFs) achieved great impact, both in raising sanitation and hygiene awareness and sanitation facility improvement.

In terms of impact on sustainable access to services, the SRF component of the Three Cities Sanitation project delivered substantial investment, as it helped almost 200,000 households build sanitation facilities over the course of seven years. This resulted in increases in coverage of about 13% to 21% when compared to the baseline population. According to the Women's Unions, all facilities seemed to be working well five years down the line and septic tanks were emptied on a regular basis thanks to services provided by the local utilities (in exchange for payment of the wastewater charge by those households connected to piped water supply).

In cost terms, the SRF supported investment that represented a relatively high percentage of household income but was still seen as affordable. The average total cost of a septic tank built with financial assistance from the SRF was US$220, of which only 9% were software costs. From the point of view of the households themselves, the required investment represented about 30% of their annual income for low-income households and up to 46% for poor households. Despite this relatively high burden, they were still willing to invest substantially (from their own funds and other sources of finance) and there is still significant unmet demand for the loans.

In terms of effectiveness in the use of public funds, returns to public fund investments were particularly high since US$1,000 of public funds used enabled the construction of septic tanks for 116 households. The revolving fund mechanism allowed minimizing the use of public funds while leveraging household investment by a factor of up to 25 times the amount of public funds spent on the project.

In terms of poverty targeting, the SRF targeted poor households not connected to the sewers. The SRF offered loans to households within the first income quintile, i.e. the poorest quintile. The possibility of offering a higher level of subsidized interest rate to the poorest households (those who were not offered a loan due to their perceived low ability to pay it back) was dismissed at project design stage as it may have affected the effectiveness of the main loan product and other types of support could be provided to very poor households via government programs.

The SRF was highly financially sustainable, since 93% of the initial costs were financed by households themselves (via the loans). The seed funds initially provided were revolved several times (more than twice in the first phase and more during the subsequent ones), with minimum leakage in order to cover the operating costs of the scheme. Repayment rates were extremely high (at or close to 100%). In addition, the scheme has generated revenues to provide loans for income-generation activities, contributing to reducing poverty in the project area.

In terms of scalability, the approach appeared to be highly scalable. A dwindling number of Vietnamese households did not have access to sanitation. Extending sanitation services to them via the SRF approach would cost about US$15 million, which was 1.8 times the government's annual budget on sanitation. The approach has already been successfully scaled up via World Bank-funded projects (with working capital of US$25 million as of March 2009 in a variety of programs) and by government institutions, such as the Vietnam Bank for Social Policies.

WHAT SEEMS TO HAVE WORKED?

The revolving fund approach has proved to be a highly effective approach to financing household sanitation for the poor. Critical factors for this success were as follows:

- ***Demand for sanitation investment was generated through extensive hygiene promotion programs carried out at the level of a whole province,*** rather than being focused on the areas where the SRF was operating. These programs sought to increase awareness of health and environmental benefits from sanitation and to encourage communities to extend coverage and improve the quality of septic tanks through the sanitation subloans. They were funded in part from the World Bank loan although it was not possible to obtain a breakdown of such project costs.
- ***Lending procedures were attractive to borrowers,*** although the loan size was lower than the actual investment cost. The interest rate was attractive, as it was 50% lower than commercial bank rates. The loans helped to spread the investment costs over a period of two years and were instrumental for catalyzing other sources of funding.
- ***The size of the loan was adequate***, given that all loans were recovered and the leverage effect was high. If the loan size had been too low, the leverage factor would not have been as significant. Had the cap been too high, there might have been some defaults on the loans.
- ***The formation of Savings and Credit groups was seen as critica***l to ensure repayment of the loans and regular saving contributions. The role of the Women's Unions in organizing these groups was particularly valuable. They are a well organized and well entrenched organization, with local branches in all wards and considerable experience at managing such microfinance initiatives. Support structures (including the Savings and Credit group leaders, who played a critical role) provided mentoring, monitoring, and guidance with the selection of target group for loan disbursement

AND WHAT DID NOT WORK SO WELL?

Although the scheme is deemed financially sustainable and scalable, its ability to target the poorest people, who are the ones likely to remain unserved as coverage grows, is questionable. Investment costs represent a high percentage of their income (around 45% for the poorest people, i.e. below the national poverty line) which may be unaffordable, even with a subsidized loan. To reach the remaining 3.2 million people without improved sanitation in urban areas, the approach may need to be adapted either with a higher subsidy built into the interest rate or perhaps with a small hardware subsidy.