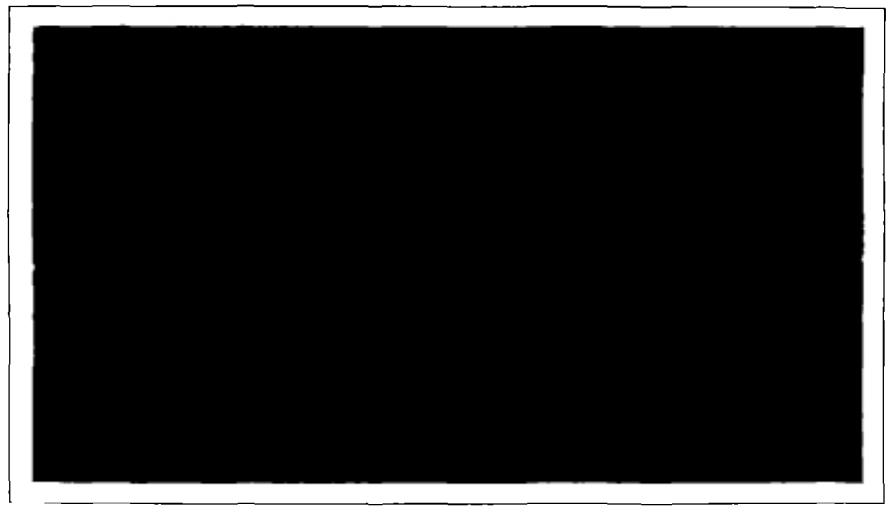

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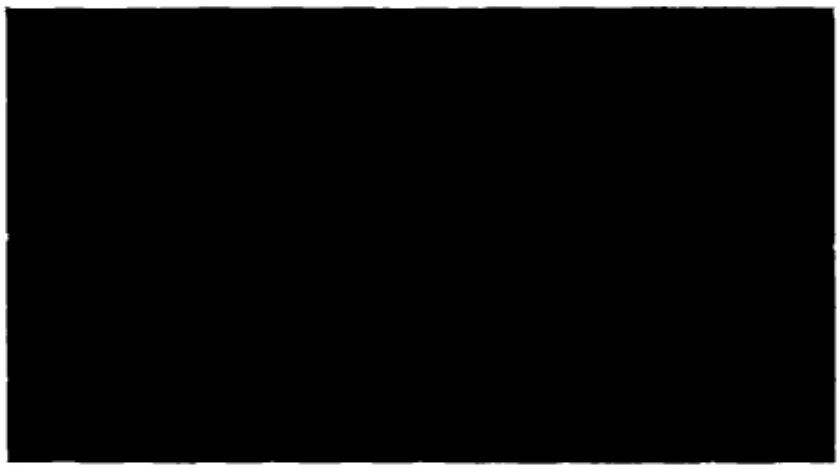

NATIONAL INSTITUTE OF PUBLIC HEALTH AND ENVIRONMENTAL PROTECTION
BILTHOVEN, THE NETHERLANDS

Report no. 802016002

EVALUATION UNICEF assisted Water Supply and Sanitation Project VIET NAM

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January 1995

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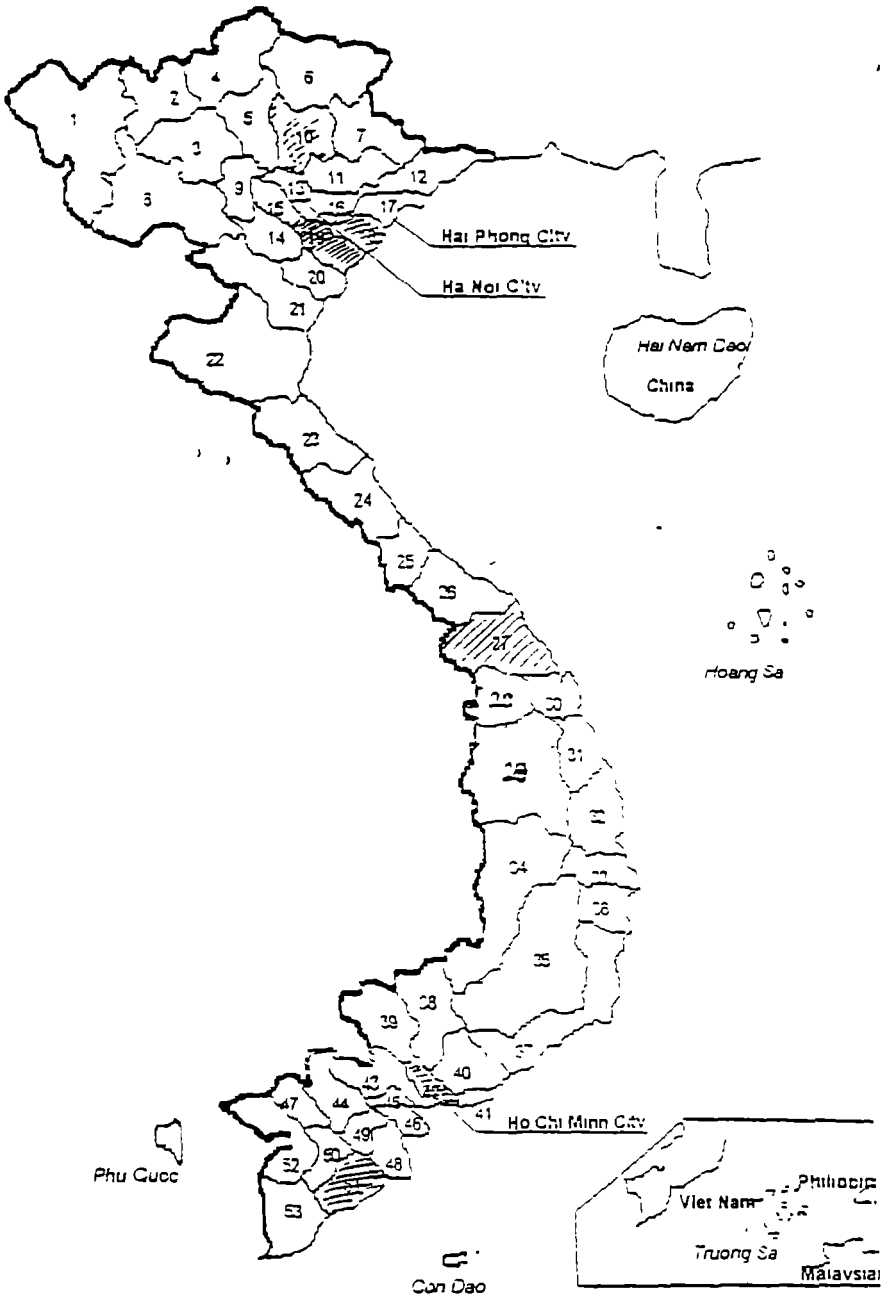
This mission took place on the request of the Netherlands Ministry of Foreign Affairs. Directorate-General for International Cooperation, under project number 802016

VIET NAM

PROVINCE

01. Lai Chau
02. Lao Cai
03 Yen Bai
04 Ha Giang
05. Tuyen Quang
06 Cao Bang
07 Lang Son
08. Son La
09. Vinh Phu
10. Bac Thai
11. Ha Bac
12. Quang Ninh
13. Ha Noi City
14. Hoa Binh
15 Ha Tay
16. Hai Hung
17 Hai Phong City
18 Thai Binh
19 Nam Ha
20 Ninh Binh
21 Thanh Hoa
22. Nghe An
23. Ha Tinh
24 Quang Binh
25. Quang Tri
26 Thua Thien-Hue
27 Quang Nam-Da Nang
28. Kon Tum
29 Gia Lai
30 Quang Ngai
31 Binh Dinh
32. Phu Yen
33. Khann Hoa
34 Dac Lac
35 Lam Dong
36 Ninh Thuan
37 Binn Thuan
38. Song Be
39 Tay Ninn
40. Dong Nai
41. Ba Ria-Vung Tau
42. Ho Chi Minh City
43 Long An
44 Dong Thap
45. Tien Giang
46 Ben Tre
47 An Giang
48 Vinh Long
49 Tra Vinh
50. Can Tho
51. Soc Trang
52. Kien Giang
53. Minh Hai



= provinces visited by the evaluation mission

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FOREWORD

This report is the outcome of an evaluation/review of the Netherlands support to the UNICEF implemented water and sanitation project, WATSAN, in Viet Nam. The evaluation mission was asked to put emphasis on reviewing the UNICEF project with the purpose to come forward with positive and concrete suggestions for improvement. The mission was carried out in a participatory manner, drawing upon the experience and building upon the views of the many officials of the Government of Viet Nam, the UNICEF project staff and the many beneficiaries we were able to meet. The mission could not have conducted its assignment without the active interest and support of the staff members of UNICEF, officials of GOV ministries, Women's Union, Royal Netherlands Embassy, provincial officials, and many users and future users of the project supported facilities. We are thankful for that, and also for the heartening experience of working with so many enthousiastic, development oriented people.

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LIST OF ABBREVIATIONS AND ACRONYMS

D/S	Drinking water and sanitation
Dfl	Netherlands guilder
GON	Government of The Netherlands
GOV	Government of Viet Nam
HDPE	High density poly ethyleen
IRC	International Reference Centre for Community Water Supply and Sanitation
MOET	Ministry of Education and Training
MOH	Ministry of Health
MOLISA	Ministry of Labour, Invalids and Social Affairs
MPO	Master Plan of Operations
NGO	Non Governmental Organization
PVC	Poly Vinyl Chloride
RIVM/BIS	National Institute of Public Health and Environmental Protection, Bureau for International Cooperation
RNE	Royal Netherlands Embassy
SRVN	Socialist Republic of Viet Nam
TARA	TARA handpump
TOR	Terms of reference
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
US$	United States dollar
VN6	Viet Nam handpump number 6
VND	Viet Nam Dong
WATSAN	Water and Sanitation project

Exchange rate: US$ = VND 10,000 = Dfl 1.80

EXECUTIVE SUMMARY

1. UNICEF

Since 1982, UNICEF has been actively supporting the Government of Viet Nam (GOV) boosting the provision of water supply and sanitation facilities in rural areas. UNICEF introduced suitable handpumps (VN6 and TARA), gravity flow water supply systems, the hand drilling technique for wells and trained/developed a substantial local implementation capacity. These activities were combined with fund raising to subsidize the programme and strong advocacy promoting safe water supplies through radio and television.

Since 1991, sanitation and hygiene education activities have been added to the water supply activities. The sanitation and hygiene education activities are still under development.

Over the years UNICEF has shown to be a very reliable and external support agency to the GOV for the development of the drinking water supply sub sector.

2. Achievements GON support

The support of the Government of The Netherlands (GON) to the UNICEF implemented water supply and sanitation project has, in accordance with the objectives for the GON support, been used for the bulk procurement of handpumps, HDPE- and PVC piping, cement and iron rods for water supplies and latrines. The GON support has also been used for the procurement of plant and equipment as well as for training/capacity related activities.

On the basis of the reported progress with implementation activities and the planned activities for 1995 it is expected that the mainly hardware oriented objectives for the GON support will be reached or even surpassed.

3. Water supply

Thanks to the UNICEF supported water supply and sanitation (=WATSAN) WATSAN project Viet Nam now has a good planning and implementation capacity for the development of public and also private point water sources/water supplies as well as gravity flow systems.

WATSAN estimates that each point water supply is used by a group of on average 120 people. At a cost of US$ 250 per water point the per capita investment costs come to US$ 2.10. The mission found that many handpumps are, for reasons of better upkeep, located on private plots of the better-offs, and are being used by 1 or possibly 2 to 3 households (6 to 18 people); households neighbouring WATSAN point water supplies often have and use their own point water supply, often an open dug well. For 6-18 users the per capita investment costs of a well plus handpump come to US$ 15-40.

The mission recommends that WATSAN looks into the issue of communal ownership and use of the point water supplies and that the WATSAN point water supplies are provided in water supply scarce areas to communities of relatively poor.

The actual use of the gravity flow systems was observed to be below optimum. This is mainly because of the distance from the homesteads to the public water points. To increase the actual use of the gravity flow systems WATSAN is recommend to carefully consider house connections.

In the Mekong delta area dug water from UNICEF assisted boreholes/handpumps often contains much iron; required iron removal plants are not always connected and used for these wells. The mission recommends to ensure that iron removal plants are linked to iron containing borehole wells.

To improve the actual use and impact of the WATSAN facilities it is recommended to undertake more educational activities e.g. through mass media or through grass root level organisations.

4. Environmental sanitation

The targets set in the project document for GON support of the sanitation component will be surpassed by 1995. More than 36,000 household latrines will be constructed while 30,000 were envisaged. The revised sanitation strategy as described in the country plan 1996-2000 which will become effective in 1995 calls for a high level of coverage, with concentration in a limited number of districts, using revolving credit facilities. The mission agrees with this completely, although it is recommended that below middle-income groups should be the preferred beneficiaries of the project and that the large commodities component of the UNICEF contribution should be reduced, or even eliminated.

The mission further recommends that it is now time to look beyond the construction targets, to concentrate on advocacy, social mobilization, and refining the objectives of the project with a focus on behaviours. It further recommends that services be targeted to priority areas and groups with greater health risks, that the technology be refined and simplified, and that these changes be reflected in the development of easily verifiable monitoring indicators. The role of the Women's Union should be enhanced in project implementation which will require some specific inputs, including training, to be activated successfully.

5. Schools

The mission found that environmental hygiene practises and teaching in schools needs to be strengthened.

The mission recommends to pay more attention and allocate more budget to environmental sanitation activities (facilities and educational materials) in all types of schools including kinder gartens, upper secondary schools, etc.

6. Balance between water supply, sanitation and hygiene education

The WATSAN project aims at the development of water supply, sanitation and hygiene education. In fact WATSAN has focused on water supply development. Sanitation activities and hygiene education activities have received substantially less attention, and have also made substantially less progress.

To improve the effectiveness and the impact of the WATSAN project and thereby adhering more closely to the components and the principles of the UNICEF strategies for the sector, a better balance between the water supply, sanitation and hygiene education activities is essential, both at national level (between MOLISA, MOH and MOET) and within UNICEF as well as at project level also in terms of the allocation of financial means.

7. GON support 1995

It is recommended that for 1995 the GON support will not be used largely for the local procurements of handpumps. More of the remaining GON budget should be allocated to sanitation and hygiene education.

In water supply the GON support should rather be used for the re-orientation of the wells project to water scarce areas and for the poor, setting up a maintenance (with spares outlet system) system in 2 or 3 provinces, preparing a pilot gravity flow system with (privately paid) house connections and a system based maintenance set-up, and preparing for a private sector wells/handpump programme. Also GON support should be used to set up a flexible credit system for boreholes/handpumps and latrines development as well as the recommended activities in maintenance, gravity flow system, etc.

The 1995 GON support should also be used to refine the sanitation project component with the recommended activities and in the recommended ways and to strengthen the schools sanitation/hygiene education activities through the Ministry of Education and Training, supported by the Ministry of Health.

1. INTRODUCTION

1.1 Assignment

At the request of the GON (Government of The Netherlands) and the GOV (Government of Viet Nam) an evaluation was carried out focusing on GON support to the WATSAN project. The WATSAN project is implemented by UNICEF. The terms of reference (Annex 1) for the evaluation asked for an assessment of:

* the achievements with the GON support;
* an evaluation of the effectiveness, sustainability and impact of the WATSAN project with special attention to gender;
* concrete recommendations for improvements especially in the soft ware aspects of the WATSAN project.

1.2 Team composition

The members of the evaluation team were:

-	Mrs K. Shordt	sanitation and social/educational aspects
-	Mr. Cuòng	sanitation, health education
-	Mr. H. van Schaik	technical/institutional aspects and team leader.

The team was assisted by Mr Hoa, UNICEF staff member for water supply, as a resource person.

1.3 Approach

The terms of reference requested for an overall evaluation of the technical, institutional, financial, beneficiary aspects as well as judgements on the sustainability and impact of the WATSAN project. In the short time of 2 weeks that was available for the mission it was carefully considered whether to address all the requested points of attention or to limit the scope of the mission. Because of the nature of the WATSAN project which considers water supply, sanitation and hygiene education as complementary activities it was decided to conduct the evaluation as a comprehensive exercise. The first half of the mission the team was subdivided into a water supply/institutional aspects sub-team and a sanitation/education/participation sub-team. During the latter the mission members worked as one team, yet each member in her/his own field of specialization.

1.4 Methodology

The mission carried out a mid-term evaluation and was specifically asked to come forward with practical conclusions and recommendations for the sof-ware aspects of the project.

In the course of the two weeks the mission started out with collection of information on project activities such as installation of handpumps, gravity systems and latrines, etc. as well as training courses and also research work. Next, the mission visited project sites in the North, the Centre and the South. In the course

of its work the mission drew extensively in a participatory manner on project staff at all levels and on the beneficiaries and the public.

1.5 Programme and debriefing

The programme of the mission is attached under Annex 2.

On the 17th of December 1994 the main findings, conclusions and recommendations, including the recommendations for GON support 1995 were presented and discussed with UNICEF project staff, RNE representative, GOV officials of MOLISA, MOH, MOET and the Women's Union.

1.6 Report

Section 2 of this report provides a background about Viet Nam, the sector, UNICEF and the GON supported project. Section 3 reports on the achievements of the GON support. Section 4 describes the WATSAN functions and procedures. Section 5 presents the outcome of the evaluation concerning the effectiveness, sustainability and impact of the WATSAN project. Section 6 presents a set of recommendations for the WATSAN project and Section 7 provides concrete recommendations for GON support for 1995.
Annex 5 contains the comments of UNICEF on some of the points raised in the evaluation report by the evaluation team on the WATSAN activities supported by the Government of The Netherlands.

2. BACKGROUND

This section starts with a description of the country Viet Nam (2.1.), continues with an introduction of the rural drinking water supply and sanitation sector in Viet Nam (2.2.). Next UNICEF is presented (2.3.) and lastly the SRVN/UNICEF WATSAN project and the GON support to the WATSAN project are introduced (2.4.).

2.1 Country

The Socialist Republic of Viet Nam (SRVN) has an area of some 331,000 km^2 and a coastline of about 3,260 km. Northern Viet Nam is dominated by a range of mountains. The mountain ranges are divided by deep river valleys, the most notable river being the Hong (Red River). The Hong delta is one of the most important agricultural areas of the country. But, the Hong delta area is vulnerable to natural disasters as typhoons and flooding. The central part of Viet Nam is mountainous with small coastal plains. Southern Viet Nam is dominated by the huge Mekong river delta, which is also prone to flooding.

Viet Nam has a tropical climate with a wet season from April to November in the North, September to January in the Centre and from May to September in the South. Rainfall is abundant throughout the country with an average precipitation in the North of 1,700 mm per year, and in the South 2,000 - 3,000 mm/year. The exploitation of groundwater resources is far below the actual safe yields. Groundwater can still be used much more intensively, although salt water intrusion (due to groundwater extraction?) does occur in coastal areas and also the iron content can be very high (up to 20 mg/l).

Viet Nam has presently a population of 71 million people increasing by 1.5 million every year (2.12%). About 80% live in rural areas and 20% is urban (centres of over 5,000 people). The population density of 195 people per km^2 ranks third in the South-East Asian region, after Singapore and Philippines. However, 47% of the people (about 33 millions) live on 17% of the land areas, largely in the two river deltas. The population density in the mountainous areas where about 13% of the mainly ethnic minorities live, is in the order of 15 per km^2.

The growth rate is estimated at 4.2% for urban and 1.5% for the rural population. Although the GDP is estimated at some US$ 200 (1987) the health status compares favourably with that of lower middle-income countries. Life expectancy in Viet Nam is 65 years compared with 58 years on average in lower middle-income countries. And the infant mortality rate varies between 35-65 per thousand compared to the average of 82 for lower mid-income countries.

Viet Nam's economy is primarily based on agriculture, although industrial output has been growing very fast during the past decade. Viet Nam has a high trade surplus, very low inflation, a strong and stable currency and social stability. Since 1986, GOV boosts private and foreign investments and reforms its economy to free market style, "Doi Moi". Under this liberalization policy economic growth is high, up to 8% per year. State enterprises such as governmental water companies are

allowed to determine prices to achieve an acceptable level of cost recovery. But, the other side of "Doi Moi" is that unemployment is rising, some 40% are getting richer but 10% poorer, and social services are declining.

The map in Figure 1 shows the 53 provinces of Viet Nam. The provinces visited by the mission (Bac Thai, Thai Binh, Nam Ha, Quang-Nam-Da Nang and Soc Trang) had populations of 1 to 3 million people. Viet Nam has a total of 557 districts. The lowest administrative level, the commune, may have roughly 6000 to 10,000 inhabitants, living in several hamlets or villages. The commune is administered by a People's Committee and also has a clinic with at least one health staff. There are 100 to 300 communes per province.

2.2 Rural drinking water supply, environmental sanitation and hygiene education

In 1990, the UNDP/World Bank prepared a Water Supply and Sanitation Sector Study for Viet Nam[1]. The sector study provides an overview of the sector status a.o. actual coverage, sector developments and bottlenecks. Although Viet Nam does not experience water shortages the sector study estimated that in 1990 only about 10% of the rural population of 5.2 million had access to **safe and adequate** water supplies, and that the type of supplies depends on the geographic characteristics. Types of water supply include: rainwater catchment in jars and tanks, filtration wells, shallow wells in plains and midland areas and various types of gravity schemes in mountain areas. Research shows that about 25% of the open wells are biologically and chemically unpolluted. UNICEF estimated at the end of 1992 that approximately 23% of the population had access to a safe water supply nearby.

Lack of safe water and poor environmental sanitation as well as poor hygienic habits have been identified as a major factor for high rates of diarrhoeal diseases and parasite infections and other water borne and excreta related diseases which still account for 25% of child death. Furthermore the absence of a safe water source is considered a major factor causing a heavy workload on women and girls[2]. The high prevalence of intestinal parasites in the North (almost 100%) is directly related with the use of human excreta as fertilizer. The coverage with appropriate and hygienic latrines does not exceed 10%.

The general objectives of development efforts in rural water supply, environmental sanitation and hygiene education are thus to reduce the prevalence of water borne and excreta related diseases and to reduce the workload for women and children.

Rural drinking water supply

The main governmental agency for rural water supply is the Ministry of Labour, Invalids and Social Welfare (MOLISA). At national level MOLISA coordinates the planning, procurement and implementation of rural water supply projects. The provincial MOLISA offices are responsible for the provincial planning,

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[1] Viet Nam Water Supply and Sanitation Sector Study, UNDP/World Bank, 1990.

[2] SRNV-UNICEF country programme of cooperation 1996-2000.

transportation and implementation of the activities, including the setting and collection of the contributions from the users in cash and in kind.

Presently the GOV is reportedly reconsidering its rural water supply policies, putting more emphasis on the provision of safe water supplies to minority groups and mountain areas/new development areas and linking it with the elimination of poverty and with urban fringe areas. For the mountain areas the new technique of drilling with rotary drilling riggs will be introduced.
Since the start in 1982 of the SRVN/UNICEF programme, MOLISA has built up a staff of 1500; most of these staff are crew members of the hand drilling teams.

Environmental Sanitation

The governmental agency responsible for sanitation and for quality control of drinking water is the Ministry of Health (MOH). Under the SRVN/UNICEF project the MOH conducts research and develops the policies on sanitation. The MOH also coordinates the planning, procurement and implementation of the sanitation activities at national and provincial level.

Hygiene Education

The Ministry of Education and Training (MOET) is responsible for the provision of water supply and sanitation facilities in schools as well as for the education activities in environmental hygiene in schools. The Ministry of Education and Training is supported by the MOH with education materials.

2.3 UNICEF

The United Nations Children Fund (UNICEF) promotes the survival, protection and development of children[3]. This includes goals to reduce maternal and child deaths, reduce malnutrition, provide more children with primary education, increase literacy in both adult males and females and to protect children from abuse, exploitation, neglect and war in addition to providing safe water and sanitation for all by the year 2000.

The Water and Environmental Sanitation Sector of UNICEF is responsible to implement the UNICEF goals related to water supply, sanitation and hygiene:
* universal access to safe water;
* universal access to adequate sanitation;
* global eradication of Guinea worm disease.

These goals should be achieved by the principles to:
* provide some for all rather than all for some;
* empower communities;
* provide sustainable services;
* achieve health and socio-economic benefits.

[3] Waterfront, Special Issue, UNICEF, March 1994

Main components of the sector strategy of UNICEF include:
* advocacy of new policies;
* empowerment of communities and users;
* sectoral linkages with health, nutrition, etc.;
* capacity-building to expand national and local skills;
* research and development on resource mobilization;
* monitoring and research of coverage, use, performance, etc.

2.4 WATSAN

UNICEF started its cooperation with the GOV in 1975. In 1979, the GOV and UNICEF concluded the Basic Agreement for cooperation. This Basic Agreement still provides the basis for the ongoing cooperation. Presently the project executes its fifth phase.

UNICEF supported the GOV in the form of successive WATSAN (Water supply and sanitation) projects of 4 to 5 years with the following objectives:
1975 - 1980 emergency programme
1980 - 1983 developmental thrust
1983 - 1987 geographically limited areas 6 provinces
1987 - 1991 reduction in incidence of water and excreta related diseases
1992 - 1995 national coverage
1996 - 2000 priority areas

The water supply component in WATSAN has gradually spread throughout the country. In 1981, 3 provinces were involved, in 1984, 6 provinces, in 1987, 13 provinces, in 1991, 36 provinces and in 1993, 53 provinces. The sanitation component started in 1991 with 6 provinces, In 1992, it was introduced in 20 provinces, in 1993 in 26 provinces and in 1994 in 40 provinces. By the end of 1989 about 21,000 wells had been constructed and by the middle of 1993 a total of over 100,000 improved rural water supplies had been installed by the WATSAN project. Beneficiaries together with the provinces usually cover some 60% of the costs. And each province has 6-8 drilling teams, each capable of drilling 100-150 wells per year.

For almost four decades, beginning in 1954, the GOV provided cement to householders for the construction of double vault, composting latrines. The composted excreta was to be used as fertilizer for agricultural fields. A recent survey showed that only about 4% of these latrines are operating. Raw or at best partly composted excreta continues to be applied to paddy and fields, particularly in the Northern provinces. In the Southern provinces, pit latrines are used as well as latrines built over fish ponds for the economically attractive fish culture. The apparent economic gain, seen by the people using excreta in the field or in pond, has stood in the way of demand creation for safe latrines, with properly sealed pits, from where excreta cannot be taken out to the field. Research has shown that about 90% of the population in the Northern provinces and 40% in the Southern provinces are affected by intestinal parasites. These high levels of infestation are thought to be related with the unsanitary defecation practises.

Environmental Sanitation activities in Vietnam, supported by UNICEF, started only recently (motivation of the government Ministries from 1988 and practical demonstration of a suitable latrine model from 1990) and **the project is implemented through the government**. Then in 1990, the GOV, in a courageous decision, developed a new policy to eliminate the use of human excreta as fertilizer and for fish breeding by 1995. But, the government has not come up with any legislation or enforcement measures to eliminate such practises. By 1993, it was estimated that only about 18% of the rural households had access to safe sanitation facilities. Thus while open-air, indiscriminant defecation is common in only isolated mountainous and a few coastal areas, many of the latrines currently in use are used in an unsanitary and unhealthy way. For this reason the focus of the sanitation component in the WATSAN project is to introduce improved latrines, in particular the double-pit, pour-flush latrine.

The UNICEF project is the major element, first in stimulating and now in the implementation of the new GOV policy. This policy represents a sharp departure from the policy over the past four decades, which favoured the compost latrine and the commercial use of excreta for agriculture and fish culture. Except for what UNICEF is trying to do, government's own initiative on social mobilization, advocacy and mass communication to outweigh this situation, is very low and financial support at the central and provincial level is practically nil, except for the school program. Environmental sanitation is yet to be considered as a priority activity by the government. Except for the Dutch and the Australian donation for sanitation in Vietnam, no other international agencies and NGOs have provided support.

According to the SRVN-UNICEF Country Programme of Cooperation 1991-1995[4] the fifth phase for UNICEF cooperation with Viet Nam builds on lessons of previous phases, builds on new Governmental orientations, on the importance of political commitment and social mobilization, on sustainability of goals, on capacity building, on cost effective interventions including cost recovery and empowerment of women and on the strategic goal of access to water and environmental sanitation (WATSAN). The emphasis of the WATSAN project is on mother and child and on primary health care. The earlier geographical concentration policy was replaced with the national coverage policy. The fifth phase was jointly formulated between UNICEF and the GOV. To date UNICEF (with some support from a.o. the Netherlands Government, the Australian Government and some national committees of UNICEF) is the only external agency supporting rural water supply and sanitation development. Up till 1994, the GOV supported the project with manpower and transportation, largely paid by beneficiary contributions. For 1994, GOV/MOLISA supported the WATSAN project with an investment budget for rural water supply development of VND 18 billion. For 1995, GOV/MOLISA budgeted VND 23 billion (US$ 2.3 million).

[4] SRVN-UNICEF Country Programme of Cooperation 1991-1995 (1991).

The specific goals for the WATSAN project as specified in the SRVN/UNICEF Country Programme of Cooperation 1992-1995[5] are universal access to safe drinking water and sanitary means of excreta disposal. To provide, by 1995, access to safe water for 80% of the rural population with the minimum service level (1 water collection point for 300 people with a maximum walking distance of 500 meters) and access to family and community latrines in 50 percent of the communes in rural areas.

The WATSAN project proposal 1992-1995 stipulates the following specific targets:

- **water supply**: 150,000 new water points including 130,000 new tubewells and dugwells equipped with handpumps to supply safe water to an additional 33 million inhabitants with an average of 120-300 people per water point.
- **sanitation**: 400,000 latrines in 5,000 communes (50% of the total number of communes).

The SRVN/UNICEF Country programme 1992-1995 puts the total required UNICEF + External contribution at (in thousand dollars)

Table 1: UNICEF and external required budgets 1992-1995

Item	UNICEF	EXTERNAL	TOTAL
Water supply	4255	17290	21545
Sanitation	920	4490	5410
Schools/Health education	645	2970	3615
project support	2180	0	2180
Total	8000	24750	32750

To achieve the targets for 1992-1995 the required budgets for water supply and sanitation were calculated as presented in Table 2:

Table 2: Breakdown budgets per activity

	water supply	sanitation
physical structures	16,445	3,190
logistics	2,980	1,160
technical development	1,060	
training and cap dev	640	295
monitoring	200	390
social mobilization	200	375

[5] SRVN-UNICEF Country Programme of cooperation 1992-1995 (1992)

3. GON SUPPORT TO WATSAN

3.1 Objectives and inputs

For the period 1993-1995 the GON contributes Dfl 5,378,800 enabling an extension of activities of the WATSAN project[6] to cover all 53 provinces for rural water supply and 40 provinces for rural sanitation. The GON support is meant for rural water supply, sanitation & schools activities.

The specific objectives for the GON support are:

3.1.1 Water supply

The GON budget for water supply was US$ 2,034,844.

- To implement 15,000 supplementary wells and 18 gravity flow systems serving 2.0 million people living in the rural areas.

- To experiment and implement new low-cost techniques for areas where manual drilling of gravity flow systems are not feasible.

3.1.2 Environmental sanitation and hygiene education

The GON budget for environmental sanitation was US$ 616,558.

The objectives of the environmental sanitation activities in the UNICEF project document prepared for the GON are.

- to implement sanitation activities in 200 communes already being covered by UNICEF activities (about 30,000 household latrines) and 200 sanitary systems in primary schools in the provinces covered by water activities.

3.1.3 Capacity building and project Support

The third objective for the GON support is capacity building/project support.

The intended specific objectives include:

- reinforcement of Government capacity at central and provincial level;

- training of government personnel on-the-job, workshops, external specialized consultancies, etc.

To achieve the sanitation objectives, the strategy given in the GON project document called for the construction of the pour-flush, water-sealed latrines in 10% (about 30 latrines) of the households within 5-10 communes of selected districts. The idea was to implement activities which would demonstrate the benefits of the new technology on a broad scale. Education and health promotion to change hygienic behaviours were mentioned as major sanitation activities.

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[6] Extension of Activities submitted to The Netherlands Government for Funding, Programme Code:YW903.

Overall, the physical targets for three years called for the construction of 30,000 to 35,000 latrines with GON support, in addition to the 41,000 latrines planned under UNICEF's own project budget.

The GON project agreement was signed in November 1992 and thus field activities began in 1993. The Netherlands' support is used in the ongoing water supply and environmental sanitation (latrines) components of the WATSAN project.

Apart from supporting the construction of latrines, other aspects in the environmental sanitation component include implementation of smokeless stoves, bathing/washing platforms, soak pits, garbage pits, covered water storage tanks, and a small scale vector control programme aiming to reduce the breeding of mosquitoes (against dengue fever). There is a large, although not costly training component for selected personnel at the national, provincial, district and commune levels. The school sanitation project is connected to the household sanitation project through the motivation of families for latrines via the schools.

The project document for GON support to WATSAN mentions the construction of school latrines. A budget for environmental hygiene education material development or teacher training activities was not foreseen in the project document for the GON support to WATSAN.

3.2 Achievements

Table 3 summarizes he intended physical targets for the existing (UNICEF supported) WATSAN project, the GON supported activities and the expanded project activities. This table shows that the targets for GON support are almost 25% of the total targets and that GON supports almost 50% of the WATSAN sanitation activities.

The project achievements are presented and discussed under the respective headings:

* water supply
* sanitation
* schools activities

3.2.1 Water supply

New water supplies

The achievements and plans in water supply service delivery using the Netherlands funds which are summarized in Table 4 show that the targets for the Netherlands support will be reached by the end of 1995.

Table 4: Achievements in water supply service delivery using Netherlands funds.

Systems	1993		1994 planned		1995 planned	
	Netherlands funded	Total	Netherlands funded	Total	Netherlands funded	Total
Mech. drilled wells	0	188	0	0		
Manual drilled wells	9,332	20,211	2,600	17,817	1,720	
New/reha. dug wells	752	4,705	450	5,333	100	Under
GFS	2	33	13	76	3	prepara-
SSF	24	210	20	423	10	tion
RWT/RWJ	1,051	5,431	1,028	9,635/ 6,700	600	

The field visits confirmed that the annually agreed upon water supply targets are largely reached. The Southern region reported that nearly 90% of the targets for 1994 had been reached by the end of October 1994. Reports on progress in installation of new water supply facilities can be cross-checked with the stock of handpumps and spare parts in the provincial MOLISA store-rooms. The mission found that the store in Bac Thai (Northern region) had only few handpumps and the store-room in Da Nang for the Central 'region' had some 360 handpumps left. These handpumps had yet to be installed. The administrative system of WATSAN thus allows for double checking on the progress as reported e.g. the numbers of new installations installed on the one hand and on the other hand the handpumps in stock.

The accounts on the use of the GON funds are provided in Annex 3. GON funds for the WATSAN project are largely spent on bulk procurement of materials (mainly cement, iron bars, handpumps, HDPE and PVC piping, some plant and equipment). Also some funds have been used for training courses (e.g. for training of masons/health workers, etc.).

For 1995, the GON budget for water supply activities is US$ 321,035 + US$ 12,906,88 (the result of Dfl-US$ exchange rate fluctuations).

Experimentation with new technologies
Experimentation/implementation of "new" technologies such as rain water tanks/jars and slow sand filters, is ongoing. Improvements on the TARA handpumps do not seem to be made. The TARA handpump is hardly being used.

Capacity development
Under capacity development a number of training courses were organized, support was provided to poor communes, a staff member for mobilization was recruited, computers and motorcycles were bought, workshops held, etc.

The mission was informed about the following overall achievements of the WATSAN projects since 1982:

- about 1,500 people are employed through MOLISA for the implementation of the water supply component. Most of these are members of the more than 200 provincial drilling teams in Viet Nam;

- more than 120,000 new water supplies have been provided since 1982, by far most of them being hand-drilled wells equiped with a handpump.

The WATSAN achievements for water supply are lower than the targets set in the SRVN/UNICEF 5 year plan for cooperation, but adhere to the targets for the GON/UNICEF funds. The main reason for the shortfall on the 1992-1995 Country programme targets is shortage of funds. For example, for 1995 only about one quarter of the funds required for the installation of the targetted 31,000 new water supplies have been committed so far.

3.2.2 Environmental sanitation

Physical achievement: In 1993 and 1994, about 30,660 household latrines had been constructed with GON support, fulfilling the target set for household latrines as stated in the project document. The average cost to UNICEF is reportedly US$15 per latrine. This compares favourably with similar projects in other countries. For 1995, a total of 24,569 household latrines and 200 school latrines have been planned with support from all sources.

Table 5: Physical achievements sanitation component

	PHYSICAL ACHIEVEMENT			
Year	GON funds (US$)	with GON support	total annual achieved	GC allocation for sanitation (US$)
1993	402,458 (65%)	24,400 HH*	28,640 HH	172,600
1994	121,786 (20%)	6,260 HH 50 schools*	21,500 HH 300 schools	256,000
1995	92,314 (15%)	9,429 HH	24,569 HH	256,000 200 schools
TOTAL	616,558 (100%)	36,089 HH 50 schools	74,709 HH 500 schools	684,600

* 'HH' means 'Household latrines'. 'schools' refers to primary school latrines.
In addition to the information given in the table above, it should be noted that there are smaller contributions to the environmental sanitation project from other sources.

As noted earlier, the Netherlands contribution has been used for bulk purchase of commodities, as well as (a) the training of trainers, teachers, health workers, provincial and commune functionaries, and masons; (b) training on vector control; (c) monitoring and evaluation; (d) regional and provincial workshops for sanitation; (e) development of training materials; (f) the revolving fund pilot activities in 38 communes; and (g) the national officer for community and women's participation. In about 2,500 communes, 30 latrines have been built (25 for households and 5 institutional latrines). From small experimental beginnings in 1988/89, the project

had expanded in 1994 to 2500 communes within 287 (out of a national total of 557) districts.

The total available budget under Netherland's funding for household, institutional and schools sanitation project amounts to US$ 616,558 over three years. By May 1994, US$ 518,855 (84%) had been expended or committed. Almost three-fourths of this amount was used for commodities for construction. About 20% was used for support activities (training and orientation, studies, planning workshops, evaluation and monitoring, field trips, revolving funds for the pilot project in Thai Binh province). A small amount, about US$ 92,000 remains for the third and last year from the Netherlands' support.

3.2.3 Schools

The GON budget will support the construction of a total of 200 sanitary systems in primary schools in the provinces. In addition the GON budget also supported sanitation activities for schools such as education and promotion a.o. for the printing of sanitation flipcharts, making of videos on water supply, sanitation and environmental hygiene, hygiene education campaigns in 50 schools, training of 100 teachers on hygiene education.

The achievements of the school sanitation project component of WATSAN are:

1991	6 provinces	21 latrines for schools
1992	20 provinces	120 latrines for schools
1993	26 provinces	350 latrines for schools

CONCLUSION

The targets as set in the Project Document for the GON support for water supply, sanitation and school activities in sanitation and environmental hygiene will be reached and even surpassed in 1995.

4. FUNCTIONS AND PROCEDURES

The parties cooperating in the WATSAN project include the GON (MOLISA, MOH and MOET), UNICEF (and other external support agencies a.o. GON), the Women's Union and the beneficiaries.

This section starts with a description of the functions and structures of the parties in the WATSAN project. Next the procedures in WATSAN are briefly presented.

4.1 Functions and structures

4.1.1 Government of Viet Nam

General

Since the mid seventies UNICEF in collaboration with MOLISA prepared Master Plans for the sector, the so-called SRNV/UNICEF Country programmes of cooperation. The country programme for the period 1996-2000 is in its final stages and puts emphasis on coverage partly through revolving funds and private initiative in 17 districts of 17 richer and 57 districts of 19 medium provinces and through subsidies and government programmes in 68 districts of 17 relatively poorer provinces in particular the minority areas.

GOV covers the costs of the salaries of GOV staff and transportation costs including maintenance of vehicles. It distributes the locally produced and imported materials provided by UNICEF according to the distribution plan established by the WATSAN project and to the beneficiaries identified and specified in the annual Plan of Action.

The private sector plays an increasingly important role in the rural water supply sector. This is possible because the skills for implementation and the required materials are made available through MOLISA offices and the materials are locally produced.

Since 1975, the GOV/MOLISA supported rural water supply development mainly with the provision of staff and logistical support. In 1994, the GOV also contributed US$ 1.5 million for investments and in 1995 this will be US$ 2.2 million (including procurement 12 drilling rigs and costs personnel and transport).

In 1994, the Steering Committee for urban and rural water supply was established. The Steering Committee is responsible for coordination and placed under the Prime Minister. A total of 12 ministries are members of the Steering Committee. The Ministry of Construction is responsible for urban water supplies.The implementor of rural water supply activities is the Ministry of Labour, Invalids and Social Affairs, MOLISA.

Rural water supply

The Rural Water Department (10 staff members) of the Ministry of Labour, Invalids and Social Affairs includes sections for Planning, Procurement, Mechanical engineering, Hydrology and Administration.

Each of the 53 provinces have a rural water section under the MOLISA office, headed by a director who is assisted by a vice-director (hydrologist/water engineer), an accountant, 6-8 drilling teams and a driver. The provincial offices are responsible for planning, transportation of materials, collection of the beneficiary contributions, payments of the salaries/local costs, the implementation of the project, including site selection, stores, etc. and supporting maintenance.
At district level very few rural water supply offices have been established.

Environmental sanitation and education
The supervisory ministry for sanitation and environmental hygiene is the Ministry of Health (MOH). The Ministry of Education and Training (MOET) is responsible for the sanitary and hygienic conditions in schools and for basic environmental hygiene education in schools. The Women's Union plays an advocacy and mobilization role for the sector.

The MOH, which supervises the sanitation/environmental hygiene education components of the project has committed staff time, but not (yet) financial support for the WATSAN project. At the provincial, district and commune levels, the local government has also committed staff time and has arranged for the often complex transport of commodities. Local government and MOET provide financial contributions for school water and sanitation facilities.

At national level the MOH consists of the Department (policy), 5 Health Institutes and 5 Medical Colleges. Each of the 53 provinces has a provincial Department of Health, a medical secondary school and a provincial health centre with a hospital and a health education brigade. The 557 districts have a district health centre, a hospital and a health education brigade. Each of the 10,000 communes have a communal health centre with 3-7 health workers. At the village/hamlet level red cross members are found.

No specialised staff have been assigned to the sanitation/hygiene education project component of the WATSAN project.

Studies and specific evaluations about aspects of rural water supply and environmental sanitation are mostly assigned to the National Institute of Hygiene and Epidemiology, the Institute of Computer Science and Cybernetics and the Viet Nam Institute for Environmental Protection in Ho Chi Minh City.

4.1.2 UNICEF

Functions
Implementation of WATSAN is the responsibility of the government services, mainly at provincial level. Apart from the provision of financial support for the procurement of materials (handpumps, HDPE, cement, iron bars, etc.) UNICEF also provides expertise to assist in development, implementation, monitoring and evaluation of the rural water supply and sanitation project, mainly directly to the provincial levels. Because of the expansion of the project to nationwide scale, as well as the launching of new technologies UNICEF worked at reinforcing the

technical expertise. UNICEF promotes the local production of equipment and materials, and actively conducts quality control. For all these activities UNICEF has a staff of technical support officers, paid out of the UNICEF budget.

UNICEF staff

Michael C. Nowacki	Senior Project Officer, Chief, WATSAN Section
Mohammed Omar	Project Officer, Water
Waldemar Pickardt	Project Officer, Water
B.K. Das	Project Officer, Sanitation
Nguyen Trong Quang	Assistant Project Officer, Water, HCMC
Hoang Thuy Lan	Assistant Project Officer, Communication & Social Mobilization
Nguyen Quy Hoa	Assistant Project Officer, Water
Nguyen Quang Quynh	Senior Project Assistant, Sanitation
Le Quang Vinh	Senior Project Assistant, fund and supply monitoring

The permanent UNICEF office in Ho Chi Minh has 1 water supply officer to coordinate and monitor WATSAN activities in the South.

4.1.3 NGO's e.g. Women's Union

The Women's Union started in 1994 in the WATSAN project with advocay and mobilization activities in water supply and sanitation in 4 provinces with an integrated water supply and sanitation development approach.

4.1.4 Beneficiaries

The beneficiaries pay for the labour costs and also contribute in kind (locally available materials such as sand and stones). The beneficiary contribution amounts to between VND 300,000 and VND 900,000 for a borehole and handpump and around VND 150,000-300,000 for a latrine. The local contribution towards the labout cost for a gravity fed system is partially paid by the district and partially subsidized by the central government.

4.2 Procedures

4.2.1 Water supply

4.2.1.1 Planning

National level

MOLISA/MOH/MOET/UNICEF prepared the SRVN/UNICEF Country programmes of cooperation for 1991-1995 and 1996-2000. These Master Plans set the 5 year targets for the WATSAN project for water supply and sanitation and also present the required budgets.

The fixing of the annual targets for water supply, sanitation and education is concluded in annual meetings between MOLISA/UNICEF and the provinces for water supply and between MOH/UNICEF and the provinces for sanitation. For example, for 1995 the target in the SRVN/UNICEF Country programme was set at

31,000 water supplies for a budget of US$ 5.3 million. However the available funds for 1995 suffice for the implementation of about 25% of this target. The allocation of the targets and the budgets for 1995 per province will therefore have to be reset to match the available financial means. The allocation of the numbers of wells per province is decided between MOLISA and UNICEF based on need, poverty, etc. and discussed with the provincies in a national workshop of UNICEF, MOLISA and the provinces.

Provincial level
The provincial MOLISA office prepares a provincial water supply Master Plan. The priorities in this plan are based on criteria of priority such as:
- epidemic situation;
- technical feasibility;
- financial ability;
- social aspects.

Since most Rural Water Supply offices at the provincial level have a limited capacity UNICEF assists the provincies with the preparation of the Master Plan of Operations.

4.2.1.2 Site selection

Site selection is done once the annual allocations per province are fixed. Site selection is done by a commune leader (commune council) and a MOLISA staff member. Sites are determined using the criteria:
* down payment for labour costs (between VND 300,000-VND 900,000);
* within a "private" yard for reasons of proper care.

A realistic assessment of the number of expected users (based on need and interest to use/contribute to a communal safe water supply) is not used as a site selection criterium.

The above two criteria are thought to have led to a very dense coverage of handpumps in for example Daidong, Da Nang, where the mission found a handpump in the yard of almost every other household. This is one reason that the distance from the source to the household is not up to 250 meters (as planned in the 1996-2000 plan) but often down to as low as 20-50 meter.

Although handpumps were located on 'private' plots, the mission found that access to the handpump did not form an obstacle for anybody who wanted to use the handpump. But, yet, even the direct neighbours to households with a WATSAN provided handpump, living within meters from the handpump, often had and used their own mostly open dug well, rather than the WATSAN handpump. This practise makes that the WATSAN handpumps in practise operate as private or semi-private water supplies for only a very limited users in the areas where open dug wells are abundant.

UNICEF informed the mission that it was aware about this situation and that it was introducing an agreement between the plot holder of the handpump and the community people's committee with the objective to stimulate communal use of the

handpump, by formalizing the communal ownership of the handpump and the communal responsibilities for operation and maintenance.

In some areas in the South (Soc Trang) there was a demand for public wells under group ownership. This was related with poorer families. In these areas where water is vended (at VND 800 per 40 liters or US$ 1.8 per m^3) the cooperation between a number of households managing the water supply point(s) may not require the handpump being placed inside a private fence.

4.2.1.3 Management

The provincial rural water supply offices of MOLISA are primarily implementing (from design till commissioning) and supervising the water supply activities, with the support of occasional supervision by UNICEF staff. This supervision includes checking the drawings for the gravity flow systems. UNICEF is responsible and arranges for the procurement of the externally funded materials (handpumps, HDPE pipes, cement, etc.). But transportation from the factory to the water supply sites is the responsibility of the provincies.

Apart from the WATSAN subsidized wells most of the provincial drilling teams also install private wells. For private wells the procurement of the handpump and other materials is to be paid for by the owner (between VND 2 to VND 3 million).

4.2.1.4 Implementation monitoring

The provinces forward monthly reports about implementation progress to UNICEF. UNICEF randomly and occasionally monitors implementation activities, mainly construction activities in gravity flow systems.

4.2.1.5 Supplies

UNICEF procures the required materials (e.g. handpumps, HDPE, cement) mainly in bulk from local manufacturers and from abroad (international tenders) on the basis of the agreed annual plans. The materials are collected by the provinces from the port or manufacturer. The provinces also deliver the materials to site. Reportedly budget or transport constraints of MOLISA/rural water supply departments at the provincial level sometimes affect/delay actual collection and delivery of project materials. The provinces have established a stores record system to account for the collection and use (deliveries) of the materials.

4.2.1.6 Functioning and maintenance

UNICEF estimates that over 85% of the handpumps are in working order. A systematic and regular system to randomly sample the actual use and functioning of 5-10% of the handpumps combined with quality control and sociological surveys, a UNICEF activity stated in the SRVN/UNICEF Country programme 1992-1995, has not been set up yet.

UNICEF issues a set of spares and training in repair to the caretaker of the handpump.
A support structure (marketing outlet for spares, etc.) for maintenance has not been established.

4.2.2 Environmental sanitation

4.2.2.1 Planning

Similar to water supply the targets for sanitation e.g. number of provinces and districts and communes under the project and the number and type of facilities per commune are set in the Country programmes. The fixing of the annual targets per province is also done in an annual meeting between MOH/UNICEF and the provinces. The annual targets are based on available/committed budgets.

An annual plan is prepared by provincial authorities (usually the head of the Hygiene and Epidemiology Centre or the vice-director of Health Services) together with UNICEF. UNICEF sets the guidelines, such as determining the maximum number of latrines which will be supported per commune (about 5 institutional and 25 household latrines in the past project), the level of support per latrine and the maximum amount of the household loan in the pilot areas. The plans are then implemented on the basis of the availability of funds, meaning in practice that there are cut-backs in implementation over what had originally been planned.

4.2.2.2 Management

The organization of the project is hierarchical. A Provincial Steering Committee exists in most provinces for the WATSAN sector, under the People's Committees. The Steering Committee is comprised of the authorities of different services: Health, MOLISA, Education, Water Resources, etc. This Committee prepares and coordinates the activities under the recently-developed provincial Master Plans for sanitation.

The Director of Health Services in each province oversees the environmental sanitation project. Actual implementation is under the direction of the Health Service vice-director or the Director of the Centre for Hygiene and Epidemiology in each province. Storing and transport of UNICEF commodities is the responsibility of Health Services in each province.

At the district level, the counterparts of the provincial leaders in health services manage the project and provide training. There are exceptions to this. For example, in Thai Binh province,members of the Provincial People's Committee and the special staff of the Regional Medical College have been deeply committed to work at all levels.

4.2.2.3 Site selection

The selection of communes/districts reportedly follows some general criteria (epidemiology, financial ability, minority population, etc.) which are apparently refined locally in consultation with UNICEF.

At the commune level (about 1000 households), the vice-chairman of the People's Committee and the staff member (usually there is only one) of the Commune Health Centre identifies the beneficiary families and manage the project.

4.2.2.4 Training

UNICEF provides training to leaders who, in turn, train others in their provinces and districts. Training has been provided to commune leaders, health workers, motivators (related to the Women's Union), local masons who do construction and can train others, teachers, school principals. In pilot areas of Quynh Phu district of Thai Binh province, which may serve as part of the model for future work, up to 2% of the people in some communes have received training or orientation.

4.2.2.5 Family motivation

For the family, motivation and information about the programme can come through several channels. These may be the Women's Union, the schools (where children bring home forms for latrine applications), through the Commune leaders and masons.

The families, in the current project, pledge to construct a latrine and receive 2 bags of cement, 5 kg. of metal, pan with built-in trap. Construction usually has to occur quickly while the cement is still viable. The families provide all the other materials (bricks, more cement, roof, door, pipes as needed) and pay the masons directly for their labour. Family contribution is reportedly Dong 150,000 to Dong 300,000 (US$ 13 to US$ 27) or more if a bathing area is attached. Latrine superstructures (the 'little houses') are sturdy, generally expensive. Septic tanks were preferred in the areas seen in the North, as the overflow is used with ash in the gardens. In the Soc Trang province of the South, a single-pit with cement rings and vent-pipe was most frequently seen. Families seen with UNICEF-supported latrines also often had smokeless chulas (not always used), rain-water catchments or garbage pits. There did not appear to be follow-up monitoring or post-construction education.

There is considerable variation in the implementation of the project (technology, designs, family contribution, payback periods, family selection) among and within provinces. It appeared to the mission that the management skills and level of commitment to the project differed in the three provinces and the communes visited.

4.2.3 Schools

Under the WATSAN project sanitary facilities were constructed in 350 schools in 1994.

UNICEF provides about 25% (or less) for construction of primary school water and sanitation facilities. MOET contributes Dong 2 million (US$182) to each primary school implementing water and sanitation facilities of the WATSAN project. The provinces, districts, communes and parents contribute the remainder.

UNICEF has supported separately the production of health education materials for primary schools.

The Director of Education in each province is responsible for administering the programme in the communes, including the training of teachers.

Schools are not the only institutions which benefit from the UNICEF project. In Nam Ha province, for example, by the end of 1993 wells had been provided to: 161 health centres, 203 schools, 279 creches, 178 locations in the new economic zones.

School children take application forms home for latrines. Teachers are also required to construct improved latrines in their homes.

5. EVALUATION

This section evaluates the WATSAN project. The evaluation is thus not limited to only the GON supported activities. The reason is that the GON funded activities are integral and inseparable part of the WATSAN activities.

5.1 Water supply

The evaluation of the WATSAN water supply activities considers:

- planning;
- management;
- effectiveness;
- sustainability;
- impact;
- motivation, information, communication.

5.1.1 Planning

The five year project formulation cycle for national level (SRNV/UNICEF country programmes for cooperation) has proven to be an effective mechanism to direct the programme. It enabled setting and revising the project objectives according to the situation and the needs. It is also effective for fund raising. The five year plans for the provincial level are effective tools for project implementation in the provinces.

The annual meetings for water supply between UNICEF/MOLISA and the provinces and for sanitation between UNICEF/MOH and the provinces to fix the provincial targets in relation to the available budgets also is a useful mechanism, despite the rather substantial discrepency between the targets in the Country programmes for WATSAN and the actual available means (finance) for implementation, because of which substantially less than the targets (only 25% in 1995) will and can be realized.

The budgetary constraints will likely continue during the coming years. This is one reason to reconsider the national project targets and indeed the overall project objective to provide safe water to everybody. The interest in private wells may provide and accrue income with which poorer settlements may be cross-subsidized. This deserves investigation by MOLISA and UNICEF. Also the introduction of revolving (credit/subsidy) funds may provide a good mechanism to relieve the financial dependance on external support. But, these alternative ways of financing will need to be set up properly, which requires careful design and implementation. A challenge to SRVN/MOLISA and UNICEF. The actual work involved should not be underestimated.

5.1.2 Management

The planning, administrative, logistical and technical management of the water supply activities under the WATSAN programme are in general effective and efficient. Clear distinctions in tasks and responsibilities for the cooperating parties in the project have been developed and are being followed. Some provincial rural water supply offices experienced transportation problems because of insufficient budgets or lack of transport.

Although the UNICEF water supply team is small (5 members) it works effectively for the ongoing activities. It is recommended that the team takes on also developmental activities such as presented in the recommendations for gravity flow systems, setting up a maintenance system for handpumps and setting up procedures and capacity for the provision of private wells. A basic question is: should private wells remain in the government realm (MOLISA or a governmental institute) or should it be left to the private sector. And what are the criteria for public and also for private wells? If the present UNICEF staff is not able to develop the new activities UNICEF support from elsewhere is recommended.

5.1.3 Effectiveness

5.1.3.1 Boreholes and handpumps

Institutional capacity:

** Delivery capacity*
WATSAN has built up an effective delivery capacity in MOLISA at national and provincial level for boreholes and handpumps. Local production of handpumps and spares is available in Ho Chi Minh City. Each province has a number of drilling teams with a capacity surplus to the needs of the WATSAN programme. Some provinces allow the surplus capacity to construct private installations.

The WATSAN/MOLISA project is supported by a.o. television campaigns for water supply and by the work of the Women's Union at grass root level.

** Annual targets*
The annual targets of the WATSAN project are reached by most provinces. At the end of October 1994 the Southern Region had achieved 88% of its target for 1994.

** Implementation standards*
The field visits found that the implementation standards for drilling and handpump installation are generally good. But, in Bac Thai wells were found to be very shallow because of shallow bed-rock (only some 10 meters deep).

Geohydrological information (vertical profiles, depths of sweet water aquifers and their quality, etc.) was scant.

Beneficiaries, use, coverage and per capita costs

** Beneficiaries*
Handpumps are preferably (WATSAN policy) installed inside fences of "private" yards, mostly of middle and upper income level households. This policy is apparently partly to ensure proper care for the facility, but also serves the need of the WATSAN project that a deposit is paid for labour varying from VND 300,000 in the North to VND 900,000 in the South. This WATSAN policy in practise works out to favour the middle and upper income level households. In addition, the cost for a private dug well and a private borehole plus handpump in peri urban Ho Chi

Minh were reported to be VND 2.8 million and the price of a WATSAN borehole and handpump is only VND 300,000. In some places (Xom Dong, Bac Thai at 12 m depth; Daidong, Da Nang 18 m depth and Tiung Binh, Soc Trang at 114 m depth) handpumps were found very close to each other (every second or third house). Siting is mainly done by the technician of the drilling team assisted by a commune representative, mostly a man.

** Use*

Actual use was only observed (qualitative assessment), not measured (quantitative). The mission found that all purpose users of the UNICEF provided handpumps or gravity systems (for drinking water, washing, bathing, gardening, etc.) were those people living a few meters from the water supply point. All purpose use of handpumps was often limited to the household owning the plot where the handpump was installed. These households living a little further away used the UNICEF water supply only for for example drinking water or washing clothes or irrigation. In Trang Xa, Bac Thai some tanks of the gravity flow system were used for garden irrigation and washing clothes (exclusively?). The traditional dug wells continued to supply water for drinking, cooking, and washing. Possibly the improved supplies may be used more intensively during the dry months of the year.

** Coverage and per capita costs*

A UNICEF breakdown of the costs for water supply systems and sanitation facilities are provided in Annex 4. The costs for different water supply systems and the number of potential users as well as the costs for latrines, according to UNICEF, are summarized in Table 6.

Table 6: costs (US$) for water supply systems and latrines

type of facility	Cost	Number of users	Cost per capita
1 Water supply			
- tube well 50 m	180	120	1.5
- tube well 100 m	250	120	2
- new dug well 10 m	80	120	0.7
- SSF 500 l/hr	100	120	0.9
- mechanically drilled well	5,100	120	45
- gravity system	6,000	3,000	2
- iron removal plant	30	120	0.3
2. Latrines			
- household double pit	20-30	6	5
- household single pit	20	6	3
- kinder garten	65	40	1.5
- primary school	1,350	400	3 5

The cost of one latrine ranges between US$ 20 - US$ 30 of which some 50% is provided in the form of materials by UNICEF. This is too costly for the poor. Cheaper pit latrines should replace the double vault and poor flush latrines.

Handpumps often provide an additional water supply to households; additional to household level rain water catchment or dug wells or river water. Multipurpose use (drinking water, cooking, washing, bathing) from the handpumps is often limited to the 'owning' household and possibly 1 or 2 close-by neighbours. Thus about 6 up to possibly 18 people. In addition to those 6-18 full users, the handpumps may be used by another 2-3 families (12-18 people) for drinking water/tea (single purpose). Actual coverage of handpumps is thus estimated to be in the order of 10-20% of the design coverage. This would mean that the investment costs come to some US$ 20-US$ 30 per capita, still acceptable, but not véry cheap. Reportedly there are also areas where alternative sources are limited or inadequate. In these areas the number of households served by one water point will be higher.

Quality of water

A number of boreholes especially in the South provide water with a high iron content (up to 12 mg/l in An Hiep, Soc Trang). Some wells are not being used for this reason. Iron removal plants are scarce. Use of water depends in part on the perceived quality "tea test" and iron has a strong taste. In Thai Binh all visited handpumps were equipped with an iron removal filter. Iron removal plants were not regularly cleaned. Some plants were filled up with iron flocs.

Especially women (the main users of the water points) should be trained and encouraged to clean the iron filters regularly.

The visited slow sand filter in Nam Ha was performing well.For coastal areas salinity was reported as a water quality problem. And for lime stone areas hardness was reported as a water quality constraint.

5.1.3.2 Gravity Flow Systems

* *Delivery capacity*

MOLISA established a capacity for surveying, design and supervision of gravity flow systems at national and provincial level which is able to implement a number of simple gravity systems. Each gravity flow systems implemented by UNICEF provide safe water for few hundred to about 4,000 people. In 1994, 74 gravity flow systems were constructed with UNICEF assistance WATSAN program serving a disign population of 199,800 (not 4,000 per year as indicated in the report). In Viet Nam a total of 8 factories in different provinces from North to South produce handpumps and parts. UNICEF carries out a rather intensive supervisory role (2 engineers) for design and implementation.

* *Implementation standards*

The implementation standards of the gravity flow systems in Trang Xa, Bac Thai and Giang, Da Nang province were found sufficient. It was understood that close supervision on design and construction by UNICEF remains important for the future.

Gravity flow systems are constructed in mountainous and hilly areas. The systems are providing water of good quality (from within a forest boundary or a spring) to the inhabitants of an entire community of mostly ethnic minorities up to 4000 users.

* *Household water consumption*

The two gravity flow systems in Bac Thai and Da Nang provide an additional water supply to the community. The existing water supplies include mountain streams, rainwater catchment and dug wells. The gravity flow systems pipe water from the source to centrally placed water tanks. These tanks are up to possibly 100 meters from the homesteads. It was observed that the traditional water sources of the households (a well or rainwater catchment) continued as the source for cooking and bathing (privacy). The gravity flow systems provide water for gardening and for washing clothes at the slab of the tanks. Thus, household consumption of the safe water provided by the gravity flow systems is very low. Because of the low use of the facilities actual cost effectiveness is a percentage of the design cost effectiveness.

* *Other piped system*

In Nam Ha groundwater is not easily available (limestone and granite). For this reason a piped system pumping treated river water into a small reticulation system to serve a design population of some 3,500 families (15-20 families per public tank) was installed. The mission estimates that in reality 5-7 families per tank and in total some 1500 families benefit from the system.

The public tanks were placed along the road, which seemed to benefit the upper income levels more than the lower incomes who were living away from the main road.

5.1.4 Sustainability

The sustainability of the water supplies was looked at from the point of view of operational performance, actual care and maintenance.

5.1.4.1 Boreholes and handpumps

Operational performance

The operational performance of the boreholes was found to be good in general. No cases of reducing yields, decreasing water quality or collapsing of boreholes was observed nor reported or found. Only very few handpumps were found not working. A survey on the functioning of handpumps in the rural areas conducted in 1992 and 1993 by the Ministry of Science, Technology and Environment and the Institute of Public Health and Epidemiology, indicated that more than 90% of the handpumps installed under the project were functioning fine.

The Director of the Rural Water Supply Department in Soc Trang reported that about 5% of the handpumps are out of order. The good performance is obviously strongly related with the yet short lifespan of the boreholes and the handpumps to date; most handpumps are not older than 5 years.

User care

Handpumps and slabs were found in good condition. Some slabs were filthy in Nam Ha. Destruction of slabs or handpumps was not found. This may be related with the location of the boreholes and handpumps, mostly inside fences of private yards.

Maintenance
WATSAN provides for initial maintenance by training a handpump caretaker on repair of the handpump and by supplying a set of consumable spares and a set of tools. A spares supply outlet system had not been established yet, whether through the GOV/MOLISA or through the private sector. The provinces did not have a spare parts stock, nor a budget for spare parts procurement.

5.1.4.2 Gravity flow systems

Operational performance
The operational performance of the gravity flow system visited in Trang Xa, Bac Thai Province was good. Regular cleaning of the intake of leaves and debris of the Bac Thai system is required. The intake and top section of the Giang gravity flow system in Da Nang province will need regular inspection especially after heavy rains. The sources of the two visited gravity systems have sufficient flows into the water supply networks, even during very dry spells.The distribution lines up to the tanks need regular checking on pipe breaks or leaks. And the tanks will need occasional and regular cleaning. For all these activities a regular operation programme by the users is required. This programme is not functioning yet.

User care
No problems were observed concerning the care or carelessness of the users. It was observed that a number of tanks were connected up to private gardens and even a private house.

Maintenance
A regular maintenance system for the gravity flow system has not been established in Bac Thai.

5.1.5 Impact water supply
The impact of WATSAN water supply activities was considered on the GOV and on the user level.

GOV
The WATSAN project has and had a great impact on the development of capacity for the implementation of handpumped boreholes and gravity flow systems in the GOV at national and provincial level and on the achievement of the sector policy targets of the GOV.

The impact of WATSAN on the development of capacity for gravity flow systems is not so great yet.

User level
The impact in terms of benefits of the handpumps and the gravity flow systems on the living conditions of the poor is limited. The handpumps mainly serve the upper and middle income levels. Handpumps and gravity flow systems serve as an additional water supply, providing women and children with clean water for

drinking. Gravity flow systems provided women with water to wash clothes (gravity) and water vegetable gardens.

The impact of the safe water supplies on health is regarded minimal. Contamination risk of the safe water between the water supply point and the mouth (moment of consumption) is expected to be high when water is stored in a container.

Some users benefit from the water supply because it is used for raising livestock (pigs and chickens) or feeding ponds (for turtle raising). It also provides water for small scale garden irrigation in the dry season.

Reportedly some water supplies offer time savings in mountainous areas on water fetching, but the mission did not find any evidence for this claim.

5.1.6 Motivation, information and communications

The WATSAN project has effectively promoted national coverage of the handdrilled boreholes with handpumps, less so iron removal filters, gravity flow systems and hygienic use of rain water jars. For the future it is recommended to pay more attention in information and communications on optimizing use, proper care and impact of the improved water supplies. Also more attention should be given to maintenance and on the criteria for a WATSAN supported water supply versus private supplies.

5.2 Environmental sanitation

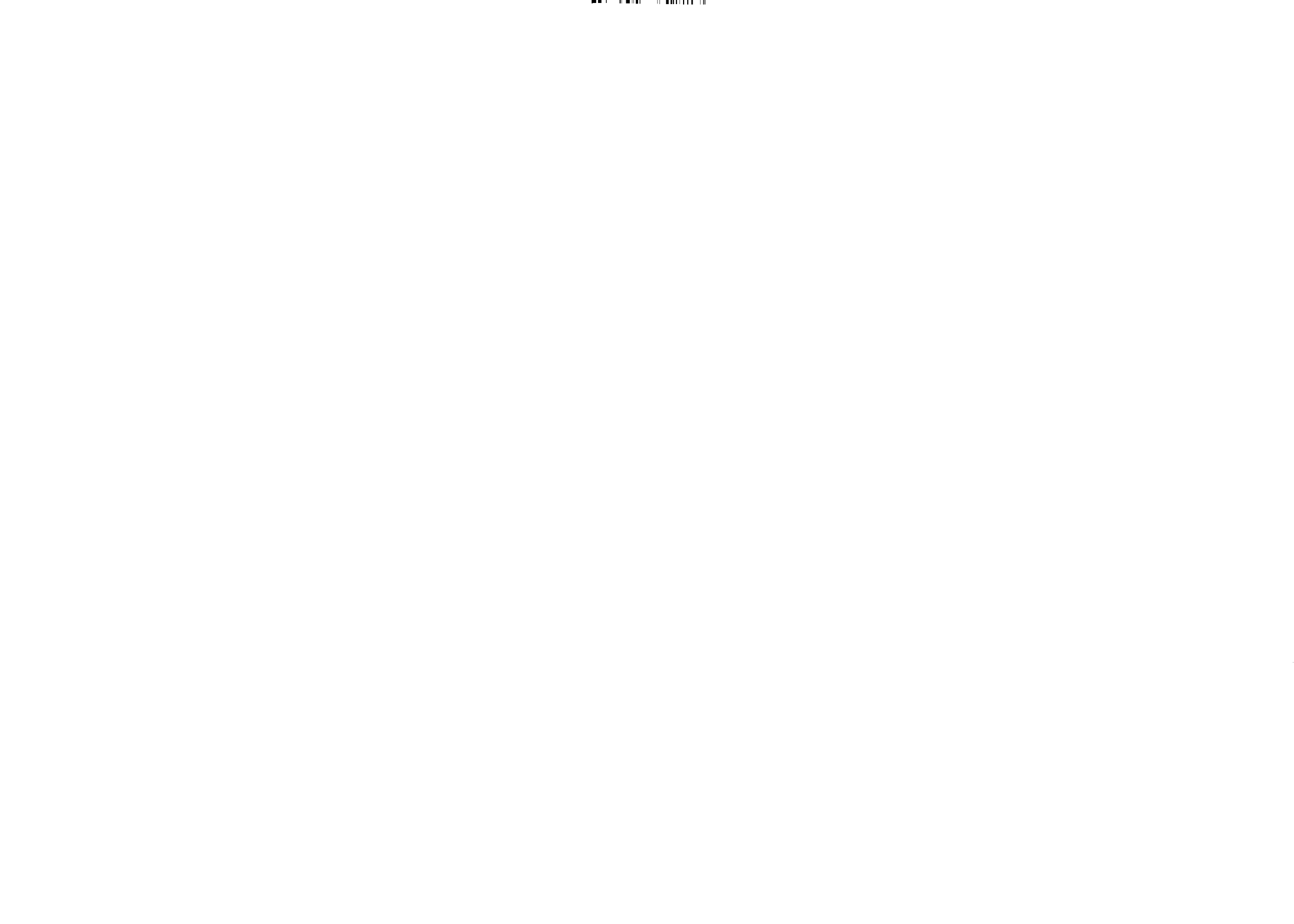
The mission visited two provinces where there are pilot activities in sanitation: Thai Binh province where the intensive project in one district seeks a high level of coverage using revolving fund schemes and Soc Trang province where there is intense participation by the Women's Union. The mission did not see latrines which are more than 2 years old.

5.2 1 Effectiveness

5.2.1.1 Targets and objectives

The objectives of the WATSAN project and the GON support to WATSAN are target-oriented. The stated objectives call for construction of 30,000 household latrines in three years. This number had been completed in two years, a far better record than many projects elsewhere. Steering committees and training at all levels have been used to build institutional capacity for the conduct of the project.

From the beginning in 1988 to the end of 1994, the WATSAN project will have completed about 126,000 household latrines in about 2,500 communes out of the roughly 7000 communes in the country. This is a considerable achievement, however, it falls short of expectations. The SRVN-UNICEF Country Programme of Cooperation 1991-95 had called for the construction of 400,000 demonstration latrines in 5,000 rural communes. The targets were ambitious for a new project. The achievement by the end of 1995 will be about 150,000. This is due to lack of funding and, perhaps, weak demand, as described later.



Visits were made to Thai Binh and Nam Ha provinces in the North and Soc Trang province in the South. In Thai Binh, where an intensive coverage project is on-going, there was a high level of awareness about the stated targets of the demonstration project for 1990-1995. Thai Binh, has provided latrines for about 50% of the population of a few communes working with revolving credit. Targets also include implementation of smokeless stoves (chulas) and sometimes bathrooms and garbage pits. In Soc Trang, where a pilot project is being carried out through the Women's Union working with Health Services, the target for each of 6 communes is 100 latrines, 50 smokeless stoves, 100 bathrooms, and 100 garbage pits. These targets are largely being achieved as is also reportedly the case in other provinces. Where the targets are higher, and the effort is to serve a greater proportion of the population, there is greater involvement and knowledge about the project among district and provincial authorities.

Target audience: During the field visits, all latrine beneficiaries were middle or upper income families except for one; a poor family, in Soc Trang province, had dug a pit latrine, without project subsidy, motivated by the Women's Union field worker. The revolving fund pilot activity currently being tried out in Thai Binh is targeted for middle-income groups who said the pay back was within three months. However, UNICEF noted in its **Situation Analysis of women and children, 1994** that the threats arising from income disparities are serious in Viet Nam. Thus, it is probably important that the sanitation (and water) project not accentuate the economic differences between groups by providing loans or free materials to middle income families.

It is important to go beyond construction targets and numerical objectives. This would mean developing area-specific objectives for sanitation with targeted audiences. These objectives may relate to: building demand and commitment to safe disposal of excreta, the appropriate use of latrines, specific and consistent household behaviours that can have a beneficial impact on health. Because of the provincial and regional differences in Viet Nam, objectives should be modified to suit the area. However, **all families** could be targeted for education, to build demand; while only **below-middle income families** are provided with direct service. Seen this way, the construction of latrines would not be the major project objective. The latrine would be a tool, part of the strategy which is meant to be used for improved hygiene, hopefully with a beneficial impact on health.

Involvement: The UNICEF-supported project, which has been operating in selected communes, within 53 provinces in Viet Nam, has had substantial involvement of personnel within Health Services, provincial Centres for Hygiene and Epidemiology, the Women's Union and local government. Collaboration has been initiated with the Viet Nam Women's Union to enhance community development, promotion of hygiene practices, alternative methods of financing construction.

Research: has been carried out by the Ministry of Health through institutions such as the Thai Binh Medical College, a regional medical institution. Topics of research are varied, and include vectors of contamination (mosquitoes), construction of latrines, alternative energy sources for cooking, low-cost construction techniques for

latrines. Such research is a small but significant element which not only enriches the project but stimulates capacity building within the institutions concerned.

Pilot activities: An interesting pilot project in one district of Thai Binh province in the North has been carried out for intensive project implementation. This also uses revolving funds for implementation (loans per household up to US$ 18) to reach middle-income families. It is noteworthy that the payback for the revolving fund is above 95% from the families involved. About 4,100 latrines have been completed with the revolving loan scheme, in addition to 4,800 latrines throughout the province following the standard project. Another interesting pilot activity observed involves the Women's Union in intensive motivation and follow-up in Soc Trang province of the South. A new national officer has joined UNICEF, under GON support, with responsibility to enhance the involvement of communities and the women within them.

UNICEF staff have noted that to provide 500,000 latrines under the current project would cost about US$ 10 million, an amount which will not be available. Therefore, following on the recent pilot activities, UNICEF, working closely with colleagues within the Government of Viet Nam, has revised the working strategy for the future. The **UNICEF Country Programme of Cooperation 1996-2000** aims to achieve a high level of coverage (60%) in as many communes as possible within 200 districts (out of 557 in the nation), working with revolving loan schemes. This revision of the project is also based on the recent involvement of UNICEF staff in the field. It should be noted that UNICEF has been actively involved in the field areas for only the past 2 to 3 years. Therefore, the sanitation project is quite new.

5.2.1.2 Demand and communication

Mobilization has been fairly good at the level of the commune and province to meet and even surpass construction targets; and, a great deal of sincere effort has been put into the project within Viet Nam. However, the mission was often told that demand is not high for latrines that dispose of excreta safely. Typical comments were:

" People think excreta should be in the fields."

" People highly appreciate the (septic) latrine as they can use the excreta or water for gardening."

" We need to learn about the benefits of latrines so we can explain this to people."

Other indications of low demand or lack of commitment were:

- the tops of septic tanks are not firmly cemented (could be dug out);
- families complained that they had no land for a latrine, when in back of the house they had a field of rice;
- a provincial director of health stated that people like the 'Sulabh' model as they can use the water for gardening (lack of understanding of the technology and its purpose).

Of the seven reasons most frequently given for not reaching more people, especially below middle-income levels, five are related to demand and communication:

- belief in the value of excreta;
- 'when people want a latrine, they don't know where to go.';
- after motivation, the slab and materials are not always available, so families lose interest;
- need to mobilize the poor, for example, through savings clubs;
- cost of models are too high. People want expensive latrines;
- speed of construction is high, so poorer people can not pay quickly;
- lack of land.

If construction comes without real belief or commitment, then the project will probably not succeed. The lack of demand and commitment may be a limiting factor. Furthermore, the Vietnamese people have succeeded in very difficult programmes, at low cost, when belief is deeply held. Therefore, it is probably well worth the investment to plan carefully, and open communication and education activities ahead of construction. In the long run this may save time and money. At this time, the economic value given to excreta (and low level of household hygiene observed in some areas of the North), will undermine the efforts made to provide improved hygiene and water facilities. If commitment to the latrine activities is strong, then through participation at all levels, solutions can probably be found within the provinces to the challenges of reaching poorer families, reducing costs, and finding alternatives for those with very little land.

5.2.1.3 Strategy, implementation and management

Strategy

The sanitation plan for 1996-2000 aims at 60% coverage in selected communes. This is a different strategy from the current plan which aims at 10% coverage with demonstration latrines. The earlier strategy probably would not enable a health impact and meant that local activities were of such small scale that it was difficult to assign priority to them locally. The intensive activities observed in Thai Binh and Soc Trang provinces support the change in strategy towards greater concentration.

Implementation mode

There is variety in implementation among the provinces, which, given the variety of local circumstances is logical. Variations among provinces were seen, for example, in designs of latrines and the management of revolving funds. However, not all the key guidelines were well known, particularly relating to the nature of the intended target audience and the technology, which does not appear to be generally well understood by some of those involved in implementation. For example: a facility was shown to the mission in an urban area. The officer in charge of sanitation in one province was not aware that the two pits of the latrines are leaching pits. Field workers in the South did not know how deep to dig pit latrines (where paper is deposited). These last dug pit latrines were probably less hygienic than the former pond latrines.

Transport
Transport of commodities has presented challenges at all levels. UNICEF and provincial authorities have made special efforts to deal with this, although the timing and transport of cement (2 bags), metal (5 kgs) and tap/pan to the householder is difficult to control, especially given the rural nature of the project. Provincial and local authorities must transport small amounts of materials to distant householders. When a large shipment of materials was late, purchase was made on the open market and then paid in kind when the commodities arrived. There were several comments that the mobilization of families is difficult to time with the uncertain arrival of the commodities. This is a challenge encountered by sanitation projects in other countries as well.

Attitudes authorities
Interest in the project seemed uneven among provincial and commune personnel. Some were very committed; others less so, even though they had been through training programmes. Special communication and education activities may be needed among those involved in providing service. The mission was told that challenges in developing commitment among provincial, district, commune official, teachers and members of mass organizations include:

- belief in the value of excreta as a fertilizer;
- have other priorities in work. This was especially indicated for health staff;
- not know how to reduce costs of the latrine. need more technical knowledge about design and construction;
- no reward for the work. Staff are underpaid. It was pointed out that in the water project, staff make extra money through private drilling work. The same is not the case for the sanitation project.

Household level
Mobilization of families is evident in payment and provision of commodities. However greater community participation and mobilization is needed in the selection of families, in education/orientation activities and in decisions regarding project management such as the development of alternative loan schemes or subsidies for the poor (for example, productive loans where profits or savings can be used for latrines).

5.2.1.4 Selection of families and capacity to pay
Selection of the families is done by the head of the commune and the health staff based in the commune. The families must be willing and able to pay for the masons and provide extra cement, bricks, door. The families who were questioned in the three provinces said that their payments were 150,000 Dong to more than 500,000 Dong where a bathroom was also added. All but one of the families seen with subsidized project-built latrines seemed to be from middle economic groups. The reasons for this may be the expense of the model, the rather expensive superstructures seen on many of the latrines which drives up the cost, and that

poorer families have other priorities and little ready money. The superstructures (the 'little house' on top of the latrine) were usually made of bricks, plastered both inside and outside. These should be made less costly, as is apparently planned for the future project. UNICEF, its is Country Plan of Cooperation '91 - '95, had the same observation:

...the actual cost of one household latrine ranges between US$30 and US$50 (US$5 -10 per beneficiary), out of which US$15 - 20 are covered by UNICEF as materials supply. The remaining cost (US$10 to US$20) is actually too high to be afforded by the rural population. Simple and lower-cost design therefore can and should substitute by using pit latrines combined with light structures." (p.112)

In Thai Binh, a revolving fund (Dong 200,000 loans) is used with a three-month period to pay back. Here, middle economic level families are making use of the no-interest loan facility. Income generating loans for the poorer families, combined with savings schemes, may provide part of the solution to this, even though they require longer payment periods and more supervision. The Women's Union has experience in several different strategies for loan and savings schemes.

5.2.1.5 Choice of technology, design, construction

UNICEF has advocated the double-pit, pour-flush latrine. The model, called the 'Sulabh model' has two leaching pits. When one is filled, it is closed and the other is used. By the time the second is filled (more than two years usually), the residue left in the first pit is harmless and usually of small volume. When only one pit is built, another one has to be constructed at a later date. In other countries, experience shows that this is seldom done, unfortunately. Because it is a leaching pit, it is usually recommended that paper not be put in. This means that used latrine papers are usually kept in a separate basket as is currently the practice in Viet Nam. In fact, the mission has recognized only one double-pit, pour-flush latrine during its visits.

Latrine design seemed to have some similarity within provinces. Thus, the septic tank was seen most in Thai Binh province, and the single-pit (with cement rings and ventilation pipe) in Soc Trang, the South.

In Thai Binh most of the latrines seen had two to four septic compartments with over-flow that was put, with ash, on the fields. Two septic tank covers seen in Thai Binh were not sealed. This has also been mentioned in a UNICEF study where almost one in five families were digging out the fresh excreta. The septic tank design can be misused just as the double-vault latrine was, particularly if the families do not believe in the safe disposal of excreta. This issue deserves further follow-up.

In Soc Trang the model was one pit under the trap or one off-set pit. The pits were lined with cement rings. In Soc Trang, the Women's Union field workers have, on their own initiative, stimulated poor families to construct their own latrines. In one commune, this amounted to 65 pit latrines. The 2 pit latrines which were seen had small pits. It is difficult to dig in this area. Both latrines were almost filled. While an improvement over defecation in the river, these did not appear to be as hygienic

as pond latrines which had been used earlier. When pit latrines are used, they must be dug deep enough.

In general, there seemed to be some confusion over latrine designs. Assistance is needed in selecting latrine designs locally. A more limited number of standardized designs and monitoring of use of each by the motivators and implementors would be useful. The drawings of latrine models seen by the mission were small and confusing. Three dimensional models would be useful in communicating with people at all levels.

Reducing the costs of latrines is particularly important if more families are to be reached. One approach is to change the design and use lower-cost materials, as already planned. Another, complementary approach would be to stimulate cost reductions in the current work. This could be done by costing the construction of a 'model latrine' at the commune level. Information would be collected on the amount of cement, number and types of bricks, amount of time needed for a trained mason to construct. This information could then be used to set wages (work by completed latrine, not by hour) and set the minimum amount of material needed.

5.2.1.6 Functioning and actual use

The research report shown to the mission on use and maintenance of latrines gives information which could be used in programming. In addition, monitoring data could also be collected in a way to stimulate improved use of the latrines and improved cleanliness, particularly if implementors or community members are involved in the monitoring. Monitoring should continue after the latrines have been constructed.

Most visited project latrines were less than a year old. Therefore it is difficult for the mission to comment validly on functioning and use based on first-hand observation. People interviewed who had project-supported latrines reported use by all members of the family. Cleanliness of the latrines was average to very good. Water is not always available within or outside the latrines seen in Thai Binh. The tops of all but one of the septic tanks seen in Thai Binh are constructed so that tanks may be fairly easily emptied; the seals were not in tact in all facilities and overflow from the septic tanks was being used for gardening. This corresponds to the UNICEF research findings and to the statements made to the mission frequently in the North about the continuing use of raw excreta or urine in gardens.

Although not a point of concentration for this mission, there were some doubts about the use and impact (in terms of household hygiene and reduced use of wood) of the smokeless stoves. This deserves further assessment.

5.2.1.7 Capacity building

Training has been provided to health workers, masons, provincial committees in project management, commune committees, head-teachers and teachers, health students, members of the Women's Union. UNICEF has carried out training for key persons, such as 2 people per district in Soc Trang. After this, much of the local training has been given by senior Health Services staff. In Thai Binh province, the

Thai Binh Regional Medical College has taken the lead in training and assisted even with the transport of materials.

The pilot activities carried out by the Women's Union in Soc Trang and by the Provincial-District-Commune authorities in Thai Binh have provided both groups with important experience that can be shared with other provinces.

The provincial Steering Committee in Thai Binh operates under the leadership of the vice chairman (or chairwoman) of the People's Committee, including related organizations such as Health Services, MOLISA, Education and Training services and the Women's Union. Such Steering Committees should be set up in all provinces to support all groups in carrying out their programmes.

Training needs which were discussed with the mission included:

- design and construction of latrines (for many groups, including Women's Union);
- benefits of improved latrines and how to communicate about these;
- maintenance and repair of handpumps (Women's Union);
- development, in training context, of area-specific behaviour goals for household hygiene and hygiene behaviour and a limited number of concrete indicators for monitoring;
- training methodologies which stimulate participation among trainees.

5.2.2 Sustainability

Many elements needed to sustain a project are already in place. These include: national policy; implementation of activities by existing personnel (not new, temporary staff); development of provincial management mechanism (eg., the provincial Steering Committee in Thai Binh).

The financial subsidy system and transport of small amounts of commodities to distant houses is probably not sustainable in an expanded project. UNICEF plans to develop a new revolving loan scheme. For some reason, 60% of the revolving loan will be in commodities. This means that transport will continue to be a problem and would continue to strain the capacities of the Health Services and Women's Union, if it has a greater hand in service delivery. The mission does not feel that the 60% provision of commodities will be practical or will serve the poorer families.

As noted earlier, the long-term sustainability of the project will depend, to a large extent, on government and personal commitment to improved hygiene and safe disposal of excreta. This has been called 'demand creation' earlier in the text. UNICEF has already identified most of the general elements needed for this. In its **1994 Situation Analysis of Women and Children**, UNICEF states that priorities of the project up to 2000 AD should be:

- to inspire the provinces, districts and communes to accept environmental sanitation as a national priority;

- to emphasize communication and publicity, using all available channels and media, to promote the acceptance of sanitation as a way of life...;

- to improve coordination with mass organizations and NGO's in educating the public...;

- to give adequate funding and attention to deprived and ethnic minority areas;

- to include the provision of water and sanitation facilities in the budget estimates for the construction and renovation of primary school and kindergartens, health centres and other community projects.

The challenge will be to operationalize these objectives, particularly the first two. For this, some reorganization of the project activities and budget may be required.

5.3 Schools: observations

The mission visited Nam Ha, Bac Thai, Da Nang, Soc Trang and Ho Chi Minh provinces. The mission had 4 meetings with provincial governments/Steering Committees.

Strong points

* At the provincial level there was only one Steering Committee under the leadership of the vice chairman (or chairwoman) of the people's committee and related organizations such as Women's Union, service of Health, service of LISA, service of Education and Training and others.

* Based on the opinions of those Steering Committees, we learnt that UNICEF has supported health education activities actively under MOLISA, MOH, MOET, Women's Union. A lot of seminars, training courses have been carried out at all levels. Many posters, booklets, flip charts, leaflets, health books for school children, magazines and videos have been prepared and provided.

* Those activities were also supported by NGO's, the GOV, and many other organizations. And the activities started since 1954 for example:
  - 3 clean (eat, drink, live) and 3 kill (mosquito, fly and mouse) campaign;
  - clean village and increasing rice production campaign;
  - clean street and food field campaign;
  - 3 basic sanitation constructions (double vault latrine, bathroom, dug well).

Through the reports of the Steering Committees the behaviour of Vietnamese people has improved. Vectors (mosquito, fly, mouse) have been controlled such as: cholera, dysenteria, typhoïd, diarrhoea, trachoma, etc. Family hygiene especially in the South (Kh'mer ethnic minority) was good. Although low income, but clean and tidy, not only in the sleeping room, but also in the kitchen and others.

People who lived in the low income areas also have known that clear water is good for health, for drinking and for cooking. Safe water means clear water, sweet in taste and no odour. People like rain water. People prefer an iron removal filters for

water from the tube wells with high iron content. Poor families try getting water from the handpump for drinking and cooking even from a distance, but use other sources (river, pond) for washing and bathing. People know that defecating in the field is bad action but do not relate this to health. Most people want to defecate in a fixed place for example the pig sty. The purpose is to keep the faeces as manure for fertilization of agricultural lands.

The Pham-hong-Thai primary school demonstrated positive behaviour of school children, due to the integration of 3 programmes (water supply, sanitation and health education). The Head Master of a basic general school told us to be happy with the UNICEF support, because his pupils had gained more knowledge and positive behaviour which will help their families and their community also.

Weak points

Unfortunately, families we visited (including the upper and middle income) did not understand the need for harmonious integration between the water supply, sanitation and hygiene practises. Many families had a tube well or a big rain water collection tank, but they still use traditional latrines, and surface water for bathing and washing.

We have rarely met the Sulabh latrine, even in An Vinh commune, a pilot for the sanitation project. Most of the UNICEF supported latrines were semi-septic latrines, not closed. The reason is that the farmers need human faeces for fertilizer. Also the pit latrines were quite different from the designs of the sanitation project component.

Along the road to Soc Trang and even in Soc Trang, we saw many fish pond latrines. People said that fish pond latrines are clean and profitable, and think that it is better than a pit latrine.

Along the road from Soc Trang town to Trung Binh commune, we saw a big canal and many families living near the canal use defecate in it, despite that they have enough land and money to build a good latrine.

Regrettably the health education materials are not available in the schools and health centres we visited. We did not find any books, posters, pictures, etc. on environmental hygiene. Yet, we saw many attractive posters on CDD, EPI, nutrition, family planning, AIDS, but nothing about hygiene education, water supply and sanitation.

Using human faeces for fertilizer (in the North) and for raising fish (in the South) has been a big problem in Viet Nam. Most people in Nam Ha province did not use the Sulab latrine properly according to dr DUC, director of the Health service in Nam Ha province, because people think that the Sulabh latrine makes it easier to get the faeces out.

Except the primary school in Nam Dinh city we haven't seen the behaviour change in the other schools. For example some schools had a borehole/handpump but pupils only used the well for washing their feet. The septic latrines of the schools were

often too far, and had no water in their tanks. Rubbish was seen everywhere (in the class rooms, the verandah's and the school yards). Many class rooms are very dark and untidy. Individual hygiene is also not very good.

5.4 Impacts of WATSAN

5.4.1 Roles of women and the Women's Union

Management of the project and selection of families are undertaken by provincial and local government. Generally the only member of the commune committee who is a woman is the person representing the Woman's Union. This is a structural limitation in stimulating expanded roles for women in the project.

In the Soc Trang pilot activities, however, it seemed that the project, largely managed by the Women's Union with an close knowledge of their constituency, resulted in greater involvement of women in decision-making and implementation. It is the view of the mission that the role of the Women's Union must go beyond motivation and education to include management of funds and construction. This would improve the coordination of project components (education and construction). The Women's Union is in a position to reach poorer women whose families have not yet benefited from the project. It also has experience in using several different types of loan and savings systems, some of which are more suitable for poorer families. Because payback from a loan system will be slower for poor families and because the loan schemes work with groups of women (not individuals), it is felt that an average loan of US$2000 per commune would be more effective than US$1000, as currently planned, even if this means limiting the geographic scope of the work at present.

If the role of the Women's Union is to be expanded, then several inputs will be needed. Most of these have been mentioned earlier: training in technical aspects and participatory methods and management training, special objectives that are area-specific, increased amount of fund for loans, some special provision for the poorest families in the form of continuing subsidies, implementation of clear and simple monitoring indicators. Pilot schemes may be financed directly with the Women's Union at the provincial level.

The Women's Union undertakes projects with other groups (UNFPA, CIDSE, etc.) and it is seeking further such linkages in the future. In view of this, some incentive or financial support is needed for the Women's Union field workers. The momentum of the work can probably not be maintained on an expanded scale by quasi-voluntary workers without incentives. Even monetary incentives need not be too costly (an incentive of Dong 2,000 for the motivator per latrine would cost about US$ 180,000 for one million latrines). Furthermore, motivators themselves do not usually have access to a handpump/well which, under certain conditions, could serve as a group incentive. Incentives could alternatively be attached to the monitoring and evaluation of completed latrines which have been in use for a certain time period.

5.4.2 Community participation and education.

As noted earlier, participation is stronger in monetary and construction inputs than in family selection or project management. A challenge for the Government of Viet Nam as well as for UNICEF will be to develop effective education activities that lead to real acceptance of new hygiene behaviours, including the need for the safe disposal of excreta. This can probably not be accomplished without greater participation among families and women at the commune level. It will also involve the identification of realistic entry points for communication and indicators for monitoring.

Entry points refers to beliefs or behaviours which are already accepted and can be built upon to develop new attitudes and behaviours. For example, in some countries, parasite control through stool examination is a useful motivational approach. The idea is that when mothers see the worms in their own children, they can be motivated to change behaviours in the family (for example, by using safe latrines or having children wear shoes or washing hands better). However, in villages visited this was not the case. Worms are not particularly important, the mission was told, as everyone has them. Therefore the motivation or 'entry point' should take a 'step backwards' and sensitize the population to the fact that worms are harmful to their children and that modern children should not have worms. Another entry point, if costs can be kept down, might be the promotion of private bathing areas with water seal latrines.

5.4.3 Health and hygiene

Health impact, particularly in the North, might be measured by changes in the level of parasite infestation. However, given the low coverage by the project thus far (about 30 to 100 latrines out of a population of 1000 households), no impact can be measured (ref. research work of S. Esrey and S. Cairncross). This provides another rationale for restructuring the project, to provide intense coverage over a limited area. The new targets might change this perspective, particularly if accompanied by improved household hygiene in some regions.

An important and concrete indicator of project impact can be the level of parasite infestation among children. The key intervening behaviours for this should be identified on an area basis. In Thai Binh province, these behaviours probably relate to safe disposal of excreta, feet protection, and hand cleanliness, and probably cleanliness in food preparation areas. These, then, in a more specific form, could be the targets of the environmental sanitation project.

Household hygiene

The mission decided to visit households without project latrines for comparison, including those with UNICEF-supported wells.

The middle economic level households visited in both Nam Ha and Thai Binh usually had a clean and modern living room. The cooking areas were small, with pots and fires usually on the ground, few or no washed clean vessels, no clean plank or table for preparing food, dirty storage cabinets where these existed. Where there were no project latrines, the latrines consisted of bamboo poles or planks over ashes

with a basket for soiled cleaning papers. In three houses (including one house with a project well) excreta could be seen on the ground outside the latrine, with barefoot children walking about. These were middle income families. Homes visited in Soc Trang and outside Ho Chi Minh city belonged to the Khmer minority as well as Vietnamese families. These usually had cleaner kitchens with vessels washed and hanging on the walls, separate counters for food preparation. The non-project latrines were often far from the house (25 to 100 meters for pit and pond latrines) implying less physical contact with excreta for children. The Mission has the impression that the very high incidence of parasite infestation in the North is related to household hygiene as well as excreta disposal. The current sanitation project may not be sufficiently focusing on specific aspects of household cleanliness.

Commune Xa An Vinh in the North had successfully completed an ambitious project with UNICEF assistance. The level of household hygiene seemed better here than in other communes visited in Thai Binh and Nam Ha.

6. RECOMMENDATIONS WATSAN

6.1 Water supply

Based on the above observations the mission recommends that WATSAN strives to improve the effectiveness and sustainability of the water supply activities by:

1. Focus on need

Focusing the WATSAN support to real and severe (seasonal) water scarcity areas (in terms of quantity or quality) and poor areas. Examples of these areas are coastal belts (with high salinity), lime stone areas and dry areas high up in the mountains. This selecting of needy areas is seen as a task for MOLISA (national and provincial). On the other hand, reducing or eliminating the subsidy on wells for upper and middle levels of income and water rich areas may mean that the lower income levels in these areas will not be reached any more. For these areas possibly also a subsidy system for communal wells may be provided for example through the Women's Union or the Youth Union. Especially in areas where water is vended (as in the South) cooperation in users groups (for payment and ownership) may be easy to achieve.

2. Focus on poverty alleviation

Linking WATSAN support to say 20 households (including poorer households) to achieve communal ownership and use of the facilities. This can be achieved by adopting two criteria for siting of boreholes/handpumps:

* concluding a contract between a minimum number of users and WATSAN;
* setting a minimal distance between handpumps to ensure proper spacing.

These criteria for site selection could be used at grass root level e.g. by the Viet Nam Women's Union or the Youth Union. Preferably the chosen grassroots level organization could also be provided with a credit facility (with flexible pay back). The credit facility should enable reaching the poor. To try out these site selection criteria in combination with a credit facility two pilot provinces could be selected after the procedures have been established.

3. Improving sustainability

Setting up a minimal maintenance support system for handpumps and gravity fed systems at district level which includes a regular monitoring and inspection programme (for provincial level) and a spares supply system from the factory down to the handpumps. The spares supply system could be either within GOV (e.g. by establishing small spares stores and stocks in the district level MOLISA office) from which handpump users can buy (against retail prices) spares when needed, or alternatively by encouraging the hand pump manufacturers to establish a spares marketing outlet down to the handpump level through private marketing outlets (e.g. hardware shops). After the set up for maintenance support has been approved on main points, a routine maintenance inspection system and a spares store could be established in 2 provinces and their districts for piloting purposes.

4. Improving consumption levels

For gravity systems it is recommended to consider household connections from the design stage onwards. For both handpumps and gravity systems active stimulation

e.g. through television and other channels, to use the supplies multipurpose is recommended.

5. Improving water quality
For areas where the iron concentration is high in the water supply iron removal filters should be built together with the construction of the handpump. This is practise in Nam Ha, but not in Soc Trang. The iron removal filters should be built as a priority in Soc Trang.

6.2 Environmental sanitation

With respect to environmental sanitation, the following recommendations focus on going beyond construction targets, to build demand and commitment among all groups and to serve families below the middle-income level.

The specific recommendations of the mission are:

1 **Refine the objectives of the projectgramme to focus on behaviour.** The most important challenges facing the project relate to behaviour, that is, what people do. One objective could be: **Consistent use of improved latrines.** 'Improved' may be defined in terms as the amount of contact possible between humans, flying insects and excreta. Thus, there might be three general types of latrines:

- latrines with no contact possible from humans or flying insects to excreta;
- latrines where flying insects might have contact with excreta but not humans;
- latrines where both human and insects could have contact with excreta.

A new latrine must be an improvement over the existing latrine because it moves up from one level to the next. The new latrine should not replace an existing latrine at the same level of hygiene.

2 **Identify specific behaviours and entry points for communication about those behaviours. These should be area specific, few in number and simple.**

Specific behaviours are the things people do which will (probably) improve hygiene. Examples of these are: all family members use a latrine or washing hands after defecation and before cooking.

Entry points are attitudes or behaviours that people already follow which can lead to a new behaviour. Entry points show the 'reasons' or 'benefits'. Examples of these are:
- latrines are convenient for women. Using latrines can help stop infections among women;
- water-seal latrines do not have a bad smell and help keep the house clean;
- washing and defecating in the same water is dangerous;
- it is not normal for children to have worms nowadays.

Area specific behaviours need to be defined to fit specific local conditions. Examples of these are:

- not washing and defecating in the same water (for river/canal areas);
- leave excreta in the latrine, not the garden (North);
- make a clean space for chopping/preparing food (North).

3 **Expand the focus of the educational activities for adults to include specific aspects of household hygiene.**

4 **Collect and use research in communication and education activities.**
There is apparently research available on topics such as:

- Relative costs of replacing excreta by (a) fertilizers of local production such as ash and urine and (b) commercially available fertilizers.

- Effectiveness of excreta as a fertilizer.

- Latrine designs suitable for crowded hamlets and houses with little land and little water.

- Impact of chronic parasite infestation on children.

- Public latrines with bathing facilities for payment, with perhaps one experimental activity.

- Both the health and economic aspects of the fish pond latrine should be re-examined.

This information should be collected, edited simply in Vietnamese and provided in simple form to field workers and motivators as well as authorities at provincial, district and commune level.

5 **Agreement about project objectives**
There is an important need to develop agreement and commitment to the objectives of the programme at all levels. Much more than verbal expressions of support, there is a need to build **belief** and **commitment** in objectives at all levels. **Social mobilization and advocacy are required among policy makers, service providers and key figures at all levels.** This should be undertaken **before** mass campaigns. If mass campaigns come too early, the project could fail.

Channels of two-way communication are needed and these might include structured meetings and participatory workshops. In these meetings and workshops, people could learn about the research, develop area-specific objectives, identify specific target groups for the project, examining technical designs and discuss their doubts about the project.

6 **Provide service to priority areas and groups with greater health risks.**
Priority areas should be targeted in the project. These probably are:
- communes where rivers and canals are used for washing and defecation or even drinking;
- communes where fresh excreta is used as a fertilizer;
- communes with large populations below the middle economic level;
- communes with large minority groups **and** population density above 500 people per square kilometre (thus, not sparsely populated areas);
- areas having a natural disaster.

The need for sanitation services is greater in densely populated than in mountainous areas.

Priority families should be those below the middle income levels. Special planning is required, perhaps though pilot activities, to develop ways of reaching the poorest families and those with very little land. This means that middle and upper income groups should be stimulated to use the private sector for latrine construction. Data sheets may be useful for them showing the average labour time and costs, the design and amounts of materials needed.

7 **Refine the choice of technology and design of the latrine.**
In view of the variations among provinces and families, UNICEF is justified in using a limited number of different designs (a cafeteria approach). However, the application and effectiveness of these should be followed-up closely. The design of the water-seal and pit latrine in different regions should be reassessed soon. The Sulabh model may be too difficult to implement at this time.

8 **Develop and implement simple monitoring devises for the consistent use of the latrine. Indicators** can be used to check to see if a behaviour is happening. Examples are: defecate in different place from bathing (South), parasite infestation in children decreases (North), children's bodies can not touch excreta in the latrine (North).

Monitoring should continue after construction. Results of the monitoring can show problems for which further action is needed.

9 **Redefine the role of the Women's Union in the project.**
The Women's Union should take charge of motivation, selecting families, managing revolving funds, providing some training. The Department of Health should undertake research, provide education/training and do general supervision. Commune-level steering committees might be set up for the project in the communes of intensive work.

The Women's Union would need special inputs to take on these new tasks, such as:

- training on (a) designs, construction use of low-cost materials for latrines; (b) O & M for both latrines and wells; (c)household hygiene (some regions); (d)benefits/entry points for latrines; (e) how to reach the below middle-income families and the poorest families;
- materials such as small, portable models of latrines. Many people can not read diagrams well;
- pilot activities to provide examples of how to work;
- revolving funds, and perhaps some special subsidy for the poorest families;
- training of trainers;
- development of simple indicators which should be monitored periodically;
- Incentives should be seriously considered in view of the increasing workload of the field workers. Activities women can do without compensation are getting more limited.

In experimental activities, UNICEF may wish to provide resources directly to the provincial Women's Unions. For training, there is a need to develop skills in simple participatory training approaches that have met with approval and success in other Asian countries. Please note that the mission did not have the opportunity to meet with the Youth Union or NGOs during its work. However, these groups might be included in collaboration.

10 **Refine the revolving fund schemes to target families below the middle income level.**

Current revolving fund activities reach middle and upper income families. There are many different types of revolving fund procedures in Viet Nam. Special attention is needed to develop ways of reaching the poorest families, which might include some subsidies or income-generating loans. The distribution of loans in the form of 60% commodities is not necessarily recommended and should be discussed with the implementors first. Since poor people take longer to repay loans, the provision of US$ 2,000 per commune is recommended.

11 **Extension environmental hygiene**

UNICEF and GOV (especially MOET) should increase their support to environmental hygiene and education not only for primary schools but also for the others including kinder gartens, secondary schools and paediatric colleges, etc.

Training in environmental hygiene practises should be provided to 3 main target groups: school teachers and pupils, Women's Union and Youth Union.

Training in communication and education for trainers and communicators/motivators should be strengthened in each region, and the messages to the people in the communes/villages must be simple, practical and attractive. Don't forget that the main objective of environmental hygiene education is behaviour change.

6.3 WATSAN and schools

All primary schools supported by UNICEF in the pilot projects of WATSAN must be provided with enough hygiene education materials.
Schools outside the support of UNICEF, which are being overhauled or rehabilitated should, as a rule, be provided with safe water supply and sanitation facilities if not yet available. New schools should also be provided with these as a rule.

Environmental hygiene education is not only focus in WATSAN, but also in family-hygiene in general. Therefore environmental hygiene education should be integrated with other related programmes such as: CDD, EPI, nutrition, family planning, anti malaria, anti trachoma, etc.

6.4 Coordination and balance

The mission found that efforts to increase the coordination between water supply, sanitation and hygiene education are undertaken. At national level and also some provinces a Steering Committee for WATSAN has been established. In other provinces however coordination was found weak. Also in UNICEF coordination between the water supply, sanitation and hygiene education components can be improved.
The mission noted that the funds for WATSAN and of the GON support are focused on the provision of water supplies (75%) in particular handpumps. The mission considers that rather than focusing on the installation of more handpumps more emphasis should be given to developing a need based and effective sanitation project components and an effective school hygiene project component.

7. RECOMMENDATIONS FOR GON SUPPORT 1995

The WATSAN Master Plan of Operations for the period 1996-2000 describes that the water supply activities under the WATSAN project will be more focused. The mission recommends a focus on water scarce areas and on the poor, rather than solely targetting for national coverage and equal distribution of water supplies. The mission recommends that 1995 will be the year to gradually prepare for this more focused approach.

It is recommended that GON support will be used for transition activities in particular related to poverty alleviation, improving effectiveness and enhancing the sustainability of the water supply activities. In this view the mission recommends the following activities for GON support in relation with

A. Water supply (the GON budget for 1995 is US$ 333,941.88).

* setting up an operational system for O/M of handpumps and gravity fed systems e.g. by allocating part of GON funds for the procurement of spares stock (as a starting stock) for some pilot districts;

* workshops for national and regional staff to focus the WATSAN project to geographical priority areas;

* workshops (prepared by WATSAN) to define policies and procedures for the GOV role/support for low priority areas and for water supply demand from the private sector e.g. upper and middle income levels;

* workshops (prepared by WATSAN) to define the procedures for GOV support to water supply development in priority areas e.g. in terms of site selection and financial support;

* training courses for Women's Union/Youth Union staff of priority areas in technical, operation and maintenance, site selection and credit procedures related with WATSAN;

* support to implement pilot activities under the Women's Union;

* development of a manual for designing and implementation procedures and standards of gravity flow systems;

* procure material support for a gravity flow system with household water points;

* procurement of materials for iron removal plants to boreholes which provide sub-standard water quality;

* procurement and setting up a library in MOLISA at national and regional level for rural water supplies (e.g. handbooks for design and procedures, etc.);

B. Environmental sanitation and education (the 1995 budget is US$ 92,314).

The sanitation and hygiene education project components receive, altogether, approximately 75% less funding than the water project component. Therefore it may not be feasible to act on many of the recommendations noted above unless some GON resources are shifted from water supply activities to sanitation and environmental hygiene. It may be useful to defer further construction of latrines for four to six months until the recommendations noted above can be acted on.

In addition it is recommended that GON support be deployed for:

Recommendations 1 to 6 and 8: national and regional meetings and workshops may be needed to refine the objectives, priority areas and groups, behaviours, entry points and indicators of behaviours which are specific to each region. Training workshops for this should also be included within the Women's Union project.

Recommendation 7: latrine design and technology choice. Existing research and quality reference materials may also be provided from Netherlands' donations.

Recommendation 9: inputs for the training of trainers, of high quality, are required for the Women's Union. Experts from within Viet Nam should be preferred, although for participatory training some external input might be required. Materials including small models of two or three different types of latrines should be produced.

Recommendation 10: Netherland's contribution towards the revolving funds should be deployed largely on a monetary basis. The provision of cement and metal should be handled locally to improve logistics. Consideration may be given to local production of traps and pans, if quality can be retained.

TERMS OF REFERENCE (November 1994)

Evaluation of the UNICEF assisted Vietnam Water and Sanitation Project.
VN92003/VN001502

A. Background

The UNICEF assisted Vietnam Rural Water Supply and Sanitation Project started in 1981 The present project period runs from 1991 - 1995 and is part of the Vietnam - UNICEF Plan of Operations. The Netherlands Government agreed to support the project as from November 1, 1992 for a period of three years (1993-1995) with a total contribution of Dfl 5,278,800

The specific objectives to be covered by the Netherlands contribution are.

1. Implementation of 15,000 supplementary wells and 18 gravity flow systems serving 2.0 milion people in the rural areas;
2. Experimentation with and implementation of new low cost techniques for areas where manual drilling or gravity flow systems are not feasible;
3 Implementation of sanitation activities in 200 communes already being covered by UNICEF activities (about 30,000 household latrines) and 200 sanitary systems in primary schools in the provinces covered by water supply activities.
4 Capacity building of the Government at both central and provincial levels, as well as within the project activities.

The Netherlands and Vietnamese Governments together with UNICEF decided that a mid-term evaluation was indicated to assess and analyse the progress of the project The evaluation has to result in practical conclusions and recommendations for project planning, development and improvements. As project experience up till now reveals that especially the software aspects require further attention, the evaluation will particularly focus on site selection and use of the systems; people's participation; socio-economic conditions, cost-recovery by users, affordability and willingness to pay; choice of sanitation technology related to socio-economic, cultural and environmental aspects; social mobilization and hygiene education, project planning, organization and institution building, including capacity building.

B. Objectives of the evaluation

The general objective of the mid-term evaluation is to provide the Vietnamese and Netherlands Governments and UNICEF with relevant information about the progress of the Vietnam Rural Water and Sanitation Project for project assessment and improvement

Specific objectives are:

1. To provide a general assessment of the achievements to date in relation to the objectives for the Netherlands Government contribution,
2. To examine the planning, implementation and management of the project at the various levels, paying due attention to decision making and participation processes;
3 To examine the technical choices, quality of construction, operation and maintenance of the water supply and sanitation facilities;
4 To examine the selection of sites, the functioning and the actual use of the water supply and sanitation facilities;

5 To examine the social mobilization, participation and hygiene education components;

6 To examine the selection process of provinces, communes and families that benefit from the project activities; also to assess the socio-economic conditions and capacity to pay;

7 To assess the health and environmental aspects of the project activities in relation to socio-economic conditions;

8 To assess the human capacity development and institution building, especially in relation to the Vietnamese Government's policy in this respect;

9 To provide an indication of the cost-effectiveness of the project,

10 To assess the institutional capacity of the Vietnamese partner organisations to operate and maintain the constructed facilities in a sustainable way, long after UNICEF has withdrawn from the project;

11. To provide an indication of the likely impact of the project in terms of time savings and reduced burden, health, environment, socio-economy

12. To be gender specific with respect to the above stated objectives and to highlight the role and constraints of women in water and sanitation;

13 To provide practical conclusions and recommendations for project development and improvement.

C. Composition of the evaluation team

The team will comprise of one local and one expatriate expert with a technical/institutional background and one local and one expatriate expert with a social/educational background

D. Organization of the evaluation

The duration of the evaluation is 14 days, including 8 days of in-country field observation to selected sites for which the evaluation team will give suggestions. The remaining days will be spent in Hanoi, for interviewing Government agencies, UNICEF, and other concerned donors as well as for report writing and debriefing with the Government, UNICEF and the Royal Netherlands Embassy

E. Logistic arrangements

UNICEF will provide assistance to organize the fieldtrip(s) and to make appointments with relevant organizations and persons.

F. Main data sources

The main data sources are:

- National Plan of Action 1990-1995;
- Master Plan of operation;
- Situation Analysis;
- Project Document for funding by Netherlands Government;
- Progress reports;
- Women, water and sanitation. Policy on an operational footing: main points and checklist.

AGENDA OF THE DUTCH EVALUATION MISSION

5 Dec., Monday Meeting in Hanoi

6 Dec., Tuesday Meeting in Hanoi with Government

Fieldtrips

Dr. Cuong + Ms. Kathleen Shordt: Thai Binh
Mr. Hoa + Mr. Van Schaik: Bac Thai

7 Dec., Wednesday

Dr. Cuong + Ms. Kathleen Shordt: Thai Binh
Mr. Hoa + Mr. Van Schaik: Bac Thai

8 Dec., Thursday

Dr. Cuong + Ms. Kathleen Shordt: Nam Ha
Mr. Hoa + Mr. Van Schaik: Gia Lai

9 Dec., Friday

Dr. Cuong + Ms. Kathleen Shordt: Nam Ha and return to Hanoi.
Appt. 15:00 Hrs, Dr. Hoi, Ministry of Health
Mr. Hoa + Mr. Van Schaik: Gia Lai

10 Dec., Saturday

Dr. Cuong + Ms. Kathleen Shordt: HCMC
Mr. Hoa + Mr. Van Schaik: HCMC

11 Dec., Sunday Soc Trang
12 Dec., Monday Soc Trang
13 Dec., Tuesday Back to HCMC

14 Dec., Wednesday HCMC – Hanoi
Appointment in HCMC, 13:30 Hrs, UNICEF (Mr. Nowacki)
Dep. at 16:30 Hrs for Hanoi

15 Dec., Thursday

16 Dec., Friday

17 Dec., Saturday
10:30 Hrs: Office: UNICEF staff + mission
13:30 Hrs: Embassy, MOLISA, Ministry of Health, Ministry of Education & Training

SORTED at DONOR & PBA NUMBER
AS AT OCT [illegible]
(From HISWAS- HISWAS Files)

Annex 3

DONOR : A452 - NETHERLANDS GOVERNMENT

PBA TYPE/NUMBER	AMOUNT IN US DOLLARS
SC/92/0539-1	1,651,402.00

Programme	Carl-Forward #	Description	CF $ Value	$ Expenditures
VTN/YY903	[redacted]VTNA/93/0020-1	CEMENT AND IRONBARS FOR HOUSEHOLD LATRINES	64,406.30 C	64,406.30
	SCF-VTNA/93/0021-1	CEMENT AND IRON BARS FOR HOUSEHOLD LATRINES	47,522.00 C	47,522.30
	SCF-VTNA/93/0024-1	LATRINE PANS FOR HOUSEHOLD LATRINES	9,000.00 C	9,000.00
	SCF-VTNA/93/0033-1	HANDPUMPS	105,000.00 C	105,000 00
	SCF-VTNA/93/0039-1	PROCUREMENT OF PVC & HDPE FOR CASING. SCREEN & ACC	107,214.00 C	107,214 00
	SCF-VTNA/93/0039-2	PROCUREMENT OF PVC & HDPE RAW MATERIALS.	113,194 00 C	113,194 00
	SCF-VTNA/93/0039-3	PROCUREMENT OF PVC RAW MATERIAL.	20,351.00 C	20,351 00
	SCF-VTNA/93/0031-1	HANDPUMP ACCESSORIES.	93,184 00 C	93,184 00
	SCF-VTNA/93/0307-1	PROCUREMENT OF CEMENT FOR RWS PROJECT.	205,783.30 C	205,783.30
	SCF-VTNA/93/0308-1	COMPUTER & ACCESSORIES FOR PROJECT MONITORING.	6,364.30 C	6,364.30
	SCF-VTNA/93/0311-1	VEHICLE FOR PROJECT MONITORING/IMPLEMENTATION	49,646.16 C	49,646.16
	SCF-VTNA/93/0311-2	VEHICLE FOR PROJECT MONITORING & IMPLEMENTATION.	33,097.44 C	33,097 44
	SCF-VTNA/93/0314-1	LOCAL PROCUREMENT OF IRONBAR	64,058.00 C	64,058.00
	SCF-VTNA/93/0317-1	LOCAL PROCUREMENT OF HANDPUMPS	115,500.00 C	115,500.00
	SCF-VTNA/93/0319-1	LOCAL PROCUREMENT OF CEMENT	170,764.00 C	170,764 00
	SCF-VTNA/93/0320-1	HANDPUMP ACCESSORIES.	36,713.00 C	36 713 00
	SCF-VTNA/93/0321-1	REGIONAL PROCUREMENT OF PVC & HDPE RAW MATERIALS	91,132.00 C	91,132.00
	SCF-VTNA/93/0321-2	PROCUREMENT OF PVC RAW MATERIAL.	45,912.00 C	45,912.00
	SCF-VTNA/93/0321-3	PROCUREMENT OF PVC & HDPE RAW MATERIAL	37,838.00 C	37,838.00
	SCF-VTNA/93/0332-1	AIR COMPRESSORS & ACCESSORIES.	9,700.00	9,312.87
	SCF-VTNA/93/0332-2	AIRCOMPRESSORS & ACCESSORIES.	9,700.00	9,312.87
	SCF-VTNA/93/0406-1	MOTORCYCLES FOR PROJ. MONITORING IN NEW PROVINCES	15,837.61 C	15,837.61
	SCF-VTNA/93/0406-2	MOTORCYCLES FOR PROJ. MONITORING IN NEW PROVINCES	10,129.00 C	10,129.00
	SCF-VTNA/93/0412-1	CEMENT AND IRONBARS FOR HOUSE HOLD LATRINES	149,085.00 C	149,085.00
	SCF-VTNA/93/0414-1	VEHICLE FOR WATSAN PROJECT MONITORING	23,249.00	23,248 16
	SCF-VTNA/93/0420-1	PRINTING OF FLIPCHARTS ON SANITATION PACKAGE.	1,500.00	1,499 00
	SCF-VTNA/94/0309-1	PVC CASING AND SCREEN.	139,766.00	33,765.16
	SCF-VTNA/94/0310-1	VN6 HANDPUMPS.	67,511.00	67,511.00
	SCF-VTNA/94/0311-1	CEMENT FOR NORTHERN RWS PROJECT	25,876.00	25
	SCF-VTNA/94/0315-1	IRON BAR FOR RWS PROJECT.	53,760.00	46,570.1
	SCF-VTNA/94/0318-1	CEMENT FOR CENTRAL RWS PROJECT.	17,251.00	17
	SCF-VTNA/94/0319-1	CEMENT FOR SOUTHERN RWS PROJECT.	27,089.00	27 00
	SCF-VTNA/94/0350-1	VN6 HANDPUMP BARREL.	12,560.00	
	SCF-VTNA/94/0406-1	CEMENT FOR LATRINE CONSTRUCTION-NORTHERN PROVINCES	25,950.00	
	SCF-VTNA/94/0407-1	CEMENT FOR LATRINE CONSTRUCTION-CENTRAL PROVINCES	7,350.00	
	SCF-VTNA/94/0408-1	CEMENT FOR LATRINE CONSTRUCTION-SOUTHERN PROVINCES	14,700.00	
	SCF-VTNA/94/0410-1	CEMENT FOR SCHOOL LATRINES - CENTRAL PROVINCES	7,140.00	
	SCF-VTNA/94/0413-1	LATRINE PAN FOR HOUSEHOLD LATRINE CONSTRUCTION	6,050.00	
	SCF-VTNA/94/0416-1	IRONBARS FOR [illegible]	14,030.00	

Env. Sanitation projects

UNITED NATIONS CHILDREN'S FUND
GPSS - CF & EXPENDITURES FOR ALL YEARS
SORTED BY DONOR & PBA NUMBER
AS AT OCT 7, 1994
(From HISMAS, HISCET & PBAMAS files.)

Programme	Call-Forward #	Description	CF $ Value	$ Expenditures
	SCF-VTNA/94/0429-1	LATRINE PANS AND TRAPS FOR HOUSEHOLD LATRINES	2,300.00	.00
	CCF-VTNA/93/0313	CASH SUPPORT FOR POOREST COMMUNITY	32,481.00 C	32,481.00
	CCF-VTNA/93/0319	NATIONAL PROJECT STAFF COST.	3,649.00 C	3,649.00
	CCF-VTNA/93/0322	VIETNAMESE PARTICIPATION IN WATSAN WORKSHOP.	294.00 C	294.00
	CCF-VTNA/93/0419	Support for Field Monitoring Trips on Sanitation	1,399.00 C	1,399.00
	CCF-VTNA/93/0420	Orientation of commune masons on Sanitation	4,173.00 C	4,173.00
	CCF-VTNA/93/0421	Training of Masons, Healthworkers on Sanitation	8,087.00 C	8,087.00
	CCF-VTNA/93/0422	Training of trainers on Sanitation	1,416.00 C	1,416.00
	CCF-VTNA/93/0423	Workshop for Provincial responsible on Sanitation	1,500.00 C	1,500.00
	CCF-VTNA/93/0430	EVALUATION OF SANITATION DEMONTRATION STRATEGY	3,945.00 C	3,945.00
	CCF-VTNA/93/0431	TRAINING OF MASONS,MOTIVATORS AND HEALTH WORKERS	16,535.00 C	16,535.00
	CCF-VTNA/93/0432	ORIENTATION FOR COMMUNE FUNCTIONARIES ON SANITATIO	8,617.00 C	8,617.00
	CCF-VTNA/93/0433	PROJECT STUDY VISIT TO THAI BINH PROVINCE.	3,000.00 C	3,000.00
	CCF-VTNA/93/0434	HOUSEHOLD WATER TREATMENT UNITS IN 10 COMMUNES	5,000.00 C	5,000.00
	CCF-VTNA/93/0435	SUPPORT FOR FIELD MONITORING ON SANITATION	3,648.00 C	3,648.00
	CCF-VTNA/93/0436	STUDY ON WASTE WATER FROM SEPTIC TANK	2,959.00 C	2,959.00
	CCF-VTNA/93/0442	REGIONAL WORKSHOP ON SANITATION FOR SOUTHERN PROV	1,000.00 C	1,000.00
	CCF-VTNA/94/0306	NATIONAL PROJECT STAFF COST. NOB.	12,000.00	8,198.21
	CCF-VTNA/94/0313	DEVELOPMENT OF TRAINING CURRICULUM AND MANUALS	2,000.00	1,999.09
	CCF-VTNA/94/0314	MAKING & BROADCAST OF SERIES OF VIDEO & AUDIO SPOT	3,420.00	1,710.00
	CCF-VTNA/94/0405	TRAINING OF 30 TRAINERS ON SANITATION	1,000.00	919.05
	CCF-VTNA/94/0406	TRAINING 420 MASONS/HEALTH WORKERS ON SANITATION	7,000.00	3,360.00
	CCF-VTNA/94/0407	ORIENTATION MEETINGS FOR MASONS/ADMIN. IN [illegible] COM	3,500.00	1,750.00
	CCF-VTNA/94/0409	REVOLVING FUND FOR SANITATION IN 36 COM. ON [illegible]	20,600.00	20,600.00
	CCF-VTNA/94/0410	SUPPORT FOR FIELD MONITORING ON SANITATION	2,100.00	1,000.00
	CCF-VTNA/94/0416	TRAINING ON SANITATION VECTOR CONTROL IN 5 PROV.	5,000.00	2,454.55
	CCF-VTNA/94/0445	REVOLVING FUND FOR ISP IN 1 DISTRICT OF THAIBINH	10,000.00	10,000.00
VTN/YW903		Programme Total :	2,227,005.21	2,061,176.17
		TOTAL CALLED FORWARD/EXPENDITURES .	2,227,005.21	2,061,176.17
		PBA BALANCE .	424,396.79	
		% IMPLEMENTATION	[illegible]	

UNITED NATIONS CHILDREN'S FUND
GPSS - CFs & EXPENDITURES FOR ALL YEARS
- SORTED BY DONOR & PBA NUMBER
AS AT OCTOBER, 26, 1994
(From HISMAS, HISDET & PBAMAS files.)

DONOR 3402 - NETHERLANDS COMMITTEE

PBA TYPE/NUMBER	AMOUNT IN US DOLLARS
SC/93/0706-	500,000.00

Programme	Brought-Forward #	Description	CF $ Value	$ Expenditures
TW/W890.1	SCF-VTNA/94/0323-1	CEMENT FOR NORTHERN RWS PROJECTS	46,001.00	45,530.59
	SCF-VTNA/94/0324-1	CEMENT FOR SOUTHERN RWS PROJECT	48,376.00	48,376.26
	SCF-VTNA/94/0329-	M6 HANDPUMPS FOR RWS PROJECT	92,000.00	77,000.00
	SCF-VTNA/94/0331-1	CEMENT FOR NORTHERN RWS PROJECTS	53,760.00	50,460.00
	SCF-VTNA/94/0332-	CEMENT FOR SOUTHERN RWS PROJECTS	71,500.00	70,500.00
	SCF-VTNA/94/0334-	M6 HANDPUMP MAINTENANCE ACCESSOR ES	33,451.00	0
	SCF-VTNA/94/0341-	CEMENT FOR HOUSEHOLD LATRINE-NORTHERN PROVINCES	14,500.00	3,479.64
	SCF-VTNA/94/0342-	RON BARS FOR HOUSEHOLD LATRINE CONSTRUCTION	7,000.00	6,349.00
	SCF-VTNA/94/0343-	PRINTING OF EDUCATION MATERIAL ON SANITATION.	6,240.00	1,460.00
	SCF-VTNA/94/0344-	CEMENT FOR SCHOOL LATRINES - NORTHERN PROVINCES	5,250.00	4,035.00
	SCF-VTNA/94/0345-	CEMENT FOR SCHOOL LATRINES - SOUTHERN PROVINCES	5,250.00	4,559.00
	SCF-VTNA/94/0346-	RON BARS FOR SCHOOL LATRINE CONSTRUCTION	1,750.00	1,750.00
	SCF-VTNA/94/0347-1	CEMENT AND RONBARS FOR SCHOOL LATRINES	1,750.00	0.00
	SCF-VTNA/94/0348-	MOULDS FOR LATRINE PANS AND TRAPS PRODUCTION	5,200.00	0.00
	SCF-VTNA/94/0315	TRAINING COURSE IN SSP & IRE WITH FERROCEMENT	1,870.00	1,869.40
	SCF-VTNA/94/0318	CEREMONY & EXHIBITION OF 100 100th WATER SOURCE.	1,600.00	1,537.27
	SCF-VTNA/94/0423	TRAING OF 210 MASONS/HEALTH WORKERS ON SANITATION	3,500.00	1,750.00
	SCF-VTNA/94/0424	ORIENTATION MEETING ON SANITATION IN 70 COMMUNES	1,800.00	900.00
	SCF-VTNA/94/0425	REVOLVING FUND FOR SANITATION IN 38 COM. IN ISP	10,000.00	9,000.00
	SCF-VTNA/94/0426	SUPPORT FOR FIELD MONITORING ON SANITATION	1,000.00	500.00
	SCF-VTNA/94/0427	HYGIENE EDUCATION CAMPAIGNS IN 50 SCHOOLS	2,000.00	2,000.00
	SCF-VTNA/94/0428	TRAINING OF 100 TEACHERS ON HYGIENE EDUCATION	1,000.00	1,000.00
	SCF-VTNA/94/0429	SUPPORT FOR MONITORING AND INSPECTION	1,000.00	500.00
	SCF-VTNA/94/0446	PROMOTION OF SANITATION THROUGH WOMEN'S UNION	20,000.00	10,000.00
TW/W890		Programme Total	455,198.00	370,267.42
		TOTAL CALLED FORWARD/EXPENDITURES	455,198.00	370,267.42
		PBA BALANCE :	44,802.00	
		% IMPLEMENTATION	81.94	

COST ANALYSIS

I. Activities

1. Tube well, average depth 50 m (hand-drilling)
2. Tube well, average depth 100 m (hand-drilling)
3. New dug well, depth 10 m
4. Slow sand filter 500 l/hour
5. Mechanical drilling well, depth 150 m, ϕ screen 168 mm
6. Gravity flow system

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1. TUBE WELL, AVERAGE DEPTH 50 M

A. Material used

		Cost
+ Cement for platform	3 bag	US$ 9.75
+ Cement for IRU	3 bag	US$ 9.75
+ Handpump and spare-part	1 ea	US$ 28.00
+ PVC casing and screen	50 m	US$ 40.00
	Sub-total	US$ 87.50

B. Labour cost — US$ 48.0
(for covering transportation, fuel, maintenance, water, electricity, administrative expenditure)

C. Depreciation for logistics — US$ 18.0
(for drilling equipment, 3000 US$ per jet-team and logistic equipment like cars motorcycle, boat, workshop equipment, maintenance tools, US$ 60,000 for 6 to 8 drilling team)

D. Expertise, management — US$ 25.0

Total — US$ 178.50

2. TUBE WELL, AVERAGE DEPTH 100 M

A. Material used

		Cost
+ Cement for platform	3 bag	US$ 9.75
+ Cement for IRU	3 bag	US$ 9.75
+ Handpump and spare-part	1 ea	US$ 28.00
+ PVC casing and screen	100 m	US$ 80.00
	Sub-total	US$ 127.50

B. Labour cost		US$	80.00
C. Depreciation for logistics		US$	18.00
D. Expertise, management		US$	25.00
	Total	US$	250.50

3. NEW DUG WELL DEPTH 10 M

A. Materials used

+ Cement for platform	3 bag	US$	9.75
+ Cement for supporting wall	6 kg	US$	19.50
+ Handpump and spare-part	1 ea	US$	28.00
	Sub-total	US$	57.25
B. Labour cost		US$	18.00
C. Other materials (like sand, gravel or crushed stone)		US$	5.00
	Total	US$	80.25

4. SLOW SAND FILTER 500 L/HOUR

A. Materials used

+ Cement for platform	3 kg	US$	9.75
+ Cement for tank construction	6 bag	US$	19.50
+ Handpump and spare-part	1 ea	US$	28.00
+ PVC pipe	20 m	US$	14.00
	Sub-total	US$	71.25
B. Labour cost		US$	15.00
C. Construction materials (sand, gravel brick)		US$	10.00
	Total	US$	96.25

5. MECHANICAL DRILLING WELL

- Opening diameter: 190-300 mm
- Depth : 50-60 m
- Conductor pipe : 5 m

- Casing 254 mm : 30 m
- Casing 203 mm : 10-20 m
- Screen 203 mm : 10m
- Drilling in soft and light-consolidated rock
- Capacity 10-11 m^3/hour ≠ 3 l/s

A. Cost for drilling and installation of casing and screen (= 20 million VND)	US$	2,000
B. Cost for construction of processing components like iron treatment plant, warehouse (including construction materials: 2.5 tons of cement, 6,000 brick)	US$	1,500
C. Pumping test for 24 hours (US$ 5/hour)	US$	120
D. Electric pump (imported) (down hole)	US$	1,500
Total	US$	5,120

6. GRAVITY FLOW SYSTEM

- For 3,000 persons
- Length 3,000 m
- Pipe HDPE
- Spring intake with sedimentation and reservoir

A. Materials use

+ HDPE pipe ϕ 90 (unit cost US$ 2.73)	500 m	US$ 1,365
+ HDPE pipe ϕ 63 (US$ 1.31/m)	800 m	US$ 1,048
+ HDPE pipe ϕ 50 (US$ 0.84/m)	500 m	US$ 420
+ HDPE pipe ϕ 32 (US$ 0.35/m)	1,200 m	US$ 420
Sub-total		US$ 3,253

B. Fitting (10% of HDPE cost)	US$	325
C. Cement 10 tons	US$	650
D. Labour cost (40% of total cost)	US$	1,691
Total	US$	5,919

7. IRON REMOVAL UNIT

Size: W x L x H = 1700 x 1000 x 860 (in mm)

+ Cement	3 bags	US$	9.75
+ Sand and gravel (US$ 3 per one cub. meter)	1.2 m3		3.60
+ Brick (US$ 18.3 per 1000 bricks)	580 ea		10.60
+ Others(tap, 2.5 m of PVC pipe, ellbow)			2.00
Sub-total			25.95
+ Labour(5 man day)			6.25
Total		US$	32.20

8. ~~RAIN CATCHMENT~~ Tank of 5 m³

cement	13 Bag		48.75
Iron	47 KG	115.65	21.15
Sand + Gravel	3.05 m³		9.15
brick	2000 ea		36.60
Labour (18 man day)			12.50
			128.15

9. RCR of 4 m³

cement	10 bag	32.5
Iron	19.1 kg	8.6
		41.1 say 40

10. RCR of 250 L (2.5 kg of cement) 2,94 USD
11. RCR of 500 L (1 kg of cement) 9,57 USD
12. RCR of 1 m³ (2 kg of cement 5 kg of Iron) 18,85 USD

BREAKDOWN OF EXPENDITURES FOR THE CONSTRUCTION OF SANITARY FACILITIES
SANITATION PROJECT, UNICEF HANOI

DESCRIPTION	UNICEF CONSTRIBUTION	GOVERNMENT CONSTRIBUTION	PEOPLE CONSTRIBUTION	REMARKS
HOUSEHOLD LATRINE				Materials for construction of pits,
Double pit Pour Flush Water Seal Latrine				walls and slabs
+Cement (100-150kg)	US$7.5	0	0	Plus 10% of cement cost for
+Iron bars (7kg)	US$3.5	0	0	Southern provinces
+Pan and Trap (1set)	US$2.0	0	0	
+Sand,gravels,lime,bricks etc	0.0	0	$10 0-$15.0	Depending on the superstructure
+Labor cost	0	0	$5 0	
Sub-total	US$13.0	0	$15.0-$20.0	Total. US$ 28 0 US$ 33 0
Single pit Pour Flush Water Seal Latrine				Materials for construction of pits and slabs
+Cement (50-70kg)	US$4.0	0	0	
+Iron bars (6kg)	US$3.0	0	0	
+Pan and trap (1set)	US$2.0	0	0	
+Sand,gravels,lime,bricks etc	0 0	0	US$7 0	
+Labour cost	0 0	0	US$3 0	
Sub-total	US$9.0	0	US$10 0	Total: US$ 19.0
PUBLIC LATRINE				
Latrine for the Kindergatern/crech				
+Cement (300kg)	US$20 0	0	0	Materials for construction of
+Iron Bars (20kg)	US$10.0	0	0	pits, walls slabs and entrance
+Pan and trap (2sets)	US$ 4 0	0	0	
+Sand, gravels,lime, bricks etc	0.0	US$20.0	0	
+Labour cost	0.0	US$10.0	0	
Sub-total	US$34.0	US$30.0	0	Total: US$ 64.0
Latrine for Primary School				Materials for all construction work:
+Cement (3,000kg)	US$200.0	0	0	Each sanitary system includes
+Iron Bars (100kg)	US$50.0	0	0	1 septic latrine of 6 seats,
+Pan and trap (6sets)	US$12.0	0	0	1 tubewell with distribution system
+Labor cost	US$238.0	0	US$50.0	1 water reservoir, 1 Iron Removal
+Sand,gravels,lime,bricks etc	0.0	US$200 0	US$400 0	Plant (if needed)
+Handpump, PVC pipe and fittings etc	US$200.0	0	0	
Sub-total	US$700.0	US$200.0	US$450.0	Total: US$ 1,350.0

COMMENTS ON SOME OF THE POINTS RAISED IN THE EVALUATION REPORT BY THE NETHERLANDS EVALUATION TEAM ON THE WATSAN ACTIVITIES SUPPORTED BY NETHERLANDS

The Government of Netherlands with its increasing interest in the welfare of children has been supporting the UNICEF assisted rural water supply and environmental sanitation program in Viet Nam as a major donor since 1992 In late 1992, based on a UNICEF project proposal, an amount of US$ 2,651,402 was committed by the Netherlands Government, out of which US$ 2,034,844 was allocated to rural water supply and US$ 616,558 for sanitation to be used for the 3 year period 1993-1995

The Netherlands's contribution has been used to support a wide range of activities in service delivery, capacity building, social mobilization, communication and empowerment, as well as health and hygiene education The contribution made it possible to carry on with the positive trend in program implementation and has been essential and very effective for the good results achieved during 1993-1994 in helping the Viet Nam Government in their effort to achieve the targets of the National Plan of Action

From 5-17 December 1994, a mid-term evaluation of the UNICEF assisted rural water supply and environmental sanitation was carried out by the team of experts (it was proposed by the Netherlands Government and agreed by the Socialist Republic of Viet Nam and UNICEF) Mrs K Shordt, Mr H Van Schaik and Dr Cuong The evaluation team presented their findings and made recommendations for further enhancement of the program, with special emphasis on the utilization of the Netherlands contribution UNICEF thanks the team and appreciates their efforts and findings as well as the recommendations made This paper is intended to supplement the findings of the evaluation mission with additional information that may not have been sufficiently made available in December along with UNICEF Viet Nam's reaction to the findings It is thus hoped that the conclusions will be fully representative of reality.

Elaboration of the points are reflected below

A. Rural Water Supply

1. Coverage

The issue of coverage is a government policy matter. In the 1991-1995 SRVN-UNICEF WATSAN plan, it was envisaged that one water point will serve from 350-450 people This was brought down due to UNICEF urging to 120-150 people per water point in 1993 after long discussion with the Government It should be noted that the number per water source is an average user per source There are systems that are used by as many as 200 or 300 people However, we will take up the issue with the Government for coming up to much realistic figure.

2 Beneficiaries

Many years of experience in maintenance of the WATSAN systems in Viet Nam shows that for ensuring sustainability, it is appropriate to install the facilities especially the handpumps within the compound of a household who will act as care-taker to maintain and repair the system UNICEF assisted rural water supply and sanitation stresses the provision of facilities to unserved rural population focussing on poor ethnic minorities and mountainous areas through the rural water supply project establishment in the provinces and the people's committees However with the implementation of about 25,000 water points per year, it is difficult to ensure that all the systems are installed in poorest households only We will pursue the matter further with the Government for improvement

During the review of the 1st draft with consultant, it has been said that an agreement between landowner where the pump is installed and the community people's committee stating about the free access and maintenance aspects was being introduced

3 Per capita cost

The total cost of one well with a handpump is generally about US$ 250 and varying in accordance with the depth of the well and therefore in no way the per capita cost will come to US$ 20 or 30 even if the total beneficiaries will be as low as 3 families or 18-20 people We will nevertheless thoroughly look into this matter in the program

4. Maintenance

UNICEF provides a set of spare parts and tools for handpumps when installed The Government/RWSP/community takes up the responsibility of maintaining the system after the UNICEF's assisted set of spare-part is utilized It should be mentioned that handpump and spare-parts are available in the local market and in some cases, as suction pumps are very simple, the people are making running out part, mostly cup, from buffalo skin.

Out of that in the maintenance manual in Vietnamese, on the 2nd page, the procedures to obtain spare parts is also mentioned

Use of private sector is a good idea and we will encourage for ensuring sustainability With Government, we will thoroughly look into establishment of spare stores in two provinces for pilot purposes

A survey on the functioning of handpumps in the rural areas conducted in 1992 and 1993 by the Ministry of Science, Technology and Environment and Institute of Public Hygiene and Epidemiology, indicated that more than 90% of handpumps installed under the project were functioning fine

5 Improving the consumption level

The existing (1991-95) plan as well as the 1996-2000 plan recommend a distance from the source to household upto 250 meters with a consumption rate of 20 liters/person/day In most cases, at present the water point is on average between 20-50 meters The household connection of gravity flow schemes as recommended in the report may not be feasible now as it will considerably increase cost, but with the achievement of higher coverage, it may be considered

6 The impact of the safe water supply

We agree that there is risk of contamination of the safe water between the water source and the end use, and that is because we are emphasizing on the software aspects of the program focusing on health and hygiene education for bringing behavioral change and proper use of the safe water supply

As per national policy issued by Prime Minister, Youth Union, Women's Union and other are now working on these aspects

7. Improving water quality

In areas where iron content is high, iron removal plan is an integral part of the water supply system and should be constructed systematically. We will look thoroughly into this matter especially in Soc Trang as recommended in the report.

8. Gravity fed system

Each gravity flow systems implemented by UNICEF provide safe water for few hundred to about 4,000 people In 1994, 74 gravity flow systems were constructed under UNICEF assisted WATSAN program serving a population of 199,800 (not 4,000 per year as indicated in the report)

9 Delivery capacity

HCMC is not the only place for manufacturing handpumps and spare-part as mentioned in the evaluation report There are 8 factories in different provinces from North to South producing pumps and parts

B. Environmental Sanitation

1. General

The following points need to be stated as background information on the implementation of Environmental Sanitation project in Vietnam

a Environmental Sanitation activities in Vietnam, supported by UNICEF, started only recently (motivation of the government Ministries from 1988 and practical demonstration of a suitable latrine model from 1990) and **the project is implemented through the government**

b There is the age old practice of using excreta in the field in the north which was supported by the government for several decades earlier with widespread construction of Double Vault latrines for making compost from excreta (which caused high parasite infection when proper process was not observed) and to have latrines over ponds in the south for rearing fish The government has not come up with any legislation or enforcement measures to eliminate such practices

c. The apparent economic gain, seen by the people using excreta in the field or in pond, has stood in the way of demand creation for safe latrines, with properly sealed pits, from where excreta cannot be taken out to the field

d. Except for what UNICEF is trying to do, government's own initiative on social mobilization, advocacy and mass communication to outweigh this situation,is very low and financial support at the central and provincial level is practically nil, except for the school program Environmental sanitation is yet to be considered as a priority activity by the government Except for the Dutch and the Australian donation for sanitation in Vietnam, no other international agencies and NGOs have provided support. The combined effect of all the these may naturally show a picture in the country which one may not like to see However, the situation is fast improving in the selected areas where UNICEF is providing support

2. Executive summary

The suggestions made under items 4, 5,6 and 7 are good and actions would be taken to follow these

3. Evaluation

Table 6, page 23- the figures in 2 latrines may be placed against the 4 lines starting with household double pit Costs per latrine varies from US$ 19 to US$ 33

Target audience page 28 The acceptance of latrines by the poor is low because even for the demonstration latrines they are to invest a part of their money and labour UNICEF's support covers only a part of the total cost Impact study has shown that subsidy has done more harm than good Families not getting subsidy go on waiting for it It has been proposed not to give anything free from 1995 and loan system is now being implemented for the poor with a one year period for repayment The construction of safe latrines by the poor has already been linked with the income generating activities under the 'Women in Development' project from 1995 However the coverage is limited because of constraints of fund

5.2.1.2 Demand and communication.

We agree with the observations and UNICEF will increase its effort to motivate the government more and more on appropriate communication and education activities ahead of construction

5 2.1 3 Implementation mode

Since the project activities are extended to new provinces only recently, it may be true that implementors in some provinces are not yet very conversant with the guidelines and intended audience and technology This point is noted and necessary effort would be made to streamline the procedures and to enhance the knowledge of the implementors at the provincial level and below

5 2 1 4 Selection of families

Although UNICEF is not advocating for a strong/permanent superstructure over the latrine and there is no financial support for this, people have their own reasons for adoption of strong superstructures so that these are not damaged by recurring typhoons, flood and rain However, there are many latrines with less costly superstructures constructed under the project

5 2 1 5 Choice of technology, design, construction

The observations made are noted and follow up action would be taken UNICEF has specified only a few designs- one or two leach pits with pour flush latrines where water is available and one pit for dry/VIP latrines where water is not available However, at the local level the beneficiaries, who pay for most of the cost, prefer variations in the pit design and sizes and also the use of septic tanks These points would be discussed with the government and in the coming training programs Three dimensional models would also be prepared, as suggested, with estimated cost

5 2 1 6 Functioning and use

Yes, it is still a problem in some communes to stop the practice of use of excreta from the septic tanks in agriculture/ gardening This is a topic of discussion with the government every now and then Awareness creation and control would be emphasized to the government and the implementors It is an established fact that if the smokeless chula is constructed as per the given scientific design, there is a savings of about 40% fuel Many smokeless stoves, now in use in vietnam, are not of proper design and not an item supported through the project everywhere However, we will make an assessment The training needs, as suggested, would be met

5.2.2. Sustainability·

We value your suggestion that 60 % support, given as commodities, has created problem on transportation, distribution and additional costs Release of cash money may lead to misuse. Nevertheless, the existing policy of UNICEF in this regard will be reviewed for improvement.

5 3 Schools· observations

We have taken action to supply one set of posters, flipchart and a construction booklet to each commune and primary schools that are covered by the project However, the items were printed late in 1994 and distribution to the end user is still continuing through MOH, MOET and the provinces If additional funds are received, it would be possible to provide such advocacy materials to all other communes and primary schools Schools covered under the project have shown improvement in cleanliness but not in other schools The general state of cleanliness in the communes and schools depends on socio-cultural, economic, education and other factors To bring in behaviour change and cleanliness, much time, effort and funding would be needed The health, hygiene and environment curriculum, introduced in the primary schools, is a step in that right direction

5 4 1 Role of women and Women's Union

The suggestion of giving the role of management of fund and construction, besides motivation and education, to the

Women's Union are matters to be decided at the commune level in consultation with the commune people's committees This would be discussed with the government

Our proposal for loan per commune was US$ 2000 which had to be reduced to US$ 1000 because of shortage of fund Even with US$ 1000 per commune, we would be supporting only 4 to 5 communes per selected district in 1995

Monetary incentives to women motivator is a matter of debate All the health workers working in the communes are also demanding such incentives for doing project work of environmental sanitation It would not be possible at this stage, with this meager fund, to make a decision on incentives Experience from other countries suggest that cash incentive should be handled very carefully as it can destroy the project when stopped

5.4.2 Community participation and education

Deworming, which proved to be an extremely effective entry point, was continued till 1993 through the primary schools, selected under the project However, this had to be abandoned because of shortage of fund Private bathing as entry point is good and are being promoted through advocacy

4. Recommendations

6.2 Recommendations on Environmental Sanitation

We are in general agreement with the recommendations made and suitable actions would be taken on most of the recommendations, based on availability of fund hereafter The Dutch funding of US$ 92,300 for 1995 has already been earmarked for activities planned in November,1994, in the APB and are being utilized These activities, however, cover most of the recommendations made in the last section in page 47

UNICEF WATSAN staff

On page 16 of the evaluation report, the description of responsibilities of the WATSAN staff should be corrected as below

Michel C Nowacki, Senior Project Officer, Chief, WATSAN Section
Mohammad Omar, Project Officer, Water
Waldemar Pickardt, Project Officer, Water
B. K Das, Project Officer, Sanitation
Nguyen Trong Quang, Assistant Project Officer, Water, HCMC
Hoang Thuy Lan, Assistant Project Officer, Communication & Social Mobilization
Nguyen Quy Hoa, Assistant Project Officer, Water
Nguyen Quang Quynh, Senior Project Assistant, Sanitation
Le Quang Vinh, Senior Project Assistant, fund and supply monitoring

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